40

1984 - 2024

Interactive Catalogue



2025/26 CATALOGUE

07-26_I3E

# making connections, powering tomorrow

## Electrification and Automation for Over 40 Years

Whether you are new to ElectroMechanica or have been a valued partner over the past four decades, we are grateful to be able to serve you. Our steadfast commitment is to empower industry through safe and innovative solutions underpinned by a tradition of reliability and excellence.

We extend our appreciation to those who have trusted us over the years. Your loyalty has been instrumental in shaping our progress and success. For our new and future customers, we look forward to collaborating and supporting your growth, turning challenges into opportunities with products and services that drive success.

We are dedicated to more than just delivering products; we are committed to forging lasting connections that will power tomorrow's industrialisation.

40 EM 1984 - 2024








# Contents


A Motor Control & Motors 

B Power Distribution & Protection 

C Automation 

D Control & Signalling 

E Metering 

F Power Quality 

G Monitoring & Control 

H Enclosures & Climate Control 

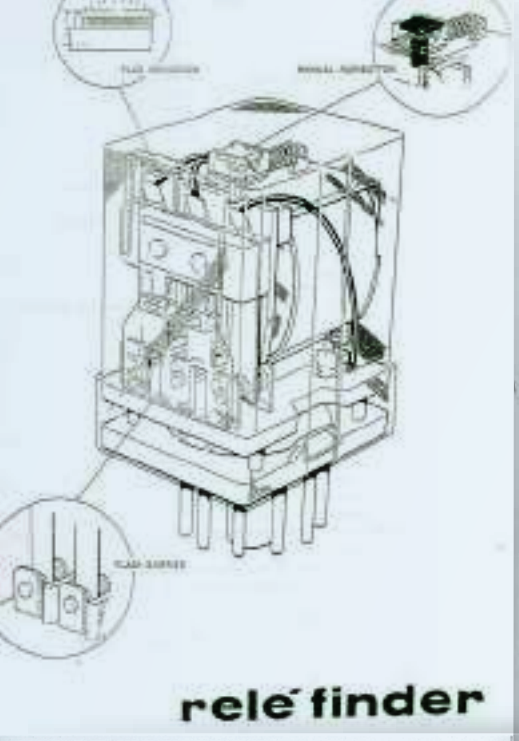
I Plugs & Sockets 

J Timers & Control Relays 

K Field Switching, Sensing & Safety 

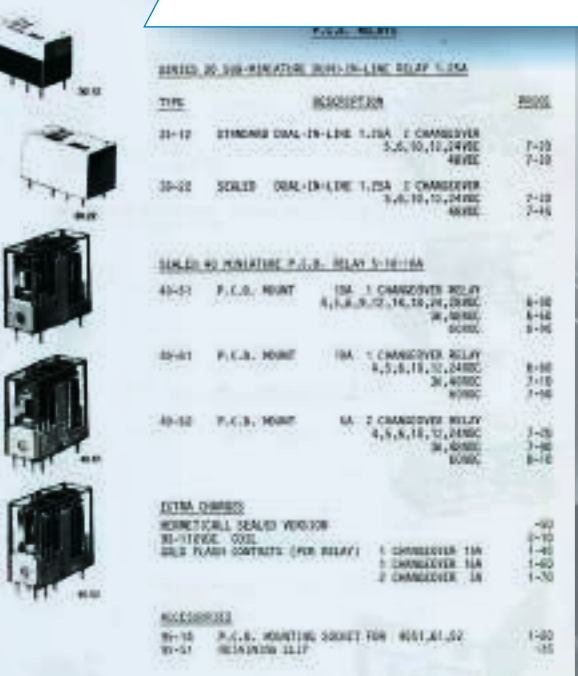
L Termination & Wiring 

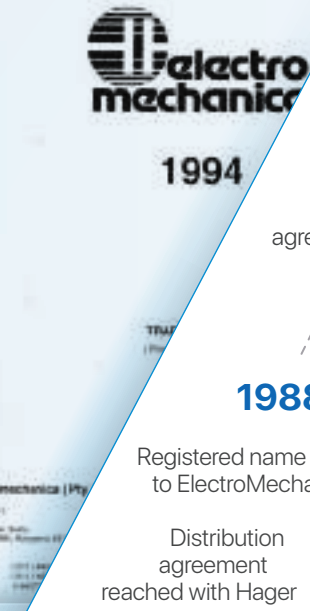
M Cable & Testing Tools 







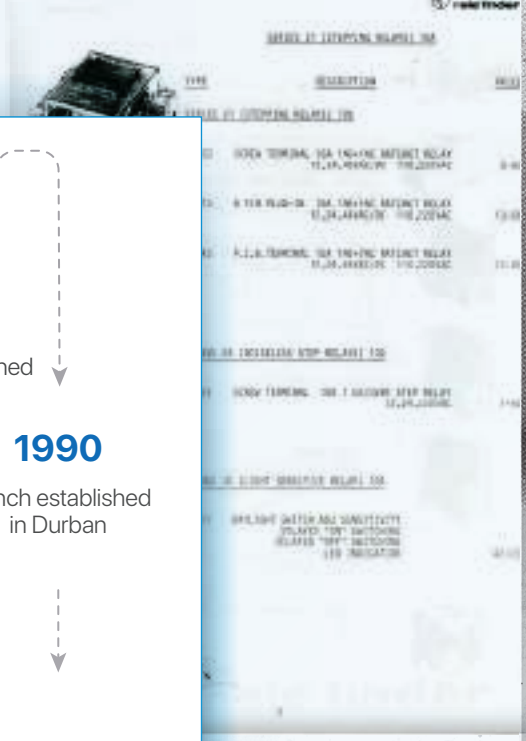


















**1984**
Distribution agreement reached with Lovato

Distribution agreement reached with Finder

Company was established as "Finvato"

**1986**
Anchor reseller agreement established in Pretoria

**1988**
Registered name changed to ElectroMechanica

Distribution agreement reached with Hager

**1989**
Anchor reseller agreement established in Harare

**1990**
Branch established in Durban

**1991**
Power Factor design and assembly established

**1994**
Branch established in Cape Town

**1996**
Anchor reseller agreement established in Gqeberha

Distribution agreement reached with Scame

**1998**
Distribution agreement reached with DF Electric


2016
Established Distribution Centre in Johannesburg
2017
Pump panel design and assembly established
2018
Branch established in Nelspruit
2019
Mechatronics academy launched in joint venture
Branch established in Bloemfontein
2021
Branch established in Gqeberha
2022
20th edition EM catalogue released
2024
Distribution agreement reached with Techtop
Celebrating 40 years of empowering the industry
2015
Branch established in Boksburg
2011
Distribution agreement reached with Ezi Canal
2006
Distribution agreement reached with Delta
2000
Distribution agreement reached with Socomec
CATALOGUE
CATALOGUE 2002
CATALOGUE 2022/23
2002 gen
catalogue
Control solu
for industry
ElectroMecha
ElectroMechanica
World's best switchgear brands
brought to Africa by people, passionate about service.

# Technology partners worldwide, market leaders in their respective fields.






## Technology Partners: The Numbers Behind Us

**$20 billion+**
Total Annual Revenue

**$1.5 billion+**
Annual R&D Investment

**120,000+**
Skilled & Dedicated Workforce

**100+**
Global Manufacturing Facilities

# What's New



## Contactors AC/DC control

A1

Lovato Electric has expanded the BF Series, introducing new contactors for AC-3 applications at 400V, along with 450A, 500A, and 600A for AC-1. These contactors feature an electronically controlled AC/DC coil for low power consumption and reliable performance under varying voltage conditions.

- Space-efficient design at 140mm wide
- Low power consumption and wide voltage range
- Versatile wiring options: both top and bottom coil configurations

See page A-2...7



## Soft Starters

A1

Lovato Electric ADXT soft starters designed for outstanding performance, reliability and durability, making it ideal for heavy-load operations like running crushers, fans, and conveyors. Advanced features minimise energy consumption in variable and constant-speed applications.

- Integrated bypass relay minimises energy consumption
- Allows for in-line or inside-delta connections
- Voltage ranges from 380 to 690 VAC

See page A-14



## Electric Motors

A3

The range of Techtop IE3-rated electric motors engineered for superior energy efficiency and regulatory compliance, making it ideal for modern industrial demands. Delivering cost-effective performance across various industrial applications, from manufacturing to heavy-duty processing.

- Suitable for use with VFDs (class H insulation)
- Conforms to SANS/IEC 60034-2-1
- 2, 4 and 6-pole from 0.75 - 355 kW

See page A-37...40



## Air Circuit Breakers

B2

The Hager hw+ series features compact ACBs and Switch Disconnectors tailored for use across residential, commercial, and industrial applications. This line offers superior protection and seamless integration, blending cutting-edge technology with unparalleled reliability to meet the highest safety standards.

- Fixed/draw-out versions with vertical/horizontal connections
- Secure, user-friendly Sentinel LSIG trip unit
- Customisable with a wide range of accessories

See page B-27...30

VTScada

## Supervisory Control and Data Acquisition Systems

G

VTScada an award-winning system for real-time monitoring and control of industrial operations, brought to you by Trihedral, a Delta Group Company. User-friendly interface and advanced visualisation make it ideal for all users ensuring operational excellence across industries.

- Integrated, configurable historian
- Built-in redundancy and failover
- Real-time and historical data visualisation

See page G-6



## Modular Floor Standing Distribution Board System

H

The Hager quadro evo range is the latest innovation in main distribution boards, providing advanced solutions for projects up to 4000A. Fully compliant with IEC 61439-1&2, it offers multiple safety classes and easy configuration to meet the demands of any project.

- High performance up to 4000A (Icw 85kA) with robust structure
- New design offers more space for easier wiring and maintenance
- Quick and easy assembly with configurable components

See page H-7...12

Explore the full range of over **1000+** new products in this catalogue, and discover how EM is committed to driving your success with cutting-edge technology.



## Variable Frequency Drives

A2

Delta VP3000 series is designed to meet rigorous demands of HVAC and water treatment applications, providing exceptional performance and state-of-the-art features. The range is crafted to integrate seamlessly with IM, PM, and high-efficiency SynRM motor control modes.

- Built-in EMC filter compliance EN61800-3 C2, C3
- Built-in Safe Torque Off (STO) SIL3
- Supports BACnet, Modbus, EtherNet, Profinet, and CANopen communication protocols

**See page A-28**



## Pump Panels

A2

The Electron "Lite" series presents a pump panel system featuring pre-set parameters and a user-friendly interface with LED display and built-in potentiometer. Housed in a compact metal enclosure. Suited for various applications, including irrigation, boreholes, booster pumps, and water storage tanks.

- Pre-configured parameters for irrigation applications
- Constant pressure control using a pressure transmitter
- Ready-to-install and cost-efficient

**See page A-33**



## Photovoltaic Load Break Switches

B3

Socomec INOSYS LBS range is designed for DC high-performance power switching in a compact frame, ensuring safe and reliable operation in harsh environments. With a modular design for flexible configuration, easy to install and ideal for various industrial high-voltage DC applications.

- Breaking capacity of 1500 VDC in just two poles
- Conforms to DC-PV2, DC-21B and IEC 60947-3
- Single switch poles 160 - 630A, Double 800 - 1600A

**See page B-34**



## Servo Drives & Motors

C

The Delta A3 servo range is designed to meet the stringent requirements of precise motion control. Delivering high-speed motion control for a wide range of applications. The compact design and advanced control algorithms ensure optimal performance.

- High-precision motion control with a 3.1 kHz frequency response
- 16,777,216 pulses/turn for extremely accurate positioning
- Energy-efficient operation with real-time auto-tuning capabilities
- Compact design offering flexible installation options

**See page C-19...21**



## Photoelectric Sensor with Onboard Processing

K

The Datasening SMART-VS+ system is powered by advanced machine learning algorithms, enabling precise object classification. Its innovative design eliminates the need for programming or threshold setting, ensuring a seamless and user-friendly setup.

- Machine learning assistance for automatic sensor setup
- 50 - 150mm operating distance and electronic focus control
- TEACH button and comprehensive UI with 5 status LEDs

**See page K-14**



## Safety Light Curtains with Muting

K

The Reer Safegate Type 4 range offers robust protection for high-risk industrial applications, especially those requiring seamless integration of muting functions. Designed for reliability, Safegate ensures perfect integration of all muting sensors, directly connecting them to the access control barrier.

- Integration of muting sensors with the access barrier
- Flexible hardware and software configurations
- Integrated end-cap LED for real-time operational status diagnostics

**See page K-50**

# Index


3G cloud router G-4/6

Absolute encoders C-23
AC motor drives A-21…36
AC reactors A-33
ACBs B-22…24
Acoustic signalling devices D-23/25/27/29...30/32
Active energy meters E-2…6/10…17
Active Power Filters F-14
Adhesive tie mounts L-15
Air circuit breakers B-22…24
Air pressure switches K-20...21/29
Alarm bells N-17
AMF controllers F-1
Ammeter selector switches D-10/11
Ammeters E-7...8/18/D-15
Analog output proximities K-3
Analog signal converters J-28
Analogue panel meters E-18
Analogue time switches B-12
Anti-harmonic reactors F-12
APF (Active Power Filters) F-14
Appliance inlets I-2
Area sensors K-10
Astronomical time switches J-21/24
ATS F-3
Automatic changeover switches B-35…39
Automatic mains failure controller F-1..2
Automatic transfer switch F-3
Automatic transfer switches B-35…39

Bar mounted connectors L-42/44/45
Battery chargers F-4
Battery operated crimpers M-6
Battery protection fuses B-52
Belt alignment switch N-5
Blade connectors I-17...18
Blade type HRC fuse links B-50…54
Blanking plugs L-26
Bolt type fuse links B-58
Bootlace terminals L-17/18/21
Brace terminals L-44
Braided earth links L-41
Braided sleeving L-32
Braking units/resistors A-34
Branch monitoring E-5...6
BS88 fuses B-40/58
Buffer module B-66
Bullet connectors L-21
Busbar L-36/39
Busbar clamps L-38
Busbar insulators L-37
Busbar mounted fuse holders B-55...56/L-45/46
Busbar support B-57/H-11/L-34/36/38/43/44/46
Busbar systems L-34/38/43/44/46
Busbar terminals L-42/44/45
Buzzers D-3/14/25
Bypass switches B-33

Cabinet cooling units H-23..24
Cable carriers L-14
Cable cutter M-4/5
Cable cutting machine M-4
Cable cutting tools M-4/5
Cable ducting L-11
Cable glands L-25…30
Cable knives M-2
Cable lugs L-19…24
Cable marking system L-10/L-48...49
Cable preparation tools M-1...2/4
Cable shears M-4
Cable stripping machine M-4
Cable stripping tools M-1...2
Cable tags L-48/49/55
Cable ties/tensioning tool L-15...16
Cam switches D-10/11
Capacitive proximity switches K-4/11
Capacitor switching contactors A-6/F6
Capacitors F-8
Cascading chart B-21
Changeover switches A-17…20/B-8/32…39/D-10/11
Circuit breakers B-1…26
Clamp multimeter M-10
Clamping yokes L-4/9
Clip-on cable markers L-49
Clockwork timers J-29
Cloud monitoring system G-1/6
Coded safety switches N-7/10
Communication devices G-1…6
Component adaptors B-57
Compression glands L-25…30
Consumer units I-8
Contactors A-1…6/B-11J-11
Container plugs I-5
Control and signalling devices B-13/D-1…16
Control relays A-1…3/B-11/J-1…16
Control stations D-9/17
Control transformers B-13/68
Conveyer belt alignment switches N-5
Corrugated conduit L-27
Couplers I-1...2
Crimping lugs L-19…24
Crimping tools M-2…7
CTs E-19…24
Current monitors J-18/25/27/35/38…40
Current transducer J-28
Current transformers E-19…24
Cylindrical fuses B-43…48

Data logger E-17/G-6
Data network surge protection G-7/N-16
Daylight switches J-21/24/26
DC circuit breakers B25/26
DC shunts E-24
DC-UPS module B-66
Defrost timer J-34
De-tuned reactors F-12
Die sets for crimping tools M-7
Differential pressure transmitters K-21
Digital ammeters E-7/8
Digital clamp meter M-10
Digital counter J-29...30
Digital multimeter M-9
Digital time switches B-12/J-21/24
Digital volt/ammeters E-7/8
DIN mounting rail L-13
DIN rail cutter M-8
Direct on line starters A-8
Disconnect terminals L-1/5...7/20/21
Distribution assemblies I-9
Distribution blocks H-12/L-36/42
Distribution board sockets B-13/I-9
Distribution boards H-3…10/13...14/I-8
Distribution terminals L-33/35/36
DOL starters A-8
Domestic switches and sockets I-10
Drag chains L-14
Dual colour indicators D-14

Earth braids L-41
Earth leakage units B-9/10/61/62
Earth terminals H-12/L-1//2/3/5/7/33/35
Easy branch power monitoring E-5...6
Easy connect modules L-45
Electrical installation tester M-13
Electronic earth leakage devices B-10/59/60
Electronic motor protection A-15/16
Electronic overloads A-7/15/16
Electronic sirens D-31
Electronic timers B-12/D-14/J-17/23/27/32/33/36
Elevator drives A-29
EMC filters A-34
Emergency stop buttons D1-2/5/17
Emergency stop stations D-9/N-5
Enclosed changeover switches A-20/B-34/39
Enclosed Isolators A-19/B-31/34
Enclosures H-1…17
Encoders C-23
Energy management software G-1/6
Energy meters B-14/E-1/9
Ethernet cloud router G-1…6
Ethernet gateway/switches G-1…5
Exhaust fans H-18...21
Expandable sleeving L-32

Fan and pump drives A-27/28
Fans H-18...21
Feed through terminals L-1…9
Feed-in terminals L-42
Ferrules L-18...19/24
Fibre-optic sensors K-15/16
Fieldbus solutions G-1/4
Filter fans H-18...21
Fire alarm bell N-17
Fire rated switches I-7
Flat blade connectors I-17...18
Flexible busbar L-39…41
Flexible conduit L-27
Flexible earth braids L-41
Flexible shunts L-40/41
Flip flop relay J-34
Float switches J-20/K-35
Floor standing enclosures H-6…10
Flow sensors K-22
Flow switches K-29/36/38
Foot switches K-32/34
Fork sensors K-10
Fork terminals L-19/22
Frequency meters E-7/8/18/D-15
Fuel level sensor/guages K-39
Fuse bases B-43…54
Fuse combination switches B-40
Fuse holders B-13/B-41/45/47/52/54/L-45/46
Fuse links B-43…53
Fuse switch disconnectors B-55…57
Fuse terminals L-3/6...7
Fuses B-43…53
Fuse switch disconnectors B-55...57/L-45...46

Gateways G-1/4...6
Gearboxes C-22
Generator controllers F-1..2
Gland adaptors L-26/29
Glass fuses B-43
Grab wire safety rope switch N-3...4/11
Guard locking switches N-6

Harmonic reactors F-12
Heat shrink tubing L-32
HMIs C-17/18
Hour counters E-18
HRC fuse links B-50…53
Human machine Interface C-17/18
Humidity controller J-37/40
Hydraulic crimping/cutting tools M-5…7
Hygrostat H-18/21

Impulse counter J-29…30/38
Incline sensor K-4
Incremental encoders C-23
Indicator lights D-2/3/6/13…16
Inductive proximity switches K-1…5/11…12
Industrial PCs C-16
Industrial plugs and sockets I-1…7/11…18
Industrial power supplies B-65…67
Industrial switch sockets I-4/6…7
In-line connector L-26
Installation connectors I-12
Insulated braided links L-40
Insulated busbar L-39…40
Insulated cable lugs L-19…22
Insulated cord-end terminals L-17/21
Insulated enclosures H-1/2
Insulated ferrules L-17/19/21
Insulated terminal crimpers M-3
Isolators A-17…20/B-8/18/27…39

Joystick operators D-6/19/20
Junction boxes H-1/2/L-31

Key switches D2/5/7/12
kWh meters B-14/E-1/9

Labels L-48…55
Laser sensors K-18
Latching relays B-11
LED beacons D-23...27
LED pilot lights D-2...4/6/13...16
Legend holders L-48…53
Level control relays J-19/26...27/31/36
Level electrodes J-19/36
Level sensing transmitters K-20
Light curtains N-8
Lightning protection B-14/59…64/N-13...N16
Limit switches D-21...22/K-31...34/N-11
Liquid level controllers J-19/26...27/31/36
Liquid level sensors K-33/34/37
Load-break switches A-17…20/B-27…39
LTE gateway G-1

Magnetic float switches K-37
Magnetic safety switches N-7/10
Managed Ethernet switches G-3/4
Manual motor starters A-9/10
Mark sensors K-18
Marking legends L-50…53
Marking system L-47…55
Marking tags L-16/48…55
Maximum demand ammeters E-7/8/18
MCBs B-1…7/25
MCCBs B-15…21/26
Mechanical clockwork timers J-29
Mechanical interlocks A-5/B-24
Medium voltage drives A-35/36
Membrane cable glands L-30
Metallic housings H-18
Metering instruments E-2…6/10…17
Micro switches K-30
Mini contactors A-1
Miniature circuit breakers B-1…7/25
Miniature relays J-1…7
Miniature toggle switches D-35
Modular contactors B-11/J-11
Modular digital monitors E-7/J-30...32/39
Modular electronic timers B-12/J-17/23/27
Modular fuse holders B-13/43...48/L-45...46
Modular housings J-36
Modular Isolators B-8
Modular latching/step relays B-11/J-12
Modular pilot lights B-13
Modular relays B-11/J-11
Modular relays J-11
Modular sockets B-13/I-10
Modular time switches B-12/J-21/24
Monitoring gateway G-1/6
Motion controllers C-21
Motion detectors K-40
Motor management and control A-15/16
Motor protection circuit breakers A-9/10
Motor protection relays A-15/16
Motor rated fuses B-43/49
Motorised changeover switches B-35…39
Motorised timers J-29
Moulded case circuit breakers B-15…21/26
Mounting rail L-13
Movement detectors K-40
Multi pin plugs/sockets I-1…7/11…18
Multifunction meters E-2…6/10…17
Multi-function timers J-17/23/27/30/32…33
Multimeters M-9/E-2…6/10…16
Multi-tier terminals L-1...2/5/7

Namur proximity switches K-11
Network analysers E-2…6/10…17/M-11
Neutral terminals H-14/L-33/35

Occupancy sensors K-40
One-piece pushbuttons D-3/12
Optical level sensors K-37
Outdoor switches and sockets I-10
Output AC reactors A-33

Panel airconditioners H-23...24
Panel ventilation H-18...24
Panel heaters H-18/21
Panel labels L-52...55
Panel lights H-22/24
Panel meters (digital) E-7/8/J-37...40
Panel mount buzzers D-14/25
Panel mount digital meters E-7/8/J-37...40
Panel mount signalling devices D-25...26
Panel mount temp/Hz meters D-15
Panel mount timer D-14
Panel mount volt/ammeters D-15
Panel plates L-52...53
Panel thermostats H-18/21
PCB relays J-1…7
Pendant control stations D-17/18
Phase failure/reversal relays J-18/25/27/31/35
Photoelectric sensors K-5…18
Photovoltaic circuit breakers B-25/26
Photovoltaic connectors I-16
Photovoltaic fuses B-46/51...52
Photovoltaic surge protection B-62/64/N-14/16
Photovoltaic switches B-30
Pilot lights B-13/D-3/6/13…16
Pin lugs L-19/22
Plastic enclosures/housings H-1/2J-36
PLCs C-1…14/24
Plugs and sockets I-1…7/11…18
Polycarbonate enclosures H-4
Portable network analyser M-11
Position limit switches D-22
Potentiometers D-3
Power analysers E-2…6/10…17/M-11
Power and energy logger M-11
Power distribution blocks L-33/36
Power factor capacitors F-8
Power factor controllers F-5
Power factor racks F-9
Power factor systems F-8…14
Power relays J-5/7
Power supplies B-65…67
Power/harmonic clamp meter M-10
Pre insulated terminals L-19…22
Presence detectors K-40
Pressure equalising devices L-30
Pressure sensors/transmitters K-19...20/28
Pressure switches K-20/21/29/36
Programmable logic controllers C-1…14/24
Proximity switches K-1…5/11/12
PT100 sensors J-28/38/40
Pump panel A-31/32
Pump protection relay J-18/31/36
Pushbutton legends L-52
Pushbutton stations D-9/17
Pushbuttons D-1…7/12/16
PV circuit breakers B-25/26
PV connectors I-16
PV interface protection E-2
PV switches B-30

Quick-splice connectors L-21

Rail mount power supplies B-65…67
Rail mount terminals L-1…9
RCDs B-9/10
Reactive control relays F-5
Redundancy module B-66
Reefer Plugs and sockets I-5
Relay interface modules J-9...10
Relays B-11/J-1…16
Residual current devices B-9/10
Resistors A-34
Reversing starters A-8
RFID coded safety switches N-7/10
Rogowski coils E-20/M-11
Rope operated switches K-31...32/N-3...4/11
Rotary beacons D-24/27
Rotary cam switches D-10...11
RTD sensors K-27
Running hour meters E-18

Safety controllers N-9...10
Safety enclosures B-31
Safety gloves N-16
Safety light curtains N-8
Safety limit switches K-31/34/N-7/11
Safety lockout hasps N-12
Safety relays N-9...10
Safety rope switches N-3...4/11
Safety switches N-3…11
Safety transformers B-68
Scada systems C-16
Selector switches D-2…7/10/11
Self adhesive marking legends L-50…53
Semiconductor fuses B-47...48/53
Sensor connectors K-23...24
Servo drives C-19
Servo motor gearboxes C-22
Servo motors C-20
Sheet metal enclosures H-13...17
Shrink tubing L-32
Shunts E-24
Signal beacons D-23…34
Signal converters J-28/38/40
Signal towers D-26…34
Signalling devices D-23…34
Sirens D-31
Slide on cable markers L-10/L-49
Slip ring collectors D-20
Slotted trunking L-11
Smoke detectors N-17
Sockets I-3…7/11…16
Soft starters A-13…14
Solar connectors I-16
Solar pump panel A-31
Solid state relays J-9...10/13…16
Speed controller J-32
Spiral binding L-27
Spiral wrapping band L-27
Split core CTs E-23
Spring clamp terminals L-2/7
Spring supported terminals L-4/6
SSRs J-13…16
Stacklights D-26…34
Stainless steel cable ties L-16
Stainless steel enclosures H-16...17
Stainless steel glands L-25
Staircase timer J-24
Stand alone gen-set controllers F-2
Stand-off insulators L-37
Star-delta starters A-11
Star-Delta timers J-17/27/30/33
Static Var Generators F-13
Step relays B-11/J-12
Strain relief glands L-26
Stripping/crimping machine M-4
Stud terminals L-3/5
Summation CTs E-22
Surge protection devices B-14/61...64/N-13...16
SVG (Static Var Generators) F-13
Switch disconnectors A-17…20
Switch fuses B-40
Switch socket outlets I-4/6...7
Switching power supplies B-65…67
Synergy supervision software G-6

Tachometer relay J-29/34
Tag holders L-48..52
Temperature controllers J-32/37...38/40/K-25...26
Terminal blocks L-1…9/33/35
Terminal markers L-54
Terminal posts L-33/35
Termination boxes H-1/2/16/L-31
Text panels C-18
Thermal camera M-12
Thermal overloads A1/7
Thermal transfer printer L-47/55
Thermocouples K-27
Threaded busbar L-36
Thyristor switching modules A-6/F6
Time switches B-12/J-21/24
Timing devices J-17/23/27/32...34/37...39
Toggle switches D-35
Tongue operated switches N-6
Traffic lights D-28
Transformers B-13/68
Transparent tag holders L-48..52
Trunking (slotted) L-11
Two hand control J-34

Ultrasonic sensors K-9
Unequal timers J-17/23/30/33

Vandal proof pushbuttons D-7/16
Variable speed drives (VSDs) A-21…32
Vent plugs/glands L-30
Vertical fuse rails/disconnectors B-55...56
Vibration sensor K-4
Voltage absence tester M-9
Voltage monitors J-18/25/27/35/38...39
Voltage transducer J-28
Voltmeter selector switches D-10/11
Voltmeters E-7/8/18/D-15

Weatherproof plugs and sockets I-10/11…16
WiFi smart switch J-23
Wire end sleeves L-17...18/21
Wire ferrule crimper M-3...4
Wire markers L-10
Wire strippers M-1...2
Wireless gateway G-4...5
Wiring duct L-11
Wiring duct cutter M-8
Wormgear limit switches D-21

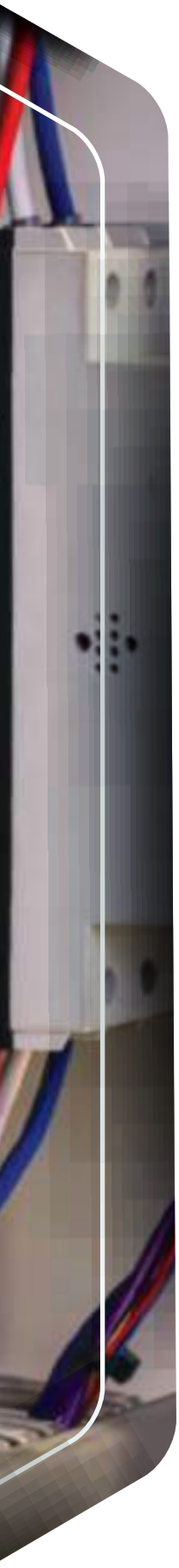
Zero phase reactors A-34




A

# Motor Control and Motors

Interactive Catalogue



# Motor Control & Motors

A

## A1 Motor Control Gear



Contactors & Accessories
A-1...10



Direct on line & Soft starters
A-11...16



Load break & Changeover switches
A-17...21

## A2 Variable Frequency Drives



Variable frequency drives
A-23...31



Pump panels
A-33...34



AC reactors & Sinewave filters
A-35...36

## A3 Electric Motors



Electric motors (cast iron)
A-37...40



Electric motors (aluminium)
A-38/40



Electric motors accessories
A-41

Need help navigating the interactive catalogue?
Scan the QR code for a short tutorial video.


BG0901A

## Three-pole mini contactors (Ui 690V)

| type | rated current (AC1) | rated current (AC3) | kW rating (AC3) 400V | control | description | auxiliary contacts | price |
|---|---|---|---|---|---|---|---|
| **BG0610A...** | 16A | 6A | 2.2 kW | AC | 3-pole mini contactor | 1NO | **409.50** |
| **BG0910A...** | 20A | 9A | 4.0 kW | AC | 3-pole mini contactor | 1NO | **483.00** |
| **BG0901A...** | 20A | 9A | 4.0 kW | AC | 3-pole mini contactor | 1NC | **483.00** |
| **BG1210A...** | 20A | 12A | 5.7 kW | AC | 3-pole mini contactor | 1NO | **551.25** |
| **BG1201A...** | 20A | 12A | 5.7 kW | AC | 3-pole mini contactor | 1NC | **551.25** |
| **BG0910D...** | 20A | 9A | 4.0 kW | DC | 3-pole mini contactor | 1NO | **645.75** |
| **BG0901D...** | 20A | 9A | 4.0 kW | DC | 3-pole mini contactor | 1NC | **645.75** |


BG09T4D

## Four-pole mini contactors (Ui 690V)

| type | rated current (AC1) | rated current (AC3) | kW (AC1) 230V | kW (AC1) 400V | control | description | main contacts | price |
|---|---|---|---|---|---|---|---|---|
| **BG09T4A...** | 20A | 9A | 8 | 14 | AC | 4-pole mini contactor | 4NO | **606.90** |
| **BG09T2A...** | 20A | 9A | 8 | 14 | AC | 4-pole mini contactor | 2NO + 2NC | **615.30** |
| **BGP09T4A...** | 20A | 9A | 8 | 14 | AC | PCB mount contactor | 4NO | **1 186.50** |
| **BG09T4D...** | 20A | 9A | 8 | 14 | DC | 4-pole mini contactor | 4NO | **1 459.50** |
| **BG09T2D...** | 20A | 9A | 8 | 14 | DC | 4-pole mini contactor | 2NO + 2NC | **1 533.00** |

*Standard coil voltages (add to part number):* ***AC*** - 024/048/110/230/400
***DC*** - 012/024/048/060/110/220


BGX1020

## Control relays / AC control circuit

Control relays are used where additional contacts are required to switch low-level current loads such as pilot lights, motor starters, or other relays.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **BG0040A...** | 10A | – | – | – | AC | mini control relay | 4NO | **564.90** |
| **BG0031A...** | 10A | – | – | – | AC | mini control relay | 3NO + 1NC | **564.90** |
| **BG0022A...** | 10A | – | – | – | AC | mini control relay | 2NO + 2NC | **564.90** |

*Standard coil voltages (add to part number):* ***AC*** - 024/048/110/230/400


BGX1040

### Auxiliary contact blocks for above mini contactors 10A Ith / Ui 690V

| | | | | | | |
|---|---|---|---|---|---|---|
| **BGX1020** | 10A | clip-on auxiliary contact | – | for BG contactors | 2NO | **252.00** |
| **BGX1011** | 10A | clip-on auxiliary contact | – | for BG contactors | 1NO + 1NC | **252.00** |
| **BGX1002** | 10A | clip-on auxiliary contact | – | for BG contactors | 2NC | **252.00** |
| **BGX1040** | 10A | clip-on auxiliary contact | – | for BG contactors | 4NO | **585.90** |
| **BGX1022** | 10A | clip-on auxiliary contact | – | for BG contactors | 2NO + 2NC | **585.90** |
| **BGX1004** | 10A | clip-on auxiliary contact | – | for BG contactors | 4NC | **585.90** |


G324

### Accessories *for above mini contactors*

| | | | |
|---|---|---|---|
| **BGX8000** | modular shroud to raise the front degree of protection to IP40 | | **73.50** |
| **BGX5000** | mechanical interlock | for BG contactors | **289.80** |
| **G324** | paralleling links *(2-pole)* | for BG contactors | **175.35** |
| **G326** | paralleling links *(4-pole)* | for BG contactors | **189.00** |


BGX5000

## Thermal overload relays for above mini BG contactors

**RF12 series - Mini thermal overload relays**

**General features:**
- Compensated, differential single-phase protection
- Incorporating test button facility and mechanical trip indication
- Adjustable range: 0.10 - 12.50A
- Selectable automatic or manual reset
- NO + NC auxiliary contacts
- Phase failure sensitive


RF12...

| type | kW rating AC3 (400V) | description | adjustable range | for contactors | price |
|---|---|---|---|---|---|
| **RF120016** | – | thermal overload relay | 0.10 - 0.16A | BG6/9/12 | **770.70** |
| **RF120025** | – | thermal overload relay | 0.16 - 0.25A | BG6/9/12 | **770.70** |
| **RF120040** | 0.06 kW | thermal overload relay | 0.25 - 0.40A | BG6/9/12 | **770.70** |
| **RF120063** | 0.12 kW | thermal overload relay | 0.45 - 0.63A | BG6/9/12 | **770.70** |
| **RF120080** | 0.18 kW | thermal overload relay | 0.55 - 0.80A | BG6/9/12 | **770.70** |
| **RF120100** | 0.25 - 0.37 kW | thermal overload relay | 0.75 - 1.00A | BG6/9/12 | **770.70** |
| **RF120160** | 0.55 kW | thermal overload relay | 1.10 - 1.60A | BG6/9/12 | **770.70** |
| **RF120250** | 0.75 kW | thermal overload relay | 1.80 - 2.50A | BG6/9/12 | **770.70** |
| **RF120400** | 1.10 - 1.50 kW | thermal overload relay | 2.90 - 4.00A | BG6/9/12 | **770.70** |
| **RF120630** | 2.2 kW | thermal overload relay | 4.50 - 6.30A | BG6/9/12 | **770.70** |
| **RF121000** | 4.0 kW | thermal overload relay | 7.20 - 10.00A | BG6/9/12 | **770.70** |
| **RF121250** | 5.5 kW | thermal overload relay | 9.00 - 12.50A | BG6/9/12 | **770.70** |



Above ZAR prices do not include VAT. E&OE


BF0910A


BF2600A


BF5000A

New


AC
DC
BF23000E...


BF26500E

New


BF265T4E

## BF series - Contactors

- Distinct contact status indication
- Quick connect - snap-on accessory mounting
- Mechanical interlock without overall dimensions increasing
- Rigid connection kits for fast wiring without mistakes *(see contactors accessories)*
- AC/DC coil with electronic control - Wide operating range

| type | rated current (AC1) | rated current (AC3) | kW rating (AC3) 400V | control | description | auxiliary contacts | price |
|---|---|---|---|---|---|---|---|
| **Three-pole contactors** (Ui 690V) / AC control circuit | | | | | | | |
| **BF0910A...** | 25A | 9A | 4.2 kW | AC | 3-pole contactor | 1NO | **609.00** |
| **BF0901A...** | 25A | 9A | 4.2 kW | AC | 3-pole contactor | 1NC | **609.00** |
| **BF1210A...** | 28A | 12A | 5.7 kW | AC | 3-pole contactor | 1NO | **724.50** |
| **BF1201A...** | 28A | 12A | 5.7 kW | AC | 3-pole contactor | 1NC | **724.50** |
| **BF1810A...** | 32A | 18A | 7.5 kW | AC | 3-pole contactor | 1NO | **976.50** |
| **BF1801A...** | 32A | 18A | 7.5 kW | AC | 3-pole contactor | 1NC | **976.50** |
| **BF2510A...** | 32A | 25A | 12.5 kW | AC | 3-pole contactor | 1NO | **1 365.00** |
| **BF2501A...** | 32A | 25A | 12.5 kW | AC | 3-pole contactor | 1NC | **1 365.00** |
| **BF2600A...** | 45A | 26A | 13.0 kW | AC | 3-pole contactor | – | **1 470.00** |
| **BF3200A...** | 56A | 32A | 16.0 kW | AC | 3-pole contactor | – | **2 089.50** |
| **BF3800A...** | 56A | 38A | 18.5 kW | AC | 3-pole contactor | – | **2 467.50** |
| **Three-pole contactors** (Ui 1000V) / AC and AC/DC control circuit | | | | | | | |
| **BF4000A...** | 70A | 40A | 18.5 kW | AC | 3-pole contactor | – | **3 045.00** |
| **BF5000A...** | 90A | 50A | 22 kW | AC | 3-pole contactor | – | **3 192.00** |
| **BF6500A...** | 100A | 65A | 30 kW | AC | 3-pole contactor | – | **4 179.00** |
| **BF8000A...** | 115A | 80A | 45 kW | AC | 3-pole contactor | – | **4 809.00** |
| **BF9400A...** | 115A | 95A | 55 kW | AC | 3-pole contactor | – | **5 817.00** |
| **BF9500A...** | 140A | 95A | 55 kW | AC | 3-pole contactor | – | **6 090.00** |
| **BF11500A...** | 160A | 115A | 55 kW | AC | 3-pole contactor | – | **7 066.50** |
| **BF15000A...** | 165A | 150A | 75 kW | AC | 3-pole contactor | – | **7 969.50** |
| **BF16000E...** | 250A | 160A | 75 kW | AC/DC | 3-pole contactor | – | **10 195.50** |
| **BF19500E...** | 275A | 195A | 90 kW | AC/DC | 3-pole contactor | – | **11 235.00** |
| **BF23000E...** | 350A | 230A | 110 kW | AC/DC | 3-pole contactor | – | **14 280.00** |
| **BF26500E...** | 450A | 265A | 132 kW | AC/DC | 3-pole contactor | – | **18 900.00** |
| **BF33000E...** | 500A | 330A | 160 kW | AC/DC | 3-pole contactor | – | **22 260.00** |
| **BF40000E...** | 600A | 400A | 200 kW | AC/DC | 3-pole contactor | – | **28 665.00** |
| **B50000...** | 700A | 520A | 290 kW | AC/DC | 3-pole contactor | – | **43 995.00** |
| **B63000...** | 800A | 630A | 335 kW | AC/DC | 3-pole contactor | – | **54 180.00** |
| **B125024...** | 1250A | – | (AC1) 830 kW | AC/DC | 3-pole contactor | – | **160 650.00** |
| **B160024...** | 1600A | – | (AC1) 950 kW | AC/DC | 3-pole contactor | – | **168 000.00** |

**Four-pole contactors** / AC control circuit

| type | rated current (AC1) | rated current (AC3) | kW (AC1) 230V | kW (AC1) 400V | control | description | | price |
|---|---|---|---|---|---|---|---|---|
| **BF09T4A...** | 25A | 9A | 9.5 | 16 | AC | 4-pole contactor | – | **766.50** |
| **BF12T4A...** | 28A | 12A | 10 | 18 | AC | 4-pole contactor | – | **892.50** |
| **BF18T4A...** | 32A | 18A | 12 | 21 | AC | 4-pole contactor | – | **1 071.00** |
| **BF26T4A...** | 45A | 26A | 17 | 30 | AC | 4-pole contactor | – | **1 533.00** |
| **BF38T4A...** | 56A | 38A | 21 | 36 | AC | 4-pole contactor | – | **3 171.00** |
| Attachable **4th pole** - for above 3-pole contactors ***BF26...150*** | | | | | | | | |
| **BFX42** | 56A | – | attachable 4th pole for 3-pole contactors | | | | BF26...38A | **1 459.50** |
| **BFX43** | 115A | – | attachable 4th pole for 3-pole contactors | | | | BF40...94A/E | **2 541.00** |
| **BFX44** | 165A | – | attachable 4th pole for 3-pole contactors | | | | BF95...150A/E | **3 076.50** |
| **Four-pole contactors** (Ui 1000V) / AC/DC control circuit | | | | | | | | |
| **BF160T4E...** | 250A | 160A | 95 | 165 | AC/DC | 4-pole contactor | – | **12 883.50** |
| **BF195T4E...** | 275A | 175A | 104 | 181 | AC/DC | 4-pole contactor | – | **14 280.00** |
| **BF230T4E...** | 350A | 230A | 132 | 230 | AC/DC | 4-pole contactor | – | **18 207.00** |
| **BF265T4E...** | 450A | 265A | 170 | 296 | AC/DC | 4-pole contactor | – | **26 292.00** |
| **BF330T4E...** | 500A | 330A | 189 | 329 | AC/DC | 4-pole contactor | – | **29 505.00** |
| **BF400T4E...** | 600A | 400A | 227 | 395 | AC/DC | 4-pole contactor | – | **37 401.00** |
| **B500400...** | 700A | 520A | 252 | 438 | AC/DC | 4-pole contactor | – | **68 670.00** |
| **B630400...** | 800A | 630A | 288 | 500 | AC/DC | 4-pole contactor | – | **115 500.00** |

***"A"*** *standard coil voltages:* ***AC*** *- 024/048/110/230/400 (others available on request)*

***"E"*** *standard voltage coils:* ***BF160...400E*** *AC/DC -* ***024*** *(24-60V)/****110*** *(60-130V)/****230*** *(100-250V)/****400*** *(250-500V)*
***B500...630*** *AC/DC - 110/220/400* ***B125024...160024*** *AC/DC - 110/220*



BF0910D



BF1810L...



BF9400E



BF23000E...



BF15000E + BFX44

| type | rated current (AC1) | (AC3) | kW rating (AC3) 400V | control | description | auxiliary contacts | price |
|---|---|---|---|---|---|---|---|
| **Three-pole contactors** (Ui 690V) - DC control circuit | | | | | | | |
| **Permanent magnet types** (Ui 690V) - DC control circuit *(low consumption coil 5.4 watts)* | | | | | | | |
| **BF0910D...** | 25A | 9A | 4.2 kW | DC | 3-pole contactor | 1NO | **1 029.00** |
| **BF1210D...** | 28A | 12A | 5.7 kW | DC | 3-pole contactor | 1NO | **1 186.50** |
| **BF1810D...** | 32A | 18A | 7.5 kW | DC | 3-pole contactor | 1NO | **1 554.00** |
| **BF2510D...** | 32A | 25A | 12.5 kW | DC | 3-pole contactor | 1NO | **2 184.00** |
| **BF2600D...** | 45A | 26A | 13.0 kW | DC | 3-pole contactor | – | **3 234.00** |
| **BF3200D...** | 56A | 32A | 16.0 kW | DC | 3-pole contactor | – | **3 339.00** |
| **BF3800D...** | 56A | 38A | 18.5 kW | DC | 3-pole contactor | – | **4 063.50** |
| **Extra-low consumption coil 2.4 watt** *(ideal for direct PLC interfacing)* | | | | | | | |
| **BF0910L...** | 25A | 9A | 4.2 kW | DC | 3-pole contactor | 1NO | **1 291.50** |
| **BF1210L...** | 28A | 12A | 5.7 kW | DC | 3-pole contactor | 1NO | **1 428.00** |
| **BF1810L...** | 32A | 18A | 7.5 kW | DC | 3-pole contactor | 1NO | **1 795.50** |
| **BF2510L...** | 32A | 25A | 12.5 kW | DC | 3-pole contactor | 1NO | **2 509.50** |
| **BF3200L...** | 56A | 32A | 16.0 kW | DC | 3-pole contactor | – | **3 675.00** |
| **BF3800L...** | 56A | 38A | 18.5 kW | DC | 3-pole contactor | – | **4 410.00** |

**AC/DC electronically controlled coil**

The contactor coil is controlled electronically it can therefore be used either as AC or DC supply. These contactors have an electronically controlled AC/DC coil for greatly reduced consumption and a wide nominal voltage range *(e.g. just one coil for 100…250V AC/DC)*. Coils have 4 power terminals permitting cables to be terminated to the coil from top or bottom of the contactor.

- Wide operating range
- No chattering in the event of irregular voltage
- Low consumption during in-rush and in service
- Built-in surge suppression

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **BF4000E...** | 70A | 40A | 18.5 kW | AC/DC | 3-pole contactor | – | **3 790.50** |
| **BF5000E...** | 90A | 50A | 22 kW | AC/DC | 3-pole contactor | – | **4 021.50** |
| **BF6500E...** | 100A | 65A | 30 kW | AC/DC | 3-pole contactor | – | **5 134.50** |
| **BF8000E...** | 115A | 80A | 45 kW | AC/DC | 3-pole contactor | – | **5 953.50** |
| **BF9400E...** | 115A | 95A | 55 kW | AC/DC | 3-pole contactor | – | **6 783.00** |
| **BF9500E...** | 140A | 95A | 55 kW | AC/DC | 3-pole contactor | – | **7 528.50** |
| **BF11500E...** | 160A | 115A | 55 kW | AC/DC | 3-pole contactor | – | **8 610.00** |
| **BF15000E...** | 165A | 150A | 75 kW | AC/DC | 3-pole contactor | – | **9 492.00** |
| **BF16000E...** | 250A | 160A | 75 kW | AC/DC | 3-pole contactor | – | **10 195.50** |
| **BF19500E...** | 275A | 195A | 90 kW | AC/DC | 3-pole contactor | – | **11 235.00** |
| **BF23000E...** | 350A | 230A | 110 kW | AC/DC | 3-pole contactor | – | **14 280.00** |
| **BF26500E...** | 450A | 265A | 132 kW | AC/DC | 3-pole contactor | – | **18 900.00** |
| **BF33000E...** | 500A | 330A | 160 kW | AC/DC | 3-pole contactor | – | **22 260.00** |
| **BF40000E...** | 600A | 400A | 200 kW | AC/DC | 3-pole contactor | – | **28 665.00** |

*Lager sizes available - see page **A-2** AC/DC contactors*

Attachable **4th pole** - for above 3-pole contactors ***BF26...150***

| | | | |
|---|---|---|---|
| **BFXD42** | 56A | attachable 4th pole for 3-pole contactors | BF26...38D/L | **1 459.50** |
| **BFX43** | 115A | attachable 4th pole for 3-pole contactors | BF40...94A/E | **2 541.00** |
| **BFX44** | 165A | attachable 4th pole for 3-pole contactors | BF95…150A/E | **3 076.50** |

**Four-pole contactors** (Ui 690V) - DC control circuit

| type | rated current (AC1) | (AC3) | kW (AC1) 230V | 400V | control | description | | price |
|---|---|---|---|---|---|---|---|---|
| **Permanent magnet types** (Ui 690V) - DC control circuit | | | | | | | | |
| **BF09T4D...** | 25A | 9A | 9.5 | 16 | DC | 4-pole contactor | – | **2 667.00** |
| **BF18T4D...** | 32A | 18A | 12 | 21 | DC | 4-pole contactor | – | **3 622.50** |
| **Four-pole contactors** (Ui 1000V) / AC/DC control circuit | | | | | | | | |
| **BF265T4E...** | 450A | 265A | 170 | 296 | AC/DC | 4-pole contactor | – | **26 292.00** |
| **BF330T4E...** | 500A | 330A | 189 | 329 | AC/DC | 4-pole contactor | – | **29 505.00** |
| **BF400T4E...** | 600A | 400A | 227 | 395 | AC/DC | 4-pole contactor | – | **37 401.00** |

*Lager sizes available - see page **A-2** AC/DC contactors*

***"D"** standard coil voltages: **DC** - 012/024/048/060/110/220*

***"L"** standard coil voltages: **DC** - 024/048*

***"E"** standard voltage coils: **BF40...150E** AC/DC - **024** (24-60V)/**110** (60-130V)/**230** (100-250V)*
***BF160...400E** AC/DC - **024** (24-60V)/**110** (60-130V)/**230** (100-250V)/**400** (250-500V)*



Above ZAR prices do not include VAT. E&OE

# Special configuration contactors AC & DC control


BF00...

| type | rated current (AC1) | (AC3) | kW rating 230V | 400V | control | description | main contacts | price |
|---|---|---|---|---|---|---|---|---|
| **Special configuration contactors / AC control circuit** - 024/048/110/230/400V | | | | | | | | |
| **BF09T2A...** | 25A | 9A | 9.5 | 16 | AC | 4-pole contactor | 2NO+2NC | **1 827.00** |
| **BF18T2A...** | 32A | 18A | 12 | 21 | AC | 4-pole contactor | 2NO+2NC | **2 236.50** |
| **BF26T2A...** | 45A | 26A | 17 | 30 | AC | 4-pole contactor | 2NO+2NC | **3 790.50** |
| **BF38T2A...** | 56A | 38A | 21 | 36 | AC | 4-pole contactor | 2NO+2NC | **7 003.50** |
| **BF18T0A...** | 32A | 18A | 12 | 21 | AC | 4-pole contactor | 4NC | **2 236.50** |
| **Special configuration contactors / DC control circuit** | | | | | | | | |
| **BF18T2D...** | 32A | 18A | 12 | 21 | DC | 4-pole contactor | 2NO+2NC | **3 717.00** |
| **BF26T2D...** | 45A | 26A | 17 | 30 | DC | 4-pole contactor | 2NO+2NC | **5 323.50** |
| **BF38T2D...** | 56A | 38A | 21 | 36 | DC | 4-pole contactor | 2NO+2NC | **9 030.00** |
| **BF80T2E...** | 115A | 80A | 43 | 76 | AC/DC | 4-pole contactor | 2NO+2NC | **17 955.00** |
| **BF18T0D...** | 32A | 18A | 12 | 21 | DC | 4-pole contactor | 4NC | **3 717.00** |
| **BF26T0D...** | 45A | 26A | 17 | 30 | DC | 4-pole contactor | 4NC | **4 882.50** |
| **Control relays / AC control circuit** - 024/048/110/230/400V | | | | | | | | |
| **BF0040A...** | 10A | – | – | – | AC | control relay | 4NO | **784.35** |
| **BF0031A...** | 10A | – | – | – | AC | control relay | 3NO+1NC | **784.35** |
| **BF0022A...** | 10A | – | – | – | AC | control relay | 2NO+2NC | **784.35** |
| **BF0004A...** | 10A | – | – | – | AC | control relay | 4NC | **784.35** |
| **Control relays / DC control circuit** *(extra-low consumption coil 2.4 watt)* | | | | | | | | |
| **BF0040L...** | 10A | – | – | – | DC | control relay | 4NO | **2 268.00** |
| **BF0031L...** | 10A | – | – | – | DC | control relay | 3NO+1NC | **2 268.00** |
| **BF0022L...** | 10A | – | – | – | DC | control relay | 2NO+2NC | **2 268.00** |
| **BF0004L...** | 10A | – | – | – | DC | control relay | 4NC | **2 268.00** |



BFK1810A...

## Capacitor switching contactors

AC control circuit - 230/400V

Contactors for PFC with AC control circuits equipped with early-make limiting resistors limiting in-rush currents initially before making contact. Resistors are disconnected from the circuit when contactor closing operation is complete.

| type | kvar 400V | kvar 440V | rated current | control | description | auxiliary contacts | price |
|---|---|---|---|---|---|---|---|
| **BFK1210A...** | 12.5 | 14 | 18A | AC | capacitor switching contactor | 1NO | **1 375.50** |
| **BFK1810A...** | 15 | 17 | 23A | AC | capacitor switching contactor | 1NO | **2 709.00** |
| **BFK2600A...** | 20 | 22 | 30A | AC | capacitor switching contactor | – | **3 528.00** |
| **BFK3200A...** | 25 | 27.5 | 36A | AC | capacitor switching contactor | – | **2 940.00** |
| **BFK3800A...** | 30 | 33 | 43A | AC | capacitor switching contactor | – | **3 213.00** |
| **BFK5000A...** | 40 | 41 | 58A | AC | capacitor switching contactor | – | **4 620.00** |
| **BFK8000A...** | 50 | 56 | 75A | AC | capacitor switching contactor | – | **5 512.50** |
| **BFK11500A...** | 75 | 85 | 115A | AC | capacitor switching contactor | – | **10 269.00** |
| **BFK15000A...** | 100 | 115 | 144A | AC | capacitor switching contactor | – | **12 180.00** |


BFK11500A...

| **Kit to assemble BFK contactors from standard BF contactors** | | for contactor | |
|---|---|---|---|
| **G460** | kit to assemble standard contactors for capacitor switching | BF09…38A | **886.20** |
| **BFX10K3** | kit to assemble standard contactors for capacitor switching | BF50…94A | **1 596.00** |
| **BFX10K4** | kit to assemble standard contactors for capacitor switching | BF95…150A | **1 984.50** |

## Thyristor switching modules

Suitable for dynamic *(fast)* PFC



DCTLA...

**DCTL** series thyristor modules are ideal for dynamic power factor correction. Zero cross switching guarantees very short switching times, reducing current peaks generated by capacitor insertion without voltage peaks on disconnection. Integrated current transformers permit complete monitoring and protection of capacitor banks.

- Prevents high in-rush currents at capacitor switching
- Operational voltage: 400…480 VAC *(690V available on request)*

Advanced communication functions:
- NFC connectivity for programming via smart devices
- Optical port for frontal connection to a PC via USB or WiFi via **CX01** or **CX02**
- Optional RS-485 card ***(EXC1042)*** for connection to **DCRG8F** controller

| type | kvar 400V | kvar 480V | rated current | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **DCTLA4800180** | 15 | 18 | 22A | thyristor switching module | 218 | 75 | 172 | **19 740.00** |
| **DCTLA4800360** | 30 | 36 | 43A | thyristor switching module | 218 | 75 | 172 | **20 580.00** |
| **DCTLA4800600** | 50 | 60 | 72A | thyristor switching module | 226 | 95 | 182 | **28 560.00** |
| **DCTLA4801200** | 100 | 120 | 144A | thyristor switching module | 301 | 212 | 216 | **42 840.00** |



Snap-on installation



BFX1011



BFX1040



G48421



BFX12...



G481...



BFX10C01



G280



G485...



BFX42

## General accessories for contactors

- Snap-on installation: Quick and easy installation to fit and remove an auxiliary contact without a tool
- Rigid connection kits: Available in reversing, changeover or line-star-delta connecting kits
- Mechanical interlock: Side, top, horizontal and vertical options are available, see contactor accessories
- Attachable 4th pole: Side mount attachable 4th pole can be snapped on a 3-pole contactor
- Pneumatic delay blocks: On-delay, delay-on de-energisation
- Spare voltage coils: Spare coils compatible with all contactors, see contactor accessories

| type | mounting | description | terminal | contacts | price |
|---|---|---|---|---|---|
| **Clip-on auxiliary contact blocks** | | | | | |
| **For contactors BF09...150** - 10A Ith / Ui 690V | | | | | |
| **BFX1020** | top *(centre)* | auxiliary contact block | screw | 2NO | **306.60** |
| **BFX1011** | top *(centre)* | auxiliary contact block | screw | 1NO + 1NC | **246.75** |
| **BFX1002** | top *(centre)* | auxiliary contact block | screw | 2NC | **306.60** |
| **BFX1040** | top *(centre)* | auxiliary contact block | screw | 4NO | **492.45** |
| **BFX1031** | top *(centre)* | auxiliary contact block | screw | 3NO + 1NC | **611.10** |
| **BFX1022** | top *(centre)* | auxiliary contact block | screw | 2NO + 2NC | **577.50** |
| **BFX1004** | top *(centre)* | auxiliary contact block | screw | 4NC | **611.10** |
| **BFX1220** | side | auxiliary contact block | screw | 2NO | **479.85** |
| **BFX1211** | side | auxiliary contact block | screw | 1NO + 1NC | **386.40** |
| **BFX1202** | side | auxiliary contact block | screw | 2NC | **479.85** |
| **G48430** | top *(centre)* | auxiliary contact block | screw | 3NO | **562.80** |
| **G48421** | top *(centre)* | auxiliary contact block | screw | 2NO + 1NC | **452.55** |
| **G48412** | top *(centre)* | auxiliary contact block | screw | 1NO + 2NC | **562.80** |
| **G48403** | top *(centre)* | auxiliary contact block | screw | 3NC | **562.80** |
| **G41810** | top *(side)* | auxiliary contact block | screw | 1NO | **126.00** |
| **G41810A** | top *(side)* | auxiliary (early make) | screw | 1NO | **126.00** |
| **G41801** | top *(side)* | auxiliary contact block | screw | 1NC | **126.00** |
| **G41801D** | top *(side)* | auxiliary (late break) | screw | 1NC | **266.70** |
| **G48120** | top *(side)* | auxiliary contact block | push-on | 2NO | **333.90** |
| **G48111** | top *(side)* | auxiliary contact block | push-on | 1NO + 1NC | **333.90** |
| **G48102** | top *(side)* | auxiliary contact block | push-on | 2NO | **333.90** |
| **G218** | top *(side)* | auxiliary contact block | push-on | 1NO (or) 1NC | **233.10** |
| **For contactors BF160...400** - 10A Ith / Ui 690V | | | | | |
| **BFX10C10** | top | auxiliary contact block | screw | 1NO | **288.75** |
| **BFX10C01** | top | auxiliary contact block | screw | 1NC | **288.75** |
| **BFX12C02** | side | auxiliary contact block | screw | 2NC | **621.60** |
| **BFX12C11** | side | auxiliary contact block | screw | 1NO + 1NC | **621.60** |
| **BFX12C20** | side | auxiliary contact block | screw | 2NO | **621.60** |
| **For contactors B500...630** - 16A Ith / Ui 690V | | | | | |
| **G354** | side | auxiliary contact | push-on | 1NO + 1NC | **903.00** |
| **G350** | side | auxiliary contact | push-on | 2NO + 1NC | **1 113.00** |
| **G370** | adaptor | adaptor for push-on to screw terminal for | | G350/354 | **94.50** |
| **Accessories for above auxiliary contact blocks** | | | | | |
| **G280** | side | side mount adaptor for auxiliary | | G218 | **93.45** |
| **G419** | side | side mount adaptor for auxiliary | | G418 | **106.05** |
| **G483** | side | side mount adaptor for auxiliary | | G481 | **117.60** |
| **G358** | adaptor | to fit **BFX10/G484...7** auxiliaries to | | B500...B630 | **607.95** |
| **Pneumatic delay blocks BF09...150** | | | | | |
| **G4856** | on-delay pneumatic timer contact block | | 6sec | 1NO + 1NC | **2 194.50** |
| **G48560** | on-delay pneumatic timer contact block | | 60sec | 1NO + 1NC | **2 373.00** |
| **G485120** | on-delay pneumatic timer contact block | | 120sec | 1NO + 1NC | **2 971.50** |
| **G4866** | delay-on de-energisation timer contact block | | 6sec | 1NO + 1NC | **2 152.50** |
| **G48660** | delay-on de-energisation timer contact block | | 60sec | 1NO + 1NC | **2 320.50** |
| **G486120** | delay-on de-energisation timer contact block | | 120sec | 1NO + 1NC | **2 908.50** |
| **G487** | delay-on de-energisation timer contact block | | 70msec | 1NO + 1NC | **1 375.50** |
| **Attachable 4th pole for contactors BF26...150A/E** *(fully rated)* | | | | | |
| • Add following attachable 4th pole to above 3-pole contactors to make up a 4-pole contactor | | | | | |
| **BFX42** | 56A | attachable 4th pole for contactors | | BF26...38A | **1 459.50** |
| **BFXD42** | 56A | attachable 4th pole for contactors | | BF26...38D/L | **1 459.50** |
| **BFX43** | 115A | attachable 4th pole for contactors | | BF40...94A/E | **2 541.00** |
| **BFX44** | 165A | attachable 4th pole for contactors | | BF95…150A/E | **3 076.50** |



Above ZAR prices do not include VAT. E&OE



BFX5001



BFX5500



BFX5002



G454



BFX3401

Reversing contactor rigid connecting kit



BFX3461

Changeover rigid connecting kit



BFX3431

Lline-star-delta rigid connecting kit

## General accessories for contactors

| type | mounting | description | for contactor | price |
|---|---|---|---|---|
| **Mechanical interlocks between two contactors** | | | | |
| **BFX5000** | side | side mount mechanical interlock | BF09...38 | **505.05** |
| **BFX5001** | side | mechanical interlock with 2NC contacts | BF09...38 | **506.10** |
| **BFX5002** | top *(side)* | economy *(low profile)* mech. interlock | BF09...38 | **204.75** |
| **BFX5003** | top *(side)* | top mount mechanical interlock | BF09...38 | **631.05** |
| **BFX5300** | side | side mount mechanical interlock | BF40...94A/E | **520.80** |
| **BFX5301** | side | mechanical interlock with 2NC contacts | BF40...94A/E | **778.05** |
| **BFX5303** | top *(side)* | top mount mechanical interlock | BF40...94A/E | **631.05** |
| **BFX5400** | side | side mount mechanical interlock | BF95...150A/E | **519.75** |
| **BFX5401** | side | mechanical interlock with 2NC contacts | BF95...150A/E | **778.05** |
| **BFX5403** | top *(side)* | top mount mechanical interlock | BF95...150A/E | **631.05** |
| **BFX5500** | horizontal | side mount mechanical interlock | BF160…400 | **702.45** |
| **BFX5503** | vertical | vertical mech. interlock *(interaxis 305 - 345 mm)* | BF160…400 | **1 722.00** |
| **G355** | horizontal | side mount mechanical interlock | B500...630 | **572.25** |
| **G3564** | vertical | vertical mech. interlock *(interaxis 345 - 385 mm)* | B500...630 | **1 858.50** |
| **G3565** | vertical | vertical mech. interlock *(interaxis 390 - 425 mm)* | B500...630 | **1 900.50** |
| **Mechanical latch blocks** *(electric or hand reset)* | | | | |
| **G222...** | | mechanical latch mechanism *(electrical/hand reset)* | BF09...38 | **1 858.50** |
| **G272...** | | mechanical latch mechanism *(electrical/hand reset)* | BF40…94 | **1 858.50** |
| **BFX641...** | | mechanical latch mechanism *(electrical/hand reset)* | BF95...150 | **1 858.50** |
| **G454** | | mechanical latch mechanism *(hand set/reset)* | BF09...38 | **851.55** |
| **G455** | | mechanical latch mechanism *(hand set/reset)* | BF40…94 | **851.55** |
| **BFX642** | | mechanical latch mechanism *(hand set/reset)* | BF95...150 | **851.55** |
| *Standard coil voltages (add to part number):* ***AC*** *- 024/048/110/220/380* ***DC*** *- 012/024/048/110/220* | | | | |
| **Connection accessories for large frame contactors BF160…400** | | | | |
| **BFX805** | phase barrier | for large frame contactors *(4-piece set)* | BF160...230 | **660.45** |
| **BFX806** | phase barrier | for large frame contactors *(4-piece set)* | BF265…400 | **726.60** |
| **Captive nut support - to support the connection nut** *(for ease of installation)* | | | | |
| **BFX8508** | captive nut support | for large frame contactors *(8-piece set)* | BF160...230 | **1 176.00** |
| **BFX8608** | captive nut support | for large frame contactors *(8-piece set)* | BF265…400 | **1 564.50** |
| **BFX3592** | 2-pole paralleling link | for large frame contactors | BF160...230 | **730.80** |
| **BFX3692** | 2-pole paralleling link | for large frame contactors | BF265…400 | **877.80** |
| **BFX3593** | 3-pole paralleling link | for large frame contactors | BF160...230 | **759.15** |
| **BFX3693** | 3-pole paralleling link | for large frame contactors | BF265…400 | **920.85** |

## Accessories for contactors BF09...400 *(with interlock)*

| type | description | mech. interlock | for contactor | price |
|---|---|---|---|---|
| **BFX3101** | reversing contactor rigid connecting kit | BFX5002/5003 | BF09...25 | **416.85** |
| **BFX3102** | reversing contactor rigid connecting kit | BFX5000/5001 | BF09...25 | **416.85** |
| **BFX3201** | reversing contactor rigid connecting kit | BFX50 | BF26...38 | **456.75** |
| **BFX3301** | reversing contactor rigid connecting kit | BFX5303 | BF40…94 | **537.60** |
| **BFX3401** | reversing contactor rigid connecting kit | BFX5403 | BF95…150 | **883.05** |
| **BFX3501** | reversing contactor rigid connecting kit | BFX5500 | BF160…230 | **4 494.00** |
| **BFX3601** | reversing contactor rigid connecting kit | BFX5500 | BF265…400 | **6 930.00** |
| **BFX3361** | changeover rigid connecting kit *(3-pole)* | BFX5300/5301 | BF40…94 | **309.75** |
| **BFX3461** | changeover rigid connecting kit *(3-pole)* | BFX5400/5401 | BF95…150 | **486.15** |
| **BFX3561** | changeover rigid connecting kit *(3-pole)* | BFX5500 | BF160…230 | **2 509.50** |
| **BFX3661** | changeover rigid connecting kit *(3-pole)* | BFX5500 | BF265…400 | **4 158.00** |
| **BFX3371** | changeover rigid connecting kit *(4-pole)* | BFX5300/5301 | BF40…94 | **441.00** |
| **BFX3471** | changeover rigid connecting kit *(4-pole)* | BFX5400/5401 | BF95…150 | **649.95** |
| **BFX3571** | changeover rigid connecting kit *(4-pole)* | BFX5500 | BF160…230 | **4 063.50** |
| **BFX3671** | changeover rigid connecting kit *(4-pole)* | BFX5500 | BF265...400 | **5 617.50** |
| **BFX3131** | line-star-delta rigid connecting kit | – | BF09...25 | **475.65** |
| **BFX3231** | line-star-delta rigid connecting kit | – | BF26...38 | **627.90** |
| **BFX3232** | line-star-delta rigid connecting kit | (L / Δ) BF26...38 | (Y) BF09...25 | **627.90** |
| **BFX3331** | line-star-delta rigid connecting kit | – | BF40…94 | **699.30** |
| **BFX3432** | line-star-delta rigid connecting kit | (L / Δ) BF95...150 | (Y) BF40...94 | **1 009.05** |
| **BFX3431** | line-star-delta rigid connecting kit | – | BF95…150 | **1 009.05** |
| **BFX3531** | line-star-delta rigid connecting kit | – | BF160…230 | **4 158.00** |
| **BFX3631** | line-star-delta rigid connecting kit | – | BF265…400 | **7 969.50** |


BFX80


BFX8901


BA135


BA435


BFX77...

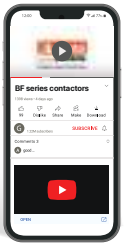

BFX91...


G...

## General accessories for contactors

| type | description | | | for contactor | price |
|---|---|---|---|---|---|
| **Accessories for contactors BF09...400 / B500...630** | | | | | |
| **BFX80** | sealing cover | | for contactors | BF09...38 | **76.65** |
| **BFX8901** | universal screw mounting base | | for contactors | BF09...38 | **73.50** |
| **BFX8902** | screw fixing brackets *(2 pcs)* | | for contactors | BF09...38 | **57.75** |
| **BFX835** | 3-pole | terminal cover | for contactors | BF160...230 | **646.80** |
| **BFX836** | 3-pole | terminal cover | for contactors | BF265…400 | **711.90** |
| **BFX845** | 4-pole | terminal cover | for contactors | BF160...230 | **863.10** |
| **BFX846** | 4-pole | terminal cover | for contactors | BF265…400 | **948.15** |
| **BA135** | 2-pole | paralleling links | for contactors | BF09...25 | **69.30** |
| **BA235** | 2-pole | paralleling links | for contactors | BF26...38 | **86.10** |
| **BFX3592** | 2-pole | paralleling links | for contactors | BF160...230 | **730.80** |
| **BFX3692** | 2-pole | paralleling links | for contactors | BF265…400 | **877.80** |
| **BA435** | 3-pole | paralleling links | for contactors | BF95...150 | **470.40** |
| **BFX3593** | 3-pole | paralleling links | for contactors | BF160…230 | **759.15** |
| **BFX3693** | 3-pole | paralleling links | for contactors | BF265…400 | **920.85** |
| **BA1846** | 3-pole | star connecting bar | for contactors | B500...630 | **844.20** |
| **BFX3583** | 3-pole | spreader links | for contactors | BF160…230 | **2 278.50** |
| **BFX3683** | 3-pole | spreader links | for contactors | BF265…400 | **2 688.00** |
| **BFX3584** | 4-pole | spreader links | for contactors | BF160…230 | **2 866.50** |
| **BFX3684** | 4-pole | spreader links | for contactors | BF265…400 | **3 496.50** |
| **G371** | adaptor for push-on to screw terminal *(coil)* | | | B500...630 | **315.00** |
| **G231** | 1-pole enlarged terminal *(1 x 6 mm²)* | | for contactors | BF09...25 | **171.15** |
| **G232** | 1-pole enlarged terminal *(1 x 16 mm²)* | | for contactors | BF26...38 | **200.55** |
| **BFX30** | blank label for self-labelling *(orange)* | | for contactors | BF09…150 | **32.03** |
| **Surge suppressors for contactors BF09...150** *(quick connect)* | | | | | |
| **BFX77048** | ≤ 48 VAC/DC | varistor | for contactors | BF09...150A | **328.65** |
| **BFX77125** | 48-125 VAC/DC | varistor | for contactors | BF09...150A | **328.65** |
| **BFX77240** | 125-240 VAC/DC | varistor | for contactors | BF09...150A | **328.65** |
| **BFX79415** | 240-415 VAC | resistor-capacitor | for contactors | BF09...150A | **404.25** |
| **Spare coils for all contactors** | | | | | |
| **BFX91A...** | AC | spare coil only | for contactors | BF09...25A | **510.30** |
| **BFX92A...** | AC | spare coil only | for contactors | BF26...38A | **620.55** |
| **BFX93A...** | AC | spare coil only | for contactors | BF40...94A | **1 113.00** |
| **BFX94A...** | AC | spare coil only | for contactors | BF95...150A | **1 827.00** |
| *Standard coil voltages:* ***AC*** *- 024/048/110/230/400* | | | | | |
| **BFX93E...** | AC/DC | spare coil only | for contactors | BF40...94E | **2 940.00** |
| **BFX94E...** | AC/DC | spare coil only | for contactors | BF95...150E | **4 462.50** |
| **BFX95E...** | AC/DC | spare coil only | for contactors | BF160...230E | **5 512.50** |
| **BFX96E...** | AC/DC | spare coil only | for contactors | BF265…400E | **9 208.50** |
| **BA1796...** | AC/DC | spare coil only | for contactors | B500...B630 | **17 955.00** |
| *Standard coil voltages: AC/DC -* ***024*** *(24-60V),* ***110*** *(60-130V),* ***230*** *(100-250V),* ***400*** *(250-500V)* | | | | | |
| **Spare contact sets** *(fixed and moving)* **per three-pole set** | | | | | |
| **BFX99040T** | 3-pole | main contact set *(fixed and moving)* | | BF40 | **2 488.50** |
| **BFX99050T** | 3-pole | main contact set *(fixed and moving)* | | BF50 | **2 940.00** |
| **BFX99065T** | 3-pole | main contact set *(fixed and moving)* | | BF65 | **3 759.00** |
| **BFX99080T** | 3-pole | main contact set *(fixed and moving)* | | BF80 | **4 609.50** |
| **BFX99095T** | 3-pole | main contact set *(fixed and moving)* | | BF95 | **5 869.50** |
| **BFX99115T** | 3-pole | main contact set *(fixed and moving)* | | BF115 | **6 709.50** |
| **BFX99150T** | 3-pole | main contact set *(fixed and moving)* | | BF150 | **7 413.00** |
| **BFX99195T** | 3-pole | main contact set *(fixed and moving)* | | BF195 | **10 395.00** |
| **BFX99230T** | 3-pole | main contact set *(fixed and moving)* | | BF230 | **13 335.00** |
| **G525** | 3-pole | main contact set *(fixed and moving)* | | B500 | **36 540.00** |
| **G526** | 3-pole | main contact set *(fixed and moving)* | | B630 | **79 380.00** |

**Scan the QR Code**
for easy access to tutorials on the Lovato Contactor range






Above ZAR prices do not include VAT. E&OE


RF38...


RF82...


RF200...


RFE45...


RFX3804


RFX3802

| type | motor rating AC3 (400V) | description | adjustment range | for contactor | price |
|---|---|---|---|---|---|
| **RF38 series** *(phase failure sensitive)* | | | | | |
| Motor protection relay, phase failure/single-phase sensitive. Three-pole (three-phase), manual or automatic resetting. | | | | | |
| • Selectable manual or automatic reset | | | | | |
| • Direct mounting on **BF09...38** contactors | | | | | |
| **RF380016** | – | thermal overload | 0.10 - 0.16A | BF09...38 | **913.50** |
| **RF380025** | 0.06 kW | thermal overload | 0.16 - 0.25A | BF09...38 | **913.50** |
| **RF380040** | 0.09 kW | thermal overload | 0.25 - 0.40A | BF09...38 | **913.50** |
| **RF380063** | 0.12 - 0.18 kW | thermal overload | 0.40 - 0.63A | BF09...38 | **913.50** |
| **RF380100** | 0.25 kW | thermal overload | 0.63 - 1.00A | BF09...38 | **913.50** |
| **RF380160** | 0.37 - 0.55 kW | thermal overload | 1.00 - 1.60A | BF09...38 | **913.50** |
| **RF380250** | 0.75 kW | thermal overload | 1.60 - 2.50A | BF09...38 | **913.50** |
| **RF380400** | 1.1 - 1.5 kW | thermal overload | 2.50 - 4.00A | BF09...38 | **913.50** |
| **RF380650** | 2.2 kW | thermal overload | 4.00 - 6.50A | BF09...38 | **913.50** |
| **RF381000** | 3.0 - 4.0 kW | thermal overload | 6.30 - 10.0A | BF09...38 | **913.50** |
| **RF381400** | 5.5 kW | thermal overload | 9.00 - 14.0A | BF09...38 | **913.50** |
| **RF381800** | 7.5 kW | thermal overload | 13.0 - 18.0A | BF09...38 | **1 039.50** |
| **RF382300** | 11 kW | thermal overload | 17.0 - 23.0A | BF09...38 | **1 039.50** |
| **RF382500** | 11 kW | thermal overload | 20.0 - 25.0A | BF09...38 | **1 039.50** |
| **RF383200** | 15 kW | thermal overload | 24.0 - 32.0A | BF09...38 | **1 281.00** |
| **RF383800** | 18.5 kW | thermal overload | 32.0 - 38.0A | BF09...38 | **1 585.50** |
| **RF82 series** *(phase failure sensitive)* | | | | | |
| • Manual resetting - direct mounting on **BF40...94** contactors | | | | | |
| **RF824200** | 15 - 18.5 kW | thermal overload | 28 - 42A | BF40…94 | **2 184.00** |
| **RF825000** | 22 kW | thermal overload | 35 - 50A | BF40…94 | **2 478.00** |
| **RF826500** | 22 - 30 kW | thermal overload | 46 - 65A | BF40…94 | **2 478.00** |
| **RF828200** | 37 - 45 kW | thermal overload | 60 - 82A | BF40…94 | **2 845.50** |
| **RF829500** | 45 kW | thermal overload | 70 - 95A | BF40…94 | **3 087.00** |
| **RF110 series** *(phase failure sensitive)* | | | | | |
| • Manual resetting - direct mounting on **BF95...150** contactors | | | | | |
| **RF110095** | 45 kW | thermal overload | 70 - 95A | BF95...150 | **3 150.00** |
| **RF110110** | 55 kW | thermal overload | 90 - 110A | BF95...150 | **3 528.00** |
| **RF200 series** *(phase failure sensitive)* | | req. links **RFX20035/RFX20036** to attach to contactors | | | |
| • Manual or automatic resetting - direct mounting of **BF160...400** contactors | | | | | |
| **RF200150** | 51 - 80 kW | thermal overload | 90 - 150A | BF160...400 | **6 657.00** |
| **RF200200** | 75 - 100 kW | thermal overload | 120 - 200A | BF160...400 | **6 888.00** |
| **RF420 series** *(phase failure sensitive)* | | req. links **RFX42035/*RFX42036** to attach to contactors | | | |
| **RF420250** | 92 - 132 kW | thermal overload | 150 - 250A | BF160...400 | **8 557.50** |
| **RF420300*** | 100 - 162 kW | thermal overload | 180 - 300A | BF160...400 | **8 788.50** |
| **RF420420*** | 129 - 198 kW | thermal overload | 250 - 420A | BF160...400 | **9 030.00** |
| **RFE series - Electronic overload relays** *(self-powered by main circuit)* | | | | | |
| The RFE... electronic thermal overload relays for BF series contactors are characterised by a wide current adjustment range and high reliability and accuracy of tripping. | | | | | |
| RFE electronic thermal overload relays are suitable for all types of motor starting thanks to the possibility to select several tripping classes. A single front push button is used to select the reset function, manual or automatic, and to activate or deactivate the STOP function. | | | | | |
| **RFE450200** | 0.12 - 0.75 kW | electronic overload | 0.4 - 2A | BF09...38 | **2 236.50** |
| **RFE450800** | 0.75 - 3.0 kW | electronic overload | 1.6 - 8A | BF09...38 | **2 236.50** |
| **RFE453200** | 3 - 15 kW | electronic overload | 6.4 - 32A | BF09...38 | **2 236.50** |
| **RFE454500** | 4 - 22 kW | electronic overload | 9 - 45A | BF09...38 | **2 362.50** |
| **Accessories for RF series overloads** | | | | | |
| **RFX20035** | set of links for mounting RF200 overload relays onto contactor | | | BF160...230 | **824.25** |
| **RFX20036** | set of links for mounting RF200 overload relays onto contactor | | | BF265...400 | **850.50** |
| **RFX42035** | set of links for mounting RF420 overload relays onto contactor | | | BF160...230 | **855.75** |
| **RFX42036** | set of links for mounting RF420 overload relays onto contactor | | | BF265...400 | **1 134.00** |
| **RFX3804** | separate mounting adaptor | *(surface / DIN-rail mount)* | | RF38/RFE45 | **280.35** |
| **G270** | separate mounting adaptor | *(surface / DIN-rail mount)* | | RF82/110 | **968.10** |
| **G228220** | electrical reset mechanism for overloads (220VAC) | | | RF82/110 | **1 050.00** |
| **RFX3801** | lead sealing device for overloads | | | RF38/200/420 | **99.75** |
| **G233** | lead sealing device for overloads | | | RF82/110 | **79.80** |
| **RFX3802** | protection cover for **RF38** on contactor assembly | | | BF09...25 | **76.65** |
| **RFX3803** | protection cover for **RF38** on contactor assembly | | | BF26...38 | **76.65** |



SM1P...



SM1R...



SM2R5000



SM3R...

## SM series - Motor protection circuit breakers

The SM series motor protection circuit breakers have been completely updated across all ranges of rated current, from 0.1 to 100A. The series includes three sizes: SM1, with a range-extended up to 40A *(available versions: with buttons or with rotary knob for motor protection)* SM2 from 34 to 63A and SM3 from 55 to 100A, both with rotary knobs.

*(Type 2 co-ordination with contactors – see **Annex-2**)*

**General features:**

- Temperature compensation
- Thermal and magnetic protection
- Rated insulation voltage Ui 690V
- For safety lockout hasps refer to **category K**
- High fault level *(type 2 co-ordination with contactors)*
- Differential single-phase protection *(phase failure sensitive)*
- Snap-on auxiliary contacts, shunt trip and undervolt release
- 3 sizes, from 0.1 to 100A, with pushbutton and rotary versions
- Trip-test facility/indication of trip condition overload *(or)* short circuit *(SM1R series)*

| type | motor rating 230V | motor rating 400V | thermal trip adj.range | description | short circuit capacity Icu 400V | price |
|---|---|---|---|---|---|---|
| **SM1P series** | | **Icu 100 to 10kA** | *(H) 90 x (W) 45 x (D) 75 mm (inc. buttons)* | | | |
| • Pushbutton control - padlockable in OFF position | | | | | | |
| **SM1P0016** | – | – | 0.1 - 0.16A | manual motor starter | 100 kA | **913.50** |
| **SM1P0025** | – | – | 0.16 - 0.25A | manual motor starter | 100 kA | **913.50** |
| **SM1P0040** | – | – | 0.25 - 0.4A | manual motor starter | 100 kA | **913.50** |
| **SM1P0063** | – | 0.18 kW | 0.40 - 0.63A | manual motor starter | 100 kA | **913.50** |
| **SM1P0100** | 0.12 kW | 0.25 kW | 0.63 - 1A | manual motor starter | 100 kA | **934.50** |
| **SM1P0160** | 0.25 kW | 0.37 - 0.55 kW | 1 - 1.6A | manual motor starter | 100 kA | **934.50** |
| **SM1P0250** | 0.37 kW | 0.75 kW | 1.6 - 2.5A | manual motor starter | 100 kA | **934.50** |
| **SM1P0400** | 0.55 - 0.75 kW | 1.1 - 1.5 kW | 2.5 - 4A | manual motor starter | 100 kA | **934.50** |
| **SM1P0650** | 1.1 - 1.5 kW | 2.2 kW | 4 - 6.5A | manual motor starter | 100 kA | **934.50** |
| **SM1P1000** | 1.5 - 2.2 kW | 4.0 kW | 6.3 - 10A | manual motor starter | 100 kA | **1 047.90** |
| **SM1P1400** | 3.0 kW | 5.5 kW | 9 - 14A | manual motor starter | 25 kA | **1 047.90** |
| **SM1P1800** | 4.0 kW | 7.5 kW | 13 - 18A | manual motor starter | 25 kA | **1 047.90** |
| **SM1P2500** | 5.5 kW | 11.0 kW | 20 - 25A | manual motor starter | 15 kA | **1 491.00** |
| **SM1P3200** | 7.5 kW | 15.0 kW | 24 - 32A | manual motor starter | 10 kA | **1 858.50** |
| **SM1P4000** | 11 kW | 18.5 kW | 30 - 40A | manual motor starter | 10 kA | **3 412.50** |
| **SM1R series** | | **Icu 100 to 20kA** | *(H) 90 x (W) 45 x (D) 91 mm (inc. knob)* | | | |
| • Rotary selector control - padlockable in OFF position<br>• Thermal and magnetic trip indication | | | | | | |
| **SM1R0016** | – | – | 0.1 - 0.16A | manual motor starter | 100 kA | **1 144.50** |
| **SM1R0025** | – | – | 0.16 - 0.25A | manual motor starter | 100 kA | **1 144.50** |
| **SM1R0040** | – | – | 0.25 - 0.4A | manual motor starter | 100 kA | **1 144.50** |
| **SM1R0063** | – | 0.18 kW | 0.40 - 0.63A | manual motor starter | 100 kA | **1 144.50** |
| **SM1R0100** | 0.12 kW | 0.25 kW | 0.63 - 1A | manual motor starter | 100 kA | **1 249.50** |
| **SM1R0160** | 0.25 kW | 0.37 - 0.55 kW | 1 - 1.6A | manual motor starter | 100 kA | **1 249.50** |
| **SM1R0250** | 0.37 kW | 0.75 kW | 1.6 - 2.5A | manual motor starter | 100 kA | **1 249.50** |
| **SM1R0400** | 0.55 - 0.75 kW | 1.1 - 1.5 kW | 2.5 - 4A | manual motor starter | 100 kA | **1 249.50** |
| **SM1R0650** | 1.1 - 1.5 kW | 2.2 kW | 4 - 6.5A | manual motor starter | 100 kA | **1 249.50** |
| **SM1R1000** | 1.5/2.2 kW | 4.0 kW | 6.3 - 10A | manual motor starter | 100 kA | **1 365.00** |
| **SM1R1400** | 3.0 kW | 5.5 kW | 9 - 14A | manual motor starter | 100 kA | **1 365.00** |
| **SM1R1800** | 4.0 kW | 7.5 kW | 13 - 18A | manual motor starter | 100 kA | **1 365.00** |
| **SM1R2500** | 5.5 kW | 11.0 kW | 20 - 25A | manual motor starter | 50 kA | **1 785.00** |
| **SM1R3200** | 7.5 kW | 15.0 kW | 24 - 32A | manual motor starter | 50 kA | **2 226.00** |
| **SM1R4000** | 11 kW | 18.5 kW | 30 - 40A | manual motor starter | 20 kA | **4 063.50** |
| **SM2R series** | | **Icu 50kA** | *(H) 140 x (W) 55 x (D) 145 mm (inc. knob)* | | | |
| • Rotary selector control - padlockable in OFF position<br>• Thermal and magnetic trip indication | | | | | | |
| **SM2R5000** | 15.0 kW | 22.0 kW | 34 - 50A | manual motor starter | 50 kA | **6 037.50** |
| **SM2R6300** | 18.5 kW | 30.0 kW | 45 - 63A | manual motor starter | 50 kA | **6 037.50** |
| **SM3R series** | | **Icu 50kA** | *(H) 165 x (W) 70 x (D) 170 mm (inc. knob)* | | | |
| • Rotary selector control - padlockable in OFF position<br>• Thermal and magnetic trip indication | | | | | | |
| **SM3R7500** | 22.0 kW | 37.5 kW | 55 - 75A | manual motor starter | 50 kA | **6 961.50** |
| **SM3R9000** | 25.0 kW | 45.0 kW | 70 - 90A | manual motor starter | 50 kA | **7 423.50** |
| **SM3R9900** | 30.0 kW | 55.0 kW | 80 - 100A | manual motor starter | 50 kA | **7 885.50** |



Above ZAR prices do not include VAT. E&OE


SM1X1211


SM1X1311

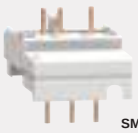

SM2X16230


SM1X1120

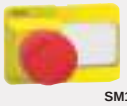

SM2X16400


SM2X18200R


SM1X18S


SM1X3241P


SM1Z1701P


SM1X1740P


SM1X1745P

## General accessories for motor protection circuit breakers

Accessories include left, right, and front auxiliary blocks, shunt trips, undervoltage releases, mounting accessories, and special enclosures, providing versatility and convenience for various applications.

| type | config. | mount position | description | for starter | price |
|---|---|---|---|---|---|
| **Auxiliary contacts** | | | | | |
| **SM1X1211** | 1NO + 1NC | left side | add-on auxiliary contact block | SM1P/R | **231.00** |
| **SM1X1220** | 2NO | left side | add-on auxiliary contact block | SM1P/R | **231.00** |
| **SM1X1311** | 1NO + 1NC | left side | trip indication auxiliary contact block | SM1P/R | **606.90** |
| **SM1X1111** | 1NO + 1NC | front | add-on auxiliary contact block | SM1P/R | **189.00** |
| **SM1X1120** | 2NO | front | add-on auxiliary contact block | SM1P/R | **205.80** |
| **SM2X1211** | 1NO + 1NC | left side | add-on auxiliary contact block | SM2/3R | **307.65** |
| **SM2X1220** | 2NO | left side | add-on auxiliary contact block | SM2/3R | **307.65** |
| **SM2X1311** | 1NO + 1NC | left side | trip indication auxiliary contact block | SM2/3R | **606.90** |
| **SM2X1111** | 1NO + 1NC | front | add-on auxiliary contact block | SM2/3R | **307.65** |
| **SM2X1120** | 2NO | front | add-on auxiliary contact block | SM2/3R | **307.65** |
| **Shunt trip release** *(permits remote tripping of the motor protection circuit breakers)* | | | | | |
| **SM1X16024** | 24 VAC | right side | add-on shunt trip release unit | SM1P/R | **1 016.40** |
| **SM1X16110** | 110 VAC | right side | add-on shunt trip release unit | SM1P/R | **1 016.40** |
| **SM1X16230** | 230 VAC | right side | add-on shunt trip release unit | SM1P/R | **835.80** |
| **SM1X16400** | 400 VAC | right side | add-on shunt trip release unit | SM1P/R | **835.80** |
| **SM2X16024** | 24 VAC | right side | add-on shunt trip release unit | SM2/3R | **854.70** |
| **SM2X16110** | 110 VAC | right side | add-on shunt trip release unit | SM2/3R | **854.70** |
| **SM2X16230** | 230 VAC | right side | add-on shunt trip release unit | SM2/3R | **854.70** |
| **SM2X16400** | 400 VAC | right side | add-on shunt trip release unit | SM2/3R | **854.70** |
| **Undervoltage release** | | | | | |
| • Opens the MPCB when mains voltage fails and prevents unexpected starting when power is restored | | | | | |
| • Equipped with integrated normally open early make contacts | | | | | |
| **SM1X14230** | 230 VAC | right side | add-on undervoltage release | SM1P/R | **835.80** |
| **SM1X14400** | 400 VAC | right side | add-on undervoltage release | SM1P/R | **835.80** |
| **SM2X14230** | 230 VAC | right side | add-on undervoltage release | SM2/3R | **854.70** |
| **SM2X14400** | 400 VAC | right side | add-on undervoltage release | SM2/3R | **854.70** |
| **Door interlocking handle** | | *(for SM1/2/3R rotary type starters)* | | | |
| **SM1X18200R** | red/yellow | door interlock handle (IP65) and 200 mm shaft | | SM1R | **1 291.50** |
| **SM2X18200R** | red/yellow | door interlock handle (IP65) and 200 mm shaft | | SM2/3R | **1 291.50** |
| **SM1X18S** | support | optional shaft support for | | SM1R | **222.60** |
| **Mounting accessories** | | | | | |
| **BFX8901** | universal | base for screw fixing motor protection | | SM1P/R | **73.50** |
| **SM1X3040P** | 3Ph rigid | rigid connection between SM1P and contactor | | BG mini | **219.45** |
| **SM1X3141P** | 3Ph rigid | rigid connection between SM1P and contactor | | BF09...25A | **294.00** |
| **SM1X3241P** | 3Ph rigid | rigid connection between SM1P and contactor | | BF26...38A | **331.80** |
| **SM1X3040R** | 3Ph rigid | rigid connection between SM1R and contactor | | BG mini | **219.45** |
| **SM1X3141R** | 3Ph rigid | rigid connection between SM1R and contactor | | BF09...25A | **294.00** |
| **SM1X3241R** | 3Ph rigid | rigid connection between SM1R and contactor | | BF26...38A | **331.80** |
| **Bridge bars for SM1P/R motor protection circuit breakers** | | | | | |
| **SMX9032** | insulated | 3-phase bridge bar to connect | 2 units | *(45 mm)* | **197.40** |
| **SMX9033** | insulated | 3-phase bridge bar to connect | 3 units | *(45 mm)* | **241.50** |
| **SMX9034** | insulated | 3-phase bridge bar to connect | 4 units | *(45 mm)* | **287.70** |
| **SMX9035** | insulated | 3-phase bridge bar to connect | 5 units | *(45 mm)* | **310.80** |
| **With spacing to accommodate side-mounted auxiliaries or releases** | | | | | |
| **SMX9042** | insulated | 3-phase bridge bar to connect | 2 units | *(54 mm)* | **474.60** |
| **SMX9043** | insulated | 3-phase bridge bar to connect | 3 units | *(54 mm)* | **597.45** |
| **SMX9044** | insulated | 3-phase bridge bar to connect | 4 units | *(54 mm)* | **631.05** |
| **SMX9045** | insulated | 3-phase bridge bar to connect | 5 units | *(54 mm)* | **682.50** |
| **SMX9030** | 25 mm² | 3-phase busbar supply block | | *(enlarged terminal)* | **194.25** |
| **Enclosures for motor protection circuit breakers - IP65** | | | | | |
| Robust plastic enclosures for rotary and button-controlled motor protection circuit breakers up to 40A. | | | | | |
| **SM1Z1701P** | surface | mount enclosure for starters | 135 x 80 x 101 | SM1P | **532.35** |
| **SM1Z1715R** | surface | mount enclosure for starters | 154 x 100 x 138 | SM1R | **785.40** |
| **Flush mount enclosure** - *(IP65)* | | *panel cutout (H) 115.5 x (W) 70.5 mm* | | | |
| **SM1Z1705P** | flush | mount enclosure for starters | 133 x 87 x 86 | SM1P | **481.95** |
| **SM1X1745P** | IP65 | button membrane protection cover for enclosure | | SM1P | **176.40** |
| **SM1X1740P** | | emergency stop *(twist release)* pushbutton assembly for enc. | | SM1P | **714.00** |




## Enclosed direct-on-line starters

The **M series** by Lovato Electric offers a straightforward and economical solution for starting and stopping induction motors in various industrial and commercial applications.

DOL starters, like those in the MxP series, are preferred in settings where precise control over motor speed or gradual acceleration is not necessary. It provides reliable motor control without the complexity or cost of more advanced systems like soft starters or variable frequency drives.

- Supplied complete with thermal overload and start stop/reset pushbuttons
- Suitable for IE3 premium efficiency motors


M2P...


M1N


M3N


M3PA

| type | motor rating AC3 (400V) | overload range | description | housing | price |
|---|---|---|---|---|---|
| **M series - Standard DOL starters** *(with BF contactors)* | | | | **IP65** | |
| • Insulated IP65 polycarbonate enclosure: | | | M1P *(H)202 x (W) 88 x (D)156 mm*<br>M2P *(H)234 x (W)110 x (D)170 mm* | | |
| **M1P00912A4** | 0.25 kW | 0.63 - 1.0A | direct-on-line starter | PC / IP65 | **2 205.00** |
| **M1P00912A5** | 0.55 kW | 1.0 - 1.6A | direct-on-line starter | PC / IP65 | **2 205.00** |
| **M1P00912A6** | 0.75 kW | 1.6 - 2.5A | direct-on-line starter | PC / IP65 | **2 205.00** |
| **M1P00912A7** | 1.5 kW | 2.5 - 4.0A | direct-on-line starter | PC / IP65 | **2 205.00** |
| **M1P00912A8** | 2.2 kW | 4.0 - 6.5A | direct-on-line starter | PC / IP65 | **2 205.00** |
| **M1P00912A9** | 4.0 kW | 6.3 - 10A | direct-on-line starter | PC / IP65 | **2 205.00** |
| **M1P00912B0** | 5.5 kW | 9 - 14A | direct-on-line starter | PC / IP65 | **2 415.00** |
| **M1P01812B1** | 7.5 kW | 13 - 18A | direct-on-line starter | PC / IP65 | **2 719.50** |
| **M2P02512B2** | 11.0 kW | 17 - 23A | direct-on-line starter | PC / IP65 | **3 496.50** |
| **M2P03212B4** | 15.0 kW | 24 - 32A | direct-on-line starter | PC / IP65 | **5 250.00** |
| **M2P03812B5** | 18.5 kW | 32 - 38A | direct-on-line starter | PC / IP65 | **5 271.00** |

*Supplied standard with 400V coils - other voltages available on request*
*Larger sizes available on request*

**With mounted on-load isolator** *(extra charges)*

- Padlockable in OFF position, interlocked in ON position

| | | | |
|---|---|---|---|
| **I16*** | with padlockable interlocking isolator *(in M2P enclosure)* | 0.25 - 7.5 kW | **577.50** |
| **I40*** | with padlockable interlocking isolator *(in M2P enclosure)* | 11.0 - 18.5 kW | **630.00** |

* *Add part number to end of starter part number i.e* ***M1P00912A4I16***

**Accessories** *for above M series DOL starters*

| | | | |
|---|---|---|---|
| **M1PA** | empty housing with start-stop/reset pushbuttons (IP65) | BF09...18A | **690.90** |
| **M2PA** | empty housing with start-stop/reset pushbuttons (IP65) | BF09...32A | **1 036.35** |
| **M3PA** | empty housing with start-stop/reset pushbuttons (IP65) | BF40...94A | **2 142.00** |
| **M1N** | empty housing without external pushbuttons (IP65) | 202 x 88 x 135 mm | **604.80** |
| **M2N** | empty housing without external pushbuttons (IP65) | 234 x 110 x 149 mm | **864.15** |
| **M3N** | empty housing without external pushbuttons (IP65) | 280 x 233 x 170 mm | **1 039.50** |
| **M24N** | housing no external pushbuttons (IP65) with chassis plate | 210 x 175 x 99 mm | **856.80** |
| **M25N** | housing no external pushbuttons (IP65) with chassis plate | 210 x 175 x 149 mm | **948.15** |
| **MX31** | metal chassis/mounting plate | *(for M25N enclosures)* | **392.70** |
| **MX30** | metal chassis/mounting plate | *(for M3N enclosures)* | **266.70** |
| **MX21P** | fixing adaptor for pushbutton contact blocks | *(for M1/2/25 enclosures)* | **50.40** |
| **MX11P** | stop/reset button extension rod | *(for M1 enclosures)* | **31.50** |
| **MX12P** | stop/reset button extension rod | *(for M2/25 enclosures)* | **31.50** |

| **RM series - Reversing DOL starters** *(enclosed)* | | | | **IP65** | |
|---|---|---|---|---|---|
| **RM series**, reversing DOL starters provide basic motor control functionality with the added capability of changing the direction of motor rotation, making it suitable for various industrial and commercial applications requiring bidirectional motor operation. | | | | | |
| • Supplied complete with thermal overload and "forward-stop-reverse" pushbuttons | | | | | |
| **RM25 starters** | mounted into M25N enclosure | | | (H) 210 x (W) 175 x (D) 165 mm | |
| **RM25P09A5** | 0.37 kW | 0.1 - 1.6A | enclosed reversing starter | PC / IP65 | **4 935.00** |
| **RM25P09A6** | 0.75 kW | 1.6 - 2.5A | enclosed reversing starter | PC / IP65 | **4 935.00** |
| **RM25P09A7** | 1.5 kW | 2.5 - 4.0A | enclosed reversing starter | PC / IP65 | **4 935.00** |
| **RM25P09A8** | 2.2 kW | 4.0 - 6.5A | enclosed reversing starter | PC / IP65 | **4 935.00** |
| **RM25P09A9** | 4.0 kW | 6.3 - 10A | enclosed reversing starter | PC / IP65 | **4 935.00** |
| **RM25P12B0** | 5.5 kW | 9 - 14A | enclosed reversing starter | PC / IP65 | **5 197.50** |
| **RM25P18B1** | 7.5 kW | 13 - 18A | enclosed reversing starter | PC / IP65 | **5 806.50** |
| **RM25P25B2** | 11.0 kW | 17 - 23A | enclosed reversing starter | PC / IP66 | **6 573.00** |

*Larger sizes available on request*

**With mounted on-load isolator** *(extra charges)*

| | | | |
|---|---|---|---|
| **I16*** | with padlockable interlocking isolator | 0.35 - 7.5 kW | **577.50** |
| **I40*** | with padlockable interlocking isolator | 11 kW | **630.00** |

* *Add part number to end of starter part number i.e* ***RM25P09A5I16***



Above ZAR prices do not include VAT. E&OE



JDY18/P



JD09/M2



BFA...

## Star-delta motor starters

The JDY series of enclosed star-delta starters offers a reliable and effective solution for reducing the starting current and torque of three-phase induction motors. Its IP65 rating makes it ideal for use in harsh environments, provides durability and reliability in challenging operating conditions.

Suitable for IE3 premium efficiency motors.

Supplied with:

- Start, stop/reset pushbuttons *(pilot light can be incorporated)*
- Thermal overload relay *(phase failure sensitive)*
- Integral control terminals for ease of wiring
- Coil voltage 400 VAC unless other specified *(024/110/230V - on request)*

| type | motor rating | overload range (x 0.58 of full load) | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **JDY series - Enclosed star-delta starters** | | | **IP65** | | | | |
| **ABS enclosure M3N** *(hinged door 180° opening)* | | | | | | | |
| **JDY09/P** | 7.5 kW | 6.3 - 10A | enclosed star-delta starter | 280 | 233 | 187 | **7 486.50** |
| **JDY12/P** | 11.0 kW | 9 - 14A | enclosed star-delta starter | 280 | 233 | 187 | **8 106.00** |
| **JDY18/P** | 15.0 kW | 13 - 18A | enclosed star-delta starter | 280 | 233 | 187 | **8 494.50** |
| **JDY25/P** | 18.5 kW | 17 - 23A | enclosed star-delta starter | 280 | 233 | 187 | **9 366.00** |
| **JDY26/P** | 22.0 kW | 24 - 32A | enclosed star-delta starter | 280 | 233 | 187 | **10 069.50** |
| **JDY38/P** | 30.0 kW | 32 - 38A | enclosed star-delta starter | 280 | 233 | 187 | **12 810.00** |
| **Extra charge for mounted on-load isolator** | | | | | | | |
| • Padlockable in OFF position, door interlocking in ON position | | | | | | | |
| **I040*** | isolator | | with padlockable door interlocking isolator | up to | 18.5 kW | | **630.00** |
| **I063*** | isolator | | with padlockable door interlocking isolator | up to | 30.0 kW | | **1470.00** |
| * *Add part number to end of starter part number* | | | | | | | |
| **Sheet metal enclosure** - *Grey (RAL7035) - Orange (RAL2000) on request* | | | | | | | |
| **JDY09/M2** | 7.5 kW | 6.3 - 10A | enclosed star-delta starter | 450 | 300 | 220 | **9 103.50** |
| **JDY12/M2** | 11.0 kW | 9 - 14A | enclosed star-delta starter | 450 | 300 | 220 | **8 704.50** |
| **JDY18/M2** | 15.0 kW | 13 - 18A | enclosed star-delta starter | 450 | 300 | 220 | **9 481.50** |
| **JDY25/M2** | 18.5 kW | 17 - 23A | enclosed star-delta starter | 450 | 300 | 220 | **10 479.00** |
| **JDY26/M2** | 22.0 kW | 24 - 32A | enclosed star-delta starter | 450 | 300 | 220 | **11 235.00** |
| **JDY38/M2** | 30.0 kW | 32 - 38A | enclosed star-delta starter | 450 | 300 | 220 | **13 965.00** |
| **JDY50/M4** | 37/45 kW | 35 - 50A | enclosed star-delta starter | 650 | 450 | 270 | **18 375.00** |
| **JDY65/M4** | 55 kW | 46 - 65A | enclosed star-delta starter | 650 | 450 | 270 | **20 475.00** |
| **JDY80/M4** | 75 kW | 60 - 82A | enclosed star-delta starter | 650 | 450 | 270 | **22 995.00** |
| *Larger sizes available on request* | | | | | | | |
| **Extra charge for mounted on-load isolator** | | | | | | | |
| • Padlockable in OFF position, door interlocking in ON position | | | | | | | |
| **I040*** | isolator | | with padlockable door interlocking isolator | up to | 18.5 kW | | **630.00** |
| **I063*** | isolator | | with padlockable door interlocking isolator | up to | 30 kW | | **1470.00** |
| **/PL*** | | | pilot light “trip” or “run” indication incorporated into pushbuttons | | | | **399.00** |
| **/AM*** | | | with ammeter mounted on enclosure door *(48 x 48 direct max. 40A)* | | | | **514.50** |
| **/VM*** | | | with voltmeter mounted on enclosure door *(48 x 48)* | | | | **493.50** |
| * *Add part number to end of starter part number* | | | | | | | |

## BFA series - Open type pre-assembled star-delta starters

The BFA series of open type pre-assembled star-delta starters are typically used in industrial applications.

- Fully assembled and wired with mounted star-delta timer and thermal overload relay

| | | | | |
|---|---|---|---|---|
| **BFA009.10** | 7.5 kW | 6.3 - 10A | open frame complete star-delta starter | **5 145.00** |
| **BFA012.14** | 11.0 kW | 9 - 14A | open frame complete star-delta starter | **5 386.50** |
| **BFA018.18** | 15.0 kW | 13 - 18A | open frame complete star-delta starter | **6 153.00** |
| **BFA025.23** | 18.5 kW | 17 - 23A | open frame complete star-delta starter | **7 108.50** |
| **BFA026.32** | 22.0 kW | 24 - 32A | open frame complete star-delta starter | **7 780.50** |
| **BFA038.38** | 30.0 kW | 32 - 38A | open frame complete star-delta starter | **10 458.00** |
| **BFA050.50** | 37.5 - 45 kW | 35 - 50A | open frame complete star-delta starter | **13 125.00** |
| **BFA065.65** | 55 kW | 46 - 65A | open frame complete star-delta starter | **15 225.00** |
| **BFA080.82** | 75 kW | 60 - 82A | open frame complete star-delta starter | **17 640.00** |
| **BFA095.110** | 90 kW | 90 - 110A | open frame complete star-delta starter | **22 995.00** |
| **BFA115.125** | 110 kW | 75 - 125A | open frame complete star-delta starter | **28 140.00** |
| **BFA150.150** | 132 kW | 90 - 150A | open frame complete star-delta starter | **30 030.00** |

*Larger sizes available on request*

## Soft starters application guide

| | 2 Ph control | | 3 Ph control |
|---|---|---|---|
| Heavy loads | | | ADXT 34...554A |
| Standard loads | | ADXL 18...320A | |
| Light/standard loads | ADXN 6...45A | | |

## ADXN series - Compact soft starters *(two-phase control)*

ADXN soft starters are a simple, compact *(only 45 mm width)* and fast-to-configure products for the gradual control of the starting and stopping of motors. The versatility makes it suitable for several applications for the control of pumps, fans, conveyor belts, compressors. Available with rated currents from 6 to 45A.

- Economical soft starters for motors up to 22kW (400 VAC)
- Rated operational voltage: 208...600 VAC
- Integrated bypass relay disabling the thyristors once the starting ramp has concluded
- Ready to use - factory set configurations for quick and simple commissioning
- Suitable for IE3 premium efficiency motors

Integrated protection functions include: Soft starter thermal protection with integrated temperature sensor, line frequency/voltage out of tolerance, line voltage not present, phase loss, incorrect phase sequence.


ADXNB...


ADXNP...


EXCRDU2



| type | rated current Ie | rated power (400V) | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **ADXNB series - Basic version** | | | *(requires external overload protection)* | | | | |
| Ideal solution for a soft starter with basic functions that are extremely simple to configure for gradually starting and stopping motors. Their versatility makes them adaptable to various applications, including pump, fan, conveyor and compressor control. | | | | | | | |
| Just three parameters, configurable with the front panel potentiometers: | | | | | | | |
| - Initial voltage step: 30-80%U | | | | | | | |
| - Deceleration ramp: 0-20sec | | | - Acceleration ramp: 1-20sec | | | | |
| **Auxiliary supply Us 100...240 VAC** | | | | | | | |
| **ADXNB006** | 6A | 2.2 kW | basic industrial soft starter | 139 | 45 | 113 | **5 460.00** |
| **ADXNB012** | 12A | 5.5 kW | basic industrial soft starter | 139 | 45 | 113 | **6 510.00** |
| **ADXNB018** | 18A | 7.5 kW | basic industrial soft starter | 139 | 45 | 113 | **7 665.00** |
| **ADXNB025** | 25A | 11.0 kW | basic industrial soft starter | 159 | 45 | 128 | **8 347.50** |
| **ADXNB030** | 30A | 15.0 kW | basic industrial soft starter | 159 | 45 | 128 | **10 489.50** |
| **ADXNB038** | 38A | 18.5 kW | basic industrial soft starter | 159 | 45 | 128 | **13 860.00** |
| **ADXNB045** | 45A | 22.0 kW | basic industrial soft starter | 159 | 45 | 128 | **16 380.00** |
| **Auxiliary supply Us 24 VAC/DC** | | | | | | | |
| **ADXNB00624** | 6A | 2.2 kW | basic industrial soft starter | 139 | 45 | 113 | **5 922.00** |
| **ADXNB01224** | 12A | 5.5 kW | basic industrial soft starter | 139 | 45 | 113 | **7 203.00** |
| **ADXNB01824** | 18A | 7.5 kW | basic industrial soft starter | 139 | 45 | 113 | **8 368.50** |
| **ADXNB02524** | 25A | 11.0 kW | basic industrial soft starter | 159 | 45 | 128 | **8 967.00** |
| **ADXNB03024** | 30A | 15.0 kW | basic industrial soft starter | 159 | 45 | 128 | **11 445.00** |
| **ADXNB03824** | 38A | 18.5 kW | basic industrial soft starter | 159 | 45 | 128 | **14 700.00** |
| **ADXNB04524** | 45A | 22.0 kW | basic industrial soft starter | 159 | 45 | 128 | **17 220.00** |
| **ADXNP series - Advanced version** | | | *(includes overload protection)* | | | | |
| Parameter configuration via front potentiometers or NFC connectivity via smart devices with the LOVATO NFC App *(available for Android and iOS)*. | | | | | | | |
| Provides electronic thermal overload protection of the motor via integrated current transformers, permitting management of starting ramps with current limiting, automatically adapted to follow load variations with configurable separate thermal classes for starting and stopping. Offering protection against locked rotor, current asymmetry, low load, starter timeout. | | | | | | | |
| • Optional RS-485 *(Modbus-RTU)* module for integration into a control and supervision network - **CX04** | | | | | | | |
| • Factory set thresholds, reconfigurable via NFC | | | | | | | |
| **Auxiliary supply Us 100...240 VAC** | | | | | | | |
| **ADXNP012** | 12A | 5.5 kW | advanced industrial soft starter | 139 | 45 | 113 | **8 914.50** |
| **ADXNP018** | 18A | 7.5 kW | advanced industrial soft starter | 139 | 45 | 113 | **10 363.50** |
| **ADXNP025** | 25A | 11.0 kW | advanced industrial soft starter | 159 | 45 | 128 | **11 130.00** |
| **ADXNP030** | 30A | 15.0 kW | advanced industrial soft starter | 159 | 45 | 128 | **14 175.00** |
| **ADXNP038** | 38A | 18.5 kW | advanced industrial soft starter | 159 | 45 | 128 | **18 270.00** |
| **ADXNP045** | 45A | 22.0 kW | advanced industrial soft starter | 159 | 45 | 128 | **21 315.00** |
| **Auxiliary supply Us 24 VAC/DC** | | | | | | | |
| **ADXNP01224** | 12A | 5.5 kW | advanced industrial soft starter | 139 | 45 | 113 | **9 030.00** |
| **ADXNP01824** | 18A | 7.5 kW | advanced industrial soft starter | 139 | 45 | 113 | **10 479.00** |
| **ADXNP02524** | 25A | 11.0 kW | advanced industrial soft starter | 159 | 45 | 128 | **11 235.00** |
| **ADXNP03024** | 30A | 15.0 kW | advanced industrial soft starter | 159 | 45 | 128 | **14 910.00** |
| **ADXNP03824** | 38A | 18.5 kW | advanced industrial soft starter | 159 | 45 | 128 | **19 110.00** |
| **ADXNP04524** | 45A | 22.0 kW | advanced industrial soft starter | 159 | 45 | 128 | **20 370.00** |

## Accessories for ADXN and ADXL soft starters

| | | |
|---|---|---|
| **SM1X3150R** | rigid con. kit for direct mnt ADXN 6-38A to SM1R motor protection circuit breakers | **262.50** |
| **CX01** | USB connects PC to ADXNP for programming, download and diagnostics | **4 368.00** |
| **CX02** | Wi-Fi connect PC/smartphone to ADX/NP/XL for programming and monitoring | **10 920.00** |
| **CX04** | RS-485 comm. module for ADX/NP/XL, Modbus-RTU, 24 VAC/DC aux supply | **3 580.50** |
| **EXC1042** | RS-485 communication plug-in board for ADXL… | **2 310.00** |
| **EXCRDU2** | remote display unit for motor starters *(connects up to 32 devices)* | **8 494.50** |



Above ZAR prices do not include VAT. E&OE


ADXL series

## ADXL series - Soft starters *(two-phase control)*

ADXL series soft starters feature a backlit LCD icon display and NFC connectivity for convenient configuration, accessible even from smartphones and tablets. Ideal for both straightforward "plug and play" setups and demanding applications requiring precise control and protection during motor startup and operation. Incorporating two-phase control during motor starting and stopping torque control during operation, they effectively reduce thermal power dissipation.

**General features:**

- Auxiliary supply: 100...240 VAC
- Rated operational voltage: 208...600 VAC
- Programming, data download and diagnostics via incorporated optical port with **CX01/02**
- Voltage ramp startup, torque control, kick start, limited maximum starting current
- Selectable default application: Centrifugal pump, fire pump, conveyor belt, fan, mixer and general purpose
- Optional RS-485 communication with **EXC1042**
- Indicating: - Voltage - current L1/L2/L3 - torque - active power - PF - motor thermal status
  - Soft starter temperature - active energy - motor hour counter - startup counter



ADXL...

| type | rated current Ie | rated power 400V | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **ADXL series** *(two-phase control, integrated bypass facility)* | | | | | | | |
| **ADXL0018600** | 18A | 7.5 kW | industrial soft starter | 218 | 75 | 172 | **15 750.00** |
| **ADXL0030600** | 30A | 15.0 kW | industrial soft starter | 218 | 75 | 172 | **18 165.00** |
| **ADXL0045600** | 45A | 22.0 kW | industrial soft starter | 218 | 75 | 172 | **23 100.00** |
| **ADXL0060600** | 60A | 30.0 kW | industrial soft starter | 218 | 75 | 172 | **26 145.00** |
| **ADXL0075600** | 75A | 37.0 kW | industrial soft starter | 226 | 95 | 182 | **28 980.00** |
| **ADXL0085600** | 85A | 45.0 kW | industrial soft starter | 226 | 95 | 182 | **31 920.00** |
| **ADXL0115600** | 115A | 55.0 kW | industrial soft starter | 226 | 95 | 182 | **38 220.00** |
| **ADXL0135600** | 135A | 75.0 kW | industrial soft starter | 301 | 212 | 216 | **45 150.00** |
| **ADXL0162600** | 162A | 90.0 kW | industrial soft starter | 301 | 212 | 216 | **50 610.00** |
| **ADXL0195600** | 195A | 110.0 kW | industrial soft starter | 486 | 212 | 216 | **61 425.00** |
| **ADXL0250600** | 250A | 132.0 kW | industrial soft starter | 486 | 212 | 216 | **67 515.00** |
| **ADXL0320600** | 320A | 160.0 kW | industrial soft starter | 486 | 212 | 216 | **73 500.00** |



ADXT...

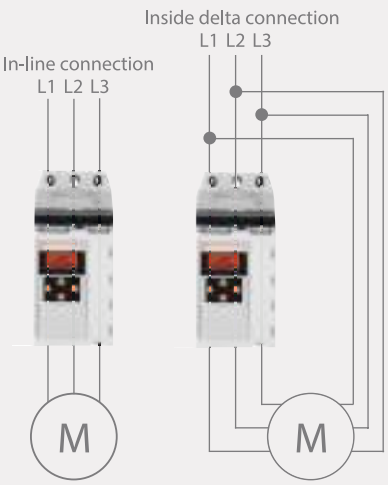
## ADXT... series - Advanced heavy-duty soft starters *(three-phase control)*

**ADXT...** soft starters for applications requiring high performance, reliability and robustness. Incorporate advanced features with integrated motor and starter protection, provide accurate control of motor starting and stopping, reducing energy consumption for constant speed applications.

Mainly used for control of heavy loads due to high torque availability during starting, overcoming the inertia of applications such as crushers, fans, vertical/inclined conveyors, screw compressors, centrifuges, propellers, mills, band/circular saws, shredders and many others. The integrated or external bypass contactor disabling the thyristors once motor starting is completed, reducing energy consumption, generated heating and power dissipation.

- Auxiliary supply voltage 110...120 / 220...240 VAC *(available with 24 VAC/DC supply)*
- Rated operational voltage 380...690 VAC
- Built-in bypass contactor

ADXT soft starters can be installed with traditional in-line connection or inside delta connection *(six-wire connection)* with thyristors connected in series to each motor winding. In this configuration, requiring six-wire motors, the soft starter is only crossed by the phase current, which is significantly lower than the line current. This permits the use of a smaller starter, resulting in cost savings, and simplifies the replacement of star-delta starters since the existing wiring is retained.




| type | rated current Ie | in-line (400V) | inside Δ (400V) | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **ADXT0034** | 34A | 18.5 kW | 22 kW | heavy-duty soft starter | 336 | 152 | 233 | **24 990.00** |
| **ADXT0060** | 60A | 30 kW | 45 kW | heavy-duty soft starter | 336 | 152 | 233 | **36 015.00** |
| **ADXT0084** | 84A | 45 kW | 55 kW | heavy-duty soft starter | 336 | 152 | 233 | **46 305.00** |
| **ADXT0104** | 104A | 55 kW | 75 kW | heavy-duty soft starter | 336 | 152 | 233 | **51 345.00** |
| **ADXT0126** | 126A | 55 kW | 90 kW | heavy-duty soft starter | 336 | 152 | 233 | **68 460.00** |
| **ADXT0139** | 139A | 75 kW | 110 kW | heavy-duty soft starter | 482 | 216 | 244 | **72 345.00** |
| **ADXT0165** | 165A | 90 kW | 132 kW | heavy-duty soft starter | 482 | 216 | 244 | **79 590.00** |
| **ADXT0187** | 187A | 90 kW | 160 kW | heavy-duty soft starter | 482 | 216 | 244 | **91 560.00** |
| **ADXT0230** | 230A | 132 kW | 160 kW | heavy-duty soft starter | 482 | 216 | 244 | **97 860.00** |
| **ADXT0311** | 311A | 160 kW | 250 kW | heavy-duty soft starter | 482 | 216 | 243 | **117 600.00** |
| **ADXT0410** | 410A | 220 kW | 355 kW | heavy-duty soft starter | 482 | 216 | 243 | **133 350.00** |
| **ADXT0506** | 506A | 280 kW | 400 kW | heavy-duty soft starter | 482 | 216 | 243 | **156 450.00** |
| **ADXT0554** | 554A | 315 kW | 450 kW | heavy-duty soft starter | 482 | 216 | 243 | **174 300.00** |

**Accessories** *(for ADXT soft starters)*

| | | |
|---|---|---|
| **ADXTRTU** | RS485 communication card for ADXT, Modbus-RTU protocol | **3 570.00** |
| **ADXTTCP** | Ethernet communication card for ADXT, Modbus-TCP protocol | **12 495.00** |
| **ADXTC01KIT** | remote keypad kit for ADXT (IP65) | **6 783.00** |

Several functions in one device











ME070RD024



ME024RSD024

## Electronic motor starters

ME... series electronic motor starters are extremely compact *(22.5 mm width)* ideal for applications requiring a very high number of starts with electronic thermal protection incorporated.

Employing hybrid technology, combining advantages of extremely long working life of a wear-free semiconductor device with the robustness of a mechanical relay and low consumption.

Direct-on-line and Reversing starters for motors up to 3 kW with rated voltage up to 500VAC.

Electronic motor thermal protection incorporated in all models and are also available with built-in STO *(Safe Torque Off)* emergency stop function.

**Functionality:**

- Direct-on-line and Reversing starters
- Rated motor current 2.4 or 7A (AC3, AC53)
- Operational voltage Ue ≤500 VAC
- Auxiliary and control supply voltage 24 VDC
- Potentiometer for the adjustment of the rated motor current Ie
- Integrated electronic motor thermal protection with tripping class 10A
- Versions with STO (Safe Torque Off) emergency stop with Safety Integrity Level SIL3 (IEC/EN 61508) and Performance Level "PL e" (ISO 13489)

**General benefits**

- 4 digital inputs / 3 integrated digital outputs
- 4 status LEDs on front for diagnostics
- Motor thermal protection against overload / phase loss / phase imbalance

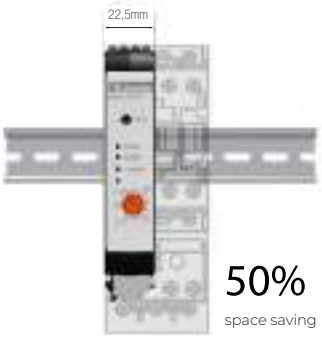
**Typical applications:**

- Conveyors
- Packaging machines
- Automatic doors
- Escalators
- Sorting equipment
- Access control systems

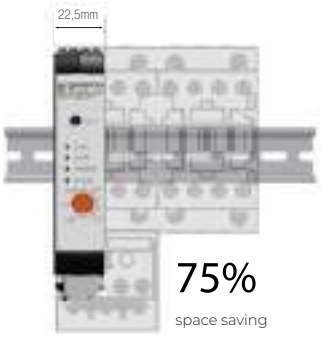
### Electronic motor starters

| type | rated power (400VAC) | rated current Ie AC-53a | adjustment range | STO *(safe torque off)* | description | price |
|---|---|---|---|---|---|---|
| **Direct-on-line starters with integrated motor thermal protection** | | | | | | |
| Overall, the **ME series** of DOL electronic starters with integrated motor thermal protection offer reliable motor control while ensuring the safety and longevity of the connected motors, making them suitable for a wide range of applications across different industries. | | | | | | |
| Particularly beneficial in applications where motors are subjected to varying loads or operating conditions which may lead to overheating if not adequately monitored and protected. | | | | | | |
| **ME024FD024** | 0.75 kW | 2.4 A | 0.18 - 2.4 A | – | direct-on-line starter | **3 801.00** |
| **ME070FD024** | 3.0 kW | 7.0 A | 1.5 - 7.0 A | – | direct-on-line starter | **3 801.00** |
| **ME024FSD024** | 0.75 kW | 2.4 A | 0.18 - 2.4 A | • | direct-on-line starter | **4 305.00** |
| **ME070FSD024** | 3.0 kW | 7.0 A | 1.5 - 7.0 A | • | direct-on-line starter | **4 305.00** |
| **Reversing starters with integrated motor thermal protection** | | | | | | |
| The **ME series** reversing starters with integrated motor thermal protection provide a comprehensive solution for starting, stopping, and reversing induction motors while safeguarding them against overheating in various industrial and commercial applications. | | | | | | |
| **ME024RD024** | 0.75 kW | 2.4 A | 0.18 - 2.4 A | – | reversing starter | **4 147.50** |
| **ME070RD024** | 3.0 kW | 7.0 A | 1.5 - 7.0 A | – | reversing starter | **4 147.50** |
| **ME024RSD024** | 0.75 kW | 2.4 A | 0.18 - 2.4 A | • | reversing starter | **4 651.50** |
| **ME070RSD024** | 3.0 kW | 7.0 A | 1.5 - 7.0 A | • | reversing starter | **4 651.50** |

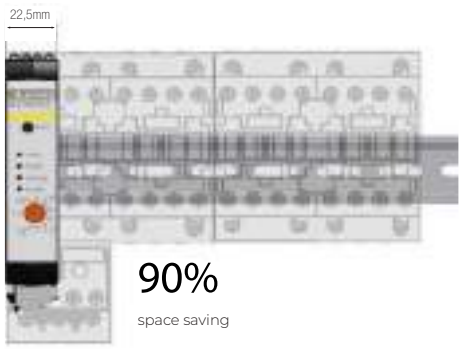
## Compact dimensions




DOL starter with motor thermal protection




Reversing starter with motor thermal protection




Reversing starter with motor thermal protection and emergency stop



Above ZAR prices do not include VAT. E&OE




**Advanced electronic motor protection and control**

WDH-31-530 advanced motor management system provides detailed multifunctional monitoring, control, protection and communication as an integral solution for management of 3-phase AC motors. Offering high-performance, reliable, accurate motor protection and control in harsh industrial applications

Potential motor fault situations anticipated via predictive analysis, avoiding dreaded unexpected disruptions. and downtime in important processes, increasing productivity and reducing downtime by providing detailed fault reporting with self-diagnosis, installation monitoring and statistics of all necessary information.



WDH-31-533-5

**Predefined, selectable motor control protection modes incorporated into the controller:**

| | |
|---|---|
| **A** Direct start | starting of non-reversing motors |
| **B** Bi-directional start | starting of reversing motors |
| **C** Two-speed start | 2-speed starting of motors *(Dahlander, pole changer)* |
| **E** Star-delta start | star-delta starting of motors |
| **H** Autotransformer start | autotransformer starting |
| **K** Overload | monitoring of motors not managed by the controller |
| **R** Soft-starter start | Soft start with starting control |
| **P** VFD starter | Starting control with frequency converter |
| **V** Electric valve start | Starting of electric valves |

**Measurement / metering functions (RMS values):**

Three-phase current - Current imbalance - Temperature - Residual current - Three-phase voltage - Frequency - Active/Reactive power - Power factor - Active/Reactive energy - Resistance input

**Protection functions** *with configurable trip and starting delays*

- Overload inverse time protection
- Start acceleration timeout protection
- Starting overcurrent protection
- Operating overcurrent protection
- Short circuit protection
- Current imbalance / open phase protection
- Under load (current or power)
- Overvoltage protection
- Undervoltage protection
- Residual current *(grounding)* 0.3Ie~8.0Ie
- Residual current *(leakage)* 50mA~5000mA
- External fault protection *(process interlock)*
- tE time protection *(increased safety motor)*
- Under power protection
- Phase sequence protection
- Temperature protection
- Analog input protection *(process interlock)*
- Voltage imbalance



WDH-31-53X

| | |
|---|---|
| Rated voltage: | 400V / 690 VAC |
| Rated current: | 0.1...800A - Internal Current Transformers up to 100 A *(by external CT's up to 800A)* |
| Control voltage: | 80…270VAC/DC |
| Communication: | RS-485, Modbus-RTU communication *(others on request)* |
| Trip classes: | 10A-10-20-30 (IEC 947-4-1) |
| Logic inputs: | 5 (customisable) |
| Relay logic outputs: | 4 - 1NC+3NO *(customisable)* |
| Analog output: | 1 - DC 4-20mA *(programmable)* |



WDH-31-53XC

Optional HMI display unit for reading, displaying, diagnostics, and modifying monitored parameters.



WDH-31-531-100
*with built-in CTs*

| type | current range | motor rating (400V) | inbuilt CT hole Ø | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Advanced motor management controller** | | | | | | | | |
| • DIN-rail mounting, compact design<br>• Integrated current transformers and residual current transformer<br>• PTC / NTC thermistor input for motor temperature monitoring and protection | | | | | | | | |
| **WDH-31-533-5** | 0.2-5 A | 0.13 - 2 kW | 10.5mm | motor protection | 90 | 70 | 130 | **7 633.50** |
| **WDH-31-533-25** | 2.5-25 A | 2 - 11 kW | 10.5mm | motor protection | 90 | 70 | 130 | **7 633.50** |
| **WDH-31-533-100** | 10-100 A | 11 - 55 kW | 18.0mm | motor protection | 90 | 90 | 121 | **7 633.50** |
| *Above 100A - use 5A unit with 3 x 5A secondary Current Transformers* | | | | | | | | |
| **Display units** *for (above) controllers* *IP65*<br>External HMI LCD display and control keypad dedicated to WDH motor controllers for: configuration, operation, monitoring and displaying of controller parameters, faults and alarms.<br>• Panel mounting: 61 x 98 mm display - *(cut-out 91.5 x 55 mm)*<br>• IP protection: IP65 *(front panel)*<br>• USB port for up/download of parameters and logic *(only WHD-31-50XC)*<br>• Supplied with cable for connection to WDH controller *(1 meter)* | | | | | 61 | 98 | 27 | |
| **WDH-31-53X** | HMI | | | external HMI LCD display and control keypad | | | | **3 150.00** |
| **WDH-31-53XC** | HMI | | | external HMI TFT *(full colour)* display and control keypad | | | | **7 182.00** |
| **Controller with integrated LCD display** *(as above WDH-31-533 but with LCD display)* | | | | | | | | |
| **WDH-31-531-5** | 0.2 - 5A | 0.13 - 2 kW | 10.5 mm | motor protection | 90 | 70 | 130 | **10 815.00** |
| **WDH-31-531-25** | 2.5 - 25A | 2 - 11 kW | 10.5 mm | motor protection | 90 | 70 | 130 | **10 815.00** |
| **WDH-31-531-100** | 10 - 100A | 11 - 55 kW | 18.0 mm | motor protection | 90 | 90 | 121 | **10 815.00** |
| *Above 100A - use 5A unit with 3 x 5A secondary Current Transformers* | | | | | | | | |



GA016A



GA125A



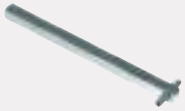
GAX42040A



GAX61



GAX63



GAX7200



GAX...N



GLX00



GAX60B

**GA series - Three-pole load-break switches 16A - 160A**

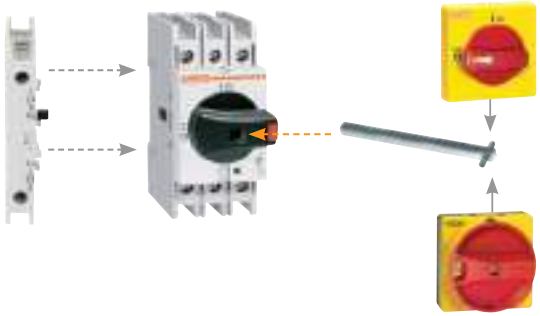
GA series load break switches *(also referred to as switch disconnectors)* are manufactured in robust, heavy-duty ABS materials, ensuring durability in diverse environments. With their modular DIN-rail mountable design and comprehensive range of accessories, these switches are versatile components suitable for various applications.

Whether installed in industrial panels, machinery, electrical distribution systems, renewable energy installations, or power generation facilities, the GA series provides reliable manual control, isolation, and switching of electrical circuits, contributing to safe and efficient operations across different industries.

- Modular design DIN-rail mountable, supplied with direct mounted padlockable handle
- Door interlocking handle and shaft *(to be ordered separately)*

| type | AC-23A ≤ 400V | AC-23A ≤ 415V | poles | description | dimensions (mm) (H) | (W) | (D | price |
|---|---|---|---|---|---|---|---|---|
| **GA016A** | 16A | 7.5 kW | 3-pole | Isolator/load-break switch | 78 | 36 | 75 | **344.40** |
| **GA025A** | 25A | 11.0 kW | 3-pole | Isolator/load-break switch | 78 | 36 | 75 | **393.75** |
| **GA032A** | 32A | 15.0 kW | 3-pole | Isolator/load-break switch | 78 | 36 | 75 | **454.65** |
| **GA040A** | 40A | 18.5 kW | 3-pole | Isolator/load-break switch | 78 | 36 | 75 | **505.05** |
| **GA063SA** | 45A | 22.0 kW | 3-pole | Isolator/load-break switch | 78 | 36 | 75 | **709.80** |
| **GA063A** | 63A | 30 kW | 3-pole | Isolator/load-break switch | 100 | 70 | 75 | **1 015.35** |
| **GA080A** | 80A | 45 kW | 3-pole | Isolator/load-break switch | 100 | 70 | 75 | **1 197.00** |
| **GA125A** | 125A | 55 kW | 3-pole | Isolator/load-break switch | 100 | 70 | 75 | **1 438.50** |
| **GA160A** | 160A | 55 kW | 3-pole | Isolator/load-break switch | 100 | 70 | 75 | **1 680.00** |
| **Attachable 4th pole** *(for above 3-pole switches)* | | | | | | | | |
| **GAX42040A** | 40A | – | 1-pole | attachable 4th pole for switches | GA016...40A | | | **166.95** |
| **GAX42063SA** | 63A | – | 1-pole | attachable 4th pole for switches | GA063SA | | | **252.00** |
| **GAX42080A** | 80A | – | 1-pole | attachable 4th pole for switches | GA063...80A | | | **388.50** |
| **GAX42125A** | 125A | – | 1-pole | attachable 4th pole for switches | GA125A | | | **393.75** |
| **GAX42160A** | 160A | – | 1-pole | attachable 4th pole for switches | GA160A | | | **484.05** |
| **GAX41040A** | 40A | – | 1-pole | early make 4th pole for switches | GA016...40A | | | **183.75** |
| **GAX41125A** | 125A | – | 1-pole | early make 4th pole for switches | GA063...125A | | | **435.75** |
| **Handles** *(external front operation)* **IP65** | | | | | | | | |
| • External door interlocking handles padlockable *(3 padlocks)* in "OFF" position | | | | | | | | |
| **GAX61** | red/yellow | | | door interlocking handle 65 mm² *(screw fixing)* | GA016...160A | | | **182.70** |
| **GAX63** | red/yellow | | | door interlocking handle 65 mm² *(ring fix Ø 22 mm)* | GA016...160A | | | **290.85** |
| **GAX63B** | black | | | door interlocking handle 65 mm² *(ring fix Ø 22 mm)* | GA016...160A | | | **290.85** |
| **GAX64** | red/yellow | | | as above - defeatable 65 mm² *(ring fix Ø 22 mm)* | GA016...160A | | | **430.50** |
| **GAX68** | red/yellow | | | door interlocking handle 48 mm² *(screw fixing)* | GA016...40A/63SA | | | **178.50** |
| **GAX66N*** | red/yellow | | | door interlocking pistol grip handle - *(defeatable)* | GA063...160A | | | **837.90** |
| **GAX66NB*** | black | | | door interlocking pistol grip handle - *(defeatable)* | GA063A...160A | | | **837.90** |
| * *Requires **GAX60B** adaptor (below) and 7 mm² extension shaft* | | | | | | | | |
| **GAX60B** | | | | adaptor to accommodate 7 mm² shaft required for handles | GAX66N/NB | | | **92.40** |
| **GLX00** | – | | | shaft alignment ring for pistol grip handles | GAX66N/NB | | | **199.50** |
| **Extension shafts** *(for above handles)* | | | | | | | | |
| **GAX7200** | 200 mm | ☐ 5 mm² | | extension shaft for handles | GAX61...8 | | | **82.95** |
| **GAX7300** | 300 mm | ☐ 5 mm² | | extension shaft for handles | GAX61...8 | | | **116.55** |
| **GAX7200AN** | 200 mm | ☐ 7 mm² | | extension shaft for handles | GAX66N/NB | | | **168.00** |
| **GAX7300AN** | 300 mm | ☐ 7 mm² | | extension shaft for handles | GAX66N/NB | | | **301.35** |

## GA series - Switch disconnector / Accessories



Scan to watch video



Above ZAR prices do not include VAT. E&OE


GAX67B


GAX6000


GAX1011A


GAX391


GAX83


GA025C


GA080C

| type | contact / pole | | description | for switch | price |
|---|---|---|---|---|---|
| **Changeover and parallel** *attachments for switches* **16A - 160A** | | | | | |
| **Changeover attachment** | | | | | |
| • To mechanically interlock two switches side-by-side to make up a changeover switch | | | | | |
| **GAX5000** | I-O-II | | changeover mechanism between two switches | GA016...40A/63SA | **673.05** |
| **GAX5001** | I-O-II | | changeover mechanism between two switches | GA063...160A | **896.70** |
| **GAX67B** | black | | door interlocking handle *(I-O-II)* for above changeover mechanisms | | **340.20** |
| **Parallel attachment** | | | | | |
| • Combine two switches side-by-side to make up a 6/8 pole switch | | | | | |
| **GAX6000** | I-O | | 6/8 pole conversion kit between two switches | GA016...40A/63SA | **675.15** |
| **GAX6001*** | I-O | | 6/8 pole conversion kit between two switches | GA063...125A | **810.60** |
| * *Requires* ***GAX66N/NB*** *handles,* ***GAX60B*** *adaptor and 7 mm² extension shaft (see pg* ***A-17****)* | | | | | |
| **Auxiliary contact blocks** *(Ith 10A)* | | | | | |
| Auxiliary contact blocks are used to operate auxiliary circuits and control circuits in standard industrial environments. | | | | | |
| • NO + NC contacts | | | | | |
| • Clipping onto the right- and/or left-hand side of the switches | | | | | |
| **GAX1011A** | 1NO + 1NC | auxiliary | contact for DIN-rail mounting switches | GA016...160A | **319.20** |
| **GAX1110EA** | 1NO | auxiliary | for DIN-rail mount switches *(early-break)* | GA016...40A/63SA | **373.80** |
| **GAX1210EA** | 1NO | auxiliary | for DIN-rail mount switches *(early-break)* | GA063...160A | **373.80** |
| **Three-pole fuse holder** for load-break switches **16 - 32A** | | | | | |
| Three-pole fuse holder can be directly mounted onto 16 - 32A switch disconnectors to provide a single compact unit. | | | | | |
| • For cylindrical 10 x 38 mm fuses | | | | | |
| • Access to the fuses can only be made with the isolator in the OFF position | | | | | |
| **GAX391** | 10 x 38 | | 3ph fuse holder *(attaches onto switches)* | GA016...032A | **668.85** |
| **Terminal shrouds** *for switches* **16 - 160A** | | | | | |
| **Three-pole terminal covers** | | | | | |
| **GAX83** | terminal | 3-pole | protection shroud *(set of 2 pcs)* | GA016...40A/63SA | **105.00** |
| **GAX84** | terminal | 3-pole | protection shroud *(set of 2 pcs)* | GA063...160A | **168.00** |
| **Single-pole terminal covers** *(for 4th pole)* | | | | | |
| **GAX81** | terminal | 1-pole | protection shroud *(set of 2 pcs)* | GA016...40A/63SA | **63.00** |
| **GAX82** | terminal | 1-pole | protection shroud *(set of 2 pcs)* | GA063...160A | **94.50** |

**Direct door mounting switches** *(rear access terminals) with shaft*

| type | AC-21A ≤ 690V | AC-23A ≤ 415V | poles | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **GA025C** | 25A | 11.0 kW | 3-pole | direct mnt load-break switch | 78 | 36 | 73 | **445.20** |
| **GA040C** | 40A | 18.5 kW | 3-pole | direct mnt load-break switch | 78 | 36 | 73 | **553.35** |
| **GA080C** | 80A | 45.0 kW | 3-pole | direct mnt load-break switch | 100 | 70 | 70 | **1 291.50** |
| **GA125C** | 125A | 55.0 kW | 3-pole | direct mnt load-break switch | 100 | 70 | 70 | **1 543.50** |

| | | | | | |
|---|---|---|---|---|---|
| **Accessories for** *(above)* **direct door-mounted switches** | | | | | |
| **Attachable 4th pole** | | | | | |
| **GAX42040C** | 40A | 18.5 kW | 1-pole | attachable 4th pole for switch | GA025...40C | **210.00** |
| **GAX42125C** | 125A | 55 kW | 1-pole | attachable 4th pole for switch | GA080...125C | **490.35** |
| **Handles** for *(above)* direct door-mounted switches *(IP65)* | | | | | |
| • External handles padlockable *(3 padlocks)* in "OFF" position | | | | | |
| **GAX61** | red/yellow | | door interlocking handle 65 mm² *(screw fixing)* | GA025...125C | **182.70** |
| **GAX68** | red/yellow | | door interlocking handle 48 mm² *(screw fixing)* | GA025...40C | **178.50** |
| **GAX63** | red/yellow | | door interlocking handle 65 mm² *(ring fix Ø 22 mm)* | GA025...40C | **290.85** |
| **GAX63B** | black | | door interlocking handle 65 mm² *(ring fix Ø 22 mm)* | GA016...160A | **290.85** |
| **Auxiliary contact blocks** *(Ith 10A) (for above door mount switches)* | | | | | |
| **GAX1011C** | 1NO + 1NC | auxiliary | for direct door mount switches | GA025...125C | **337.05** |

# Switch disconnectors





GL0315C1



GL1000C1



GLX61B



GLX61D



GLX550

| type | AC-23A ≤ 400V | AC-23A ≤ 415V | poles | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **GL series - Three-pole load-break switches** | | | | | **160A - 1000A** | | | |
| • Compact design - chassis mount or DIN-rail mountable *(up to 315A)* | | | | | | | | |
| • Visible contacts - Maximum security Window on individual power poles clearly indicates switch status | | | | | | | | |
| • Easy shaft mount and removal *(snap-on with front-mounted release lever)* | | | | | | | | |
| • Door interlocking handle and shaft *(to be ordered separately)* | | | | | | | | |
| **GL0160C1** | 160A | 90 kW | 3-pole | Isolator/load-break switch | 155 | 162 | 91 | **2 572.50** |
| **GL0200C1** | 200A | 110 kW | 3-pole | Isolator/load-break switch | 155 | 162 | 91 | **2 761.50** |
| **GL0250C1** | 250A | 140 kW | 3-pole | Isolator/load-break switch | 155 | 162 | 91 | **3 738.00** |
| **GL0315C1** | 315A | 160 kW | 3-pole | Isolator/load-break switch | 155 | 162 | 91 | **4 284.00** |
| **GL0400C1** | 400A | 200 kW | 3-pole | Isolator/load-break switch | 188 | 204 | 112 | **5 449.50** |
| **GL0500C1** | 500A | 250 kW | 3-pole | Isolator/load-break switch | 188 | 204 | 112 | **5 953.50** |
| **GL0630C1** | 630A | 355 kW | 3-pole | Isolator/load-break switch | 260 | 231 | 112 | **6 300.00** |
| **GL0800C1** | 800A | 450 kW | 3-pole | Isolator/load-break switch | 250 | 284 | 148 | **12 810.00** |
| **GL1000C1** | 1000A | 560 kW | 3-pole | Isolator/load-break switch | 388 | 314 | 148 | **21 000.00** |
| **Attachable 4th pole** *(for above 3-pole switches)* | | | | | | | | |
| **GLX420315** | 315A | – | 1-pole | attachable 4th pole for switches | GL0160...315C1 | | | **1 060.50** |
| **GLX420400** | 400A | – | 1-pole | attachable 4th pole for switches | GL0400C1 | | | **2 005.50** |
| **GLX420630** | 630A | – | 1-pole | attachable 4th pole for switches | GL0500...630C1 | | | **2 824.50** |
| **GLX420800** | 800A | – | 1-pole | attachable 4th pole for switches | GL0800C1 | | | **4 063.50** |
| **GLX421000** | 1000A | – | 1-pole | attachable 4th pole for switches | GL1000C1 | | | **5 901.00** |
| **Handles** *(external front operation)* | | | | | **IP65** | | | |
| • External door interlocking handles padlockable *(3 padlocks)* in "OFF" position | | | | | | | | |
| **GLX61** | red/yellow | | | door interlocking pistol grip handle *(125 mm)* | GL0160...315C1 | | | **521.85** |
| **GLX61B** | black | | | door interlocking pistol grip handle *(125 mm)* | GL0160...315C1 | | | **521.85** |
| **GLX62** | red/yellow | | | door interlocking pistol grip handle *(175 mm)* | GL0400...630C1 | | | **580.65** |
| **GLX62B** | black | | | door interlocking pistol grip handle *(175 mm)* | GL0400...630C1 | | | **580.65** |
| **GLX63** | red/yellow | | | door interlocking pistol grip handle *(175 mm)* | GL0800...1000C1 | | | **661.50** |
| **GLX63B** | black | | | door interlocking pistol grip handle *(175 mm)* | GL0800...1000C1 | | | **661.50** |
| **GLX00** | – | | | shaft alignment ring for pistol grip handles | GLX61...3/B | | | **199.50** |
| **Extension shafts** *(for above handles)* | | | | | | | | |
| **GLX7200S10** | 200 mm | ☐ 10 mm² | | extension shaft for handles | GLX61...2/B | | | **226.80** |
| **GLX7300S10** | 300 mm | ☐ 10 mm² | | extension shaft for handles | GLX61...2/B | | | **248.85** |
| **GLX7400S10** | 400 mm | ☐ 10 mm² | | extension shaft for handles | GLX61...2/B | | | **336.00** |
| **GLX7500S10** | 500 mm | ☐ 10 mm² | | extension shaft for handles | GLX61...2/B | | | **609.00** |
| **GLX7200S12** | 200 mm | ☐ 12 mm² | | extension shaft for handles | GLX63/B | | | **346.50** |
| **GLX7300S12** | 300 mm | ☐ 12 mm² | | extension shaft for handles | GLX63/B | | | **399.00** |
| **GLX7400S12** | 400 mm | ☐ 12 mm² | | extension shaft for handles | GLX63/B | | | **546.00** |
| **GLX7500S12** | 500 mm | ☐ 12 mm² | | extension shaft for handles | GLX63/B | | | **987.00** |
| **Handles** *(direct switch mounted)* | | | | | | | | |
| **GLX61DB** | black | | | direct switch mount internal handle | GL0160...315C1 | | | **514.50** |
| **GLX61D** | red/yellow | | | direct switch mount internal handle | GL0160...315C1 | | | **514.50** |
| **GLX62DB** | black | | | direct switch mount internal handle | GL0400...630C1 | | | **577.50** |
| **GLX63DB** | black | | | direct switch mount internal handle | GL0800...1000C1 | | | **661.50** |
| **Auxiliary contact blocks** *(Ith 10A)* | | | | | | | | |
| • Snap-on auxiliary contact blocks mounted on the main switching actuator | | | | | | | | |
| **GLX1010EA** | 1NO | | auxiliary | contact for GL switches *(early break)* | GL0160...1000C1 | | | **182.70** |
| **GLX1001** | 1NC | | auxiliary | contact block for GL switches | GL0160...1000C1 | | | **189.00** |
| **Terminal shrouds for switches 160 - 1000A** | | | | | | | | |
| **GLX800** | 1-pole | | terminal | protection shroud *(set of 3 pcs)* | GL0160...315C1 | | | **746.55** |
| **GLX802** | 1-pole | | terminal | protection shroud *(set of 3 pcs)* | GL0400...630C1 | | | **1 060.50** |
| **GLX804** | 1-pole | | terminal | protection shroud *(set of 3 pcs)* | GL0800...1000C1 | | | **1 281.00** |
| **Phase barriers** *(required for voltage > 500V)* | | | | | | | | |
| **GLX900** | 3-pole | | barrier | phase barrier *(set of 6 pcs)* | GL0160...315C1 | | | **1 071.00** |
| **GLX902** | 3-pole | | barrier | phase barrier *(set of 6 pcs)* | GL0400...630C1 | | | **1 669.50** |
| **GLX904** | 3-pole | | barrier | phase barrier *(set of 6 pcs)* | GL0800C1 | | | **1 837.50** |
| **Captive nuts** | | | | | | | | |
| **GLX550** | 1 terminal | | | captive nuts for switch terminals *(set of 8 pcs)* | GL0160...315C1 | | | **1 270.50** |
| **GLX551** | 1 terminal | | | captive nuts for switch terminals *(set of 8 pcs)* | GL0400...630C1 | | | **290.85** |
| **GLX552** | 1 terminal | | | captive nuts for switch terminals *(set of 8 pcs)* | GL0800C1 | | | **1 848.00** |
| **GLX553** | 1 terminal | | | captive nuts for switch terminals *(set of 8 pcs)* | GL01000C1 | | | **2 026.50** |



Above ZAR prices do not include VAT. E&OE


GA025ET6


GAZ025 ET6


GLC0200C1


GLX00


GLX61DB


GLX201

| type | AC-21A ≤ 690V | AC-23A ≤ 415V | poles | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **GA series - Three-pole changeover switches** | | | | | **IP65** | | | |
| • Direct operating handle and door coupling version<br>• Modular design DIN-rail mountable supplied with direct mounted padlockable handle<br>• Door interlocking handle and shaft *(to be ordered separately - see below)*<br>• Attachable 4th pole available for all switches | | | | | | | | |
| **GA025ET6** | 25A | 11.0 kW | 3-pole | changeover switch | 78 | 72 | 89 | **1 585.50** |
| **GA040ET6** | 40A | 18.5 kW | 3-pole | changeover switch | 78 | 72 | 89 | **1 743.00** |
| **GA063SAET6** | 63A | 30 kW | 3-pole | changeover switch | 78 | 72 | 89 | **1 869.00** |
| **GA080ET6** | 80A | 45 kW | 3-pole | changeover switch | 100 | 140 | 89 | **2 772.00** |
| **GA125ET6** | 125A | 55 kW | 3-pole | changeover switch | 100 | 140 | 89 | **4 126.50** |
| **GA160ET6** | 160A | 55 kW | 3-pole | changeover switch | 100 | 140 | 89 | **6 342.00** |
| **GA series - Enclosed changeover switches** | | | | | **IP65** | | | |
| • Enclosure material: Polycarbonate<br>• Possibility of fitting: 2 contact blocks both on the right and left side for **GAZ...ET6** types | | | | | | | | |
| **GAZ025ET6** | 25A | 11.0 kW | 3-pole | enclosed changeover switch | 210 | 175 | 184 | **3 129.00** |
| **GAZ040ET6** | 40A | 18.5 kW | 3-pole | enclosed changeover switch | 210 | 175 | 184 | **3 349.50** |
| **GAZ080ET6** | 80A | 45.0 kW | 3-pole | enclosed changeover switch | 280 | 220 | 208 | **4 903.50** |
| **GAZ125ET6** | 125A | 55.0 kW | 3-pole | enclosed changeover switch | 280 | 220 | 208 | **5 365.50** |
| *Add attachable **4th** pole to the above switches* | | | | | | | | |
| **GLC series - Changeover switches** | | | | | IEC/EN, 60947-6-1 | | | |
| • Operating handle and shaft *(to be ordered separately)*<br>• Visual contacts *(window on individual power poles clearly indicates switch status)*<br>• Easy shaft mount and removal *(snap-on with front-mounted release lever)*<br>• Clip-on auxiliary contact *(up to 8 per switch)* | | | | | | | | |
| **GLC0160C1** | 160A | 90 kW | 3-pole | changeover switch | 141 | 186 | 192 | **7 045.50** |
| **GLC0200C1** | 200A | 110 kW | 3-pole | changeover switch | 141 | 186 | 192 | **7 696.50** |
| **GLC0250C1** | 250A | 140 kW | 3-pole | changeover switch | 141 | 186 | 192 | **9 009.00** |
| **GLC0315C1** | 315A | 160 kW | 3-pole | changeover switch | 141 | 186 | 192 | **13 125.00** |
| **GLC0400C1** | 400A | 200 kW | 3-pole | changeover switch | 159 | 237 | 231 | **17 010.00** |
| **GLC0500C1** | 500A | 250 kW | 3-pole | changeover switch | 159 | 237 | 231 | **20 055.00** |
| **GLC0630C1** | 630A | 355 kW | 3-pole | changeover switch | 260 | 264 | 231 | **24 255.00** |
| **GLC0800C1** | 800A | 450 kW | 3-pole | changeover switch | 200 | 340 | 326 | **29 820.00** |
| **GLC1000C1** | 1000A | 560 kW | 3-pole | changeover switch | 388 | 370 | 326 | **38 104.50** |
| **GLC0160T4C1** | 160A | 90 kW | 4-pole | changeover switch | 141 | 221 | 192 | **8 851.50** |
| **GLC0200T4C1** | 200A | 110 kW | 4-pole | changeover switch | 141 | 221 | 192 | **9 366.00** |
| **GLC0250T4C1** | 250A | 140 kW | 4-pole | changeover switch | 141 | 221 | 192 | **13 062.00** |
| **GLC0315T4C1** | 315A | 160 kW | 4-pole | changeover switch | 141 | 221 | 192 | **15 109.50** |
| **GLC0400T4C1** | 400A | 200 kW | 4-pole | changeover switch | 159 | 282 | 231 | **20 716.50** |
| **GLC0500T4C1** | 500A | 250 kW | 4-pole | changeover switch | 159 | 282 | 231 | **24 454.50** |
| **GLC0630T4C1** | 630A | 355 kW | 4-pole | changeover switch | 260 | 318 | 231 | **29 410.50** |
| **GLC0800T4C1** | 800A | 450 kW | 4-pole | changeover switch | 200 | 405 | 326 | **38 797.50** |
| **GLC1000T4C1** | 1000A | 560 kW | 4-pole | changeover switch | 388 | 445 | 326 | **46 567.50** |
| **Handles for changeover switches** *(external front operation)* | | | | | **IP65** | | | |
| • External door interlocking handles padlockable *(3 padlocks)* in "OFF" position | | | | | | | | |
| **GAX67B** | black | I-O-II | door interlocking handle 65 mm² *(screw fixing)* | | GA025...160ET6 | | | **340.20** |
| **GLX61CB** | black | I-O-II | door interlocking pistol grip handle *(125 mm)* | | GLC0200...315C1 | | | **682.50** |
| **GLX62CB** | black | I-O-II | door interlocking pistol grip handle *(175 mm)* | | GLC0400...630C1 | | | **903.00** |
| **GLX63CB** | black | I-O-II | door interlocking pistol grip handle *(175 mm)* | | GLC0800...1000C1 | | | **924.00** |
| **GLX00** | black | | shaft alignment ring for all above handles | | GLX61...3CB | | | **199.50** |
| For extension shafts *see* ***A-17*** | | | | | | | | |
| **Direct switch-mounted handles for changeover switches** | | | | | | | | |
| **GLX61DB** | black | I-O-II | direct switch mount internal handle | | GLC160...315C1 | | | **514.50** |
| **GLX62DB** | black | I-O-II | direct switch mount internal handle | | GLC0400...630C1 | | | **577.50** |
| **GLX63DB** | black | I-O-II | direct switch mount internal handle | | GLC0800...1000C1 | | | **661.50** |
| **Bridging bars for changeover switches** | | | | | | | | |
| **GLX201** | 3-pole | bridge bars | terminal bridging bars *(set of 3 pcs)* | | GLC160...315C1 | | | **1 207.50** |
| **GLX206** | 3-pole | bridge bars | terminal bridging bars *(set of 3 pcs)* | | GLC0400...630C1 | | | **1 638.00** |
| **GLX208** | 3-pole | bridge bars | terminal bridging bars *(set of 3 pcs)* | | GLC0800...1000C1 | | | **2 205.00** |
| **GLX202** | 4-pole | bridge bars | terminal bridging bars *(set of 4 pcs)* | | GLC160...315C1 | | | **1 606.50** |
| **GLX207** | 4-pole | bridge bars | terminal bridging bars *(set of 4 pcs)* | | GLC0400...630C1 | | | **2 184.00** |
| **GLX209** | 4-pole | bridge bars | terminal bridging bars *(set of 4 pcs)* | | GLC0800...1000C1 | | | **2 950.50** |



GAZ025



GAZM016EM



GAZM160EM



GAX42063SA



GLX420800

## Enclosed Isolators

GA series enclosed switch disconnectors are supplied in robust, heavy-duty enclosures in an IP65 execution. The enclosures incorporate a red/yellow operating handle mechanically interlocked with cover in the "ON" position and padlockable *(3 padlocks)* in the "OFF" position.

**General features:**

- Manual operated
- IP rating: IP65
- Attachable 4th pole available for all switches
- Padlockable handles *(3 padlocks)* in OFF position
- Red/Yellow handle, interlocked with front cover in ON position
- Available in plastic (ABS), metal *(sheet metal)* and stainless steel

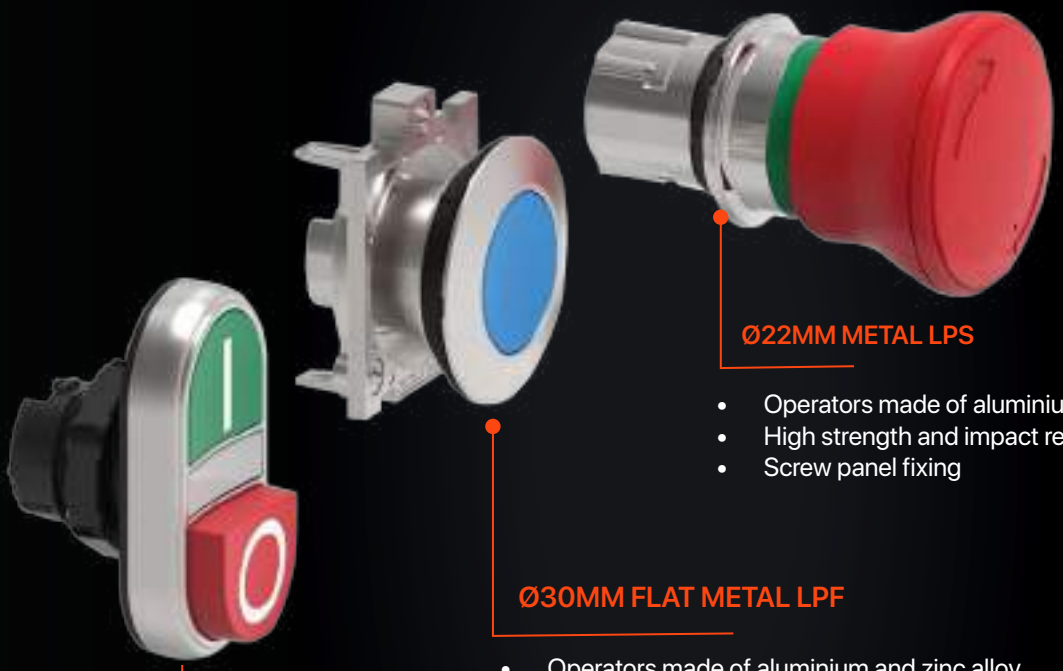
| type | AC-21A ≤ 690V | AC-23A ≤ 415V | poles | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Plastic ABS enclosed isolators** | | | | **IP65** | | | | |
| **GAZ016** | 16A | 7.5 kW | 3-pole | enclosed load-break switch | 160 | 100 | 120 | **719.25** |
| **GAZ025** | 25A | 11.0 kW | 3-pole | enclosed load-break switch | 160 | 100 | 120 | **784.35** |
| **GAZ032** | 32A | 15.0 kW | 3-pole | enclosed load-break switch | 160 | 100 | 120 | **849.45** |
| **GAZ040EM** | 40A | 18.5 kW | 3-pole | enclosed load-break switch | 160 | 100 | 120 | **997.50** |
| **GAZ063EM** | 63A | 22.0 kW | 3-pole | enclosed load-break switch | 160 | 100 | 120 | **1 197.00** |
| **GAZ080EM** | 80A | 45.0 kW | 3-pole | enclosed load-break switch | 210 | 175 | 122 | **2 121.00** |
| **GAZ125EM** | 125A | 55.0 kW | 3-pole | enclosed load-break switch | 210 | 175 | 122 | **2 352.00** |
| **GAZ160EM** | 160A | 55.0 kW | 3-pole | enclosed load-break switch | 210 | 175 | 122 | **2 583.00** |
| *Attachable **4th** pole to the above switches (see below)* | | | | | | | | |
| **Empty ABS plastic enclosures only** *(with red/yellow handle and extension shaft)* | | | | | | | | |
| **GAZ1** | | | | enclosure - supplied with handle and shaft | 160 | 100 | 97 | **522.90** |
| **GAZ2** | | | | enclosure - supplied with handle and shaft | 210 | 175 | 99 | **982.80** |
| **GAZ3** | | | | enclosure - supplied with handle and shaft | 280 | 220 | 170 | **1 890.00** |
| **Metal enclosed isolators** | | | | **IP65** | | | | |
| **GAZM series 16 - 160A** | | | | | | | | |
| **GAZM016EM** | 16A | 7.5 kW | 3-pole | enclosed load-break switch | 200 | 150 | 120 | **2 121.00** |
| **GAZM025EM** | 25A | 11.0 kW | 3-pole | enclosed load-break switch | 200 | 150 | 120 | **2 163.00** |
| **GAZM032EM** | 32A | 15.0 kW | 3-pole | enclosed load-break switch | 200 | 150 | 120 | **2 226.00** |
| **GAZM040EM** | 40A | 18.5 kW | 3-pole | enclosed load-break switch | 200 | 150 | 120 | **2 278.50** |
| **GAZM063EM** | 63A | 22.0 kW | 3-pole | enclosed load-break switch | 200 | 150 | 120 | **2 478.00** |
| **GAZM080EM** | 80A | 45.0 kW | 3-pole | enclosed load-break switch | 200 | 150 | 120 | **2 940.00** |
| **GAZM125EM** | 125A | 55.0 kW | 3-pole | enclosed load-break switch | 300 | 200 | 120 | **4 074.00** |
| **GAZM160EM** | 160A | 55.0 kW | 3-pole | enclosed load-break switch | 300 | 200 | 120 | **4 305.00** |
| **GLZ series 200 - 1000A** | | | | | | | | |
| **GLZM0200EM** | 200A | 110 kW | 3-pole | enclosed load-break switch | 400 | 300 | 220 | **5 691.00** |
| **GLZM0250EM** | 250A | 132 kW | 3-pole | enclosed load-break switch | 400 | 300 | 220 | **6 636.00** |
| **GLZM0315EM** | 315A | 140 kW | 3-pole | enclosed load-break switch | 400 | 300 | 220 | **7 161.00** |
| **GLZM0400EM** | 400A | 200 kW | 3-pole | enclosed load-break switch | 000 | 000 | 000 | **8 358.00** |
| **GLZM0630EM** | 630A | 355 kW | 3-pole | enclosed load-break switch | 000 | 000 | 000 | **9 912.00** |
| **GLZM0800EM** | 800A | 450 kW | 3-pole | enclosed load-break switch | 000 | 000 | 000 | **16 590.00** |
| **GLZM1000EM** | 1000A | 560 kW | 3-pole | enclosed load-break switch | 000 | 000 | 000 | **25 410.00** |
| *Add attachable **4th** pole to the above switches* | | | | | | | | |
| *Stainless steel (AISI 304) enclosed isolators available on request* | | | | | | | | |
| **Attachable 4th pole for above switches** | | | | | | | | |
| **GAX42040A** | 40A | 18.5 kW | | attachable 4th pole for above switches | GAZ/M016...40EM | | | **166.95** |
| **GAX42063SA** | 63A | 22.0 kW | | attachable 4th pole for above switches | GAZ/M063EM | | | **252.00** |
| **GAX42125A** | 125A | 55.0 kW | | attachable 4th pole for above switches | GAZ/M080...125EM | | | **393.75** |
| **GAX42160A** | 160A | 55.0 kW | | attachable 4th pole for above switches | GAZ/M160EM | | | **484.05** |
| **GAX41040A** | 40A | 18.5 kW | | early-make attachment for switches | GAZ/M016...40EM | | | **183.75** |
| **GAX41125A** | 125A | 55.0 kW | | early-make attachment for switches | GAZ/M080...125EM | | | **435.75** |
| **GLX420315** | 315A | 132 kW | | attachable 4th pole for above switches | GLZM0200...315EM | | | **1 060.50** |
| **GLX420400** | 400A | 200 kW | | attachable 4th pole for above switches | GLZM0400EM | | | **2 005.50** |
| **GLX420630** | 630A | 355 kW | | attachable 4th pole for above switches | GLZM0500...630EM | | | **2 824.50** |
| **GLX420800** | 800A | 450 kW | | attachable 4th pole for above switches | GLZM0800EM | | | **4 063.50** |
| **GLX421000** | 1000A | 560 kW | | attachable 4th pole for above switches | GLZM1000EM | | | **5 901.00** |



Above ZAR prices do not include VAT. E&OE

PLatinum

# PUSHBUTTONS AND SELECTORS



## Ø22MM METAL LPS

- Operators made of aluminium and zinc alloy
- High strength and impact resistance
- Screw panel fixing

## Ø30MM FLAT METAL LPF

- Operators made of aluminium and zinc alloy
- Actuator profile of only 4mm
- High strength and impact resistance
- Ergonomic and functional
- Screw panel fixing

## Ø22MM CHROMED PLASTIC LPC

- Operators made of polyamide with external chrome ring
- Snap-on fast installation of the mounting base and contact elements
- Panel fixing by threaded ring

Refer to Category D

Lovato electric

Scan the QR to download the brochure

# Variable frequency drives - Selection chart

| Series | | | ME300 Series | | | | | | | | | | | | MS300 Series | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | |  | | | | |  | | | | | | |  | | | | | | | |
| | | | single-phase | | | | | three-phase | | | | | | | single-phase | | | | | three-phase | | |
| Model number VFD-__ME/MS/E | | | 1A6 | 2A8 | 4A8 | 7A5 | 11A | 1A5 | 2A7 | 4A2 | 5A5 | 9A0 | 13A | 17A | 1A6 | 2A8 | 4A8 | 7A5 | 11A | 13A | 2A7 | 4A2 |
| Frame size | | | A | A | B | C | C | A | A | B | C | C | D | D | A | A | B | C | C | D | A | B |
| Max. applicable motor output | | kW | 0.2 | 0.4 | 0.75 | 1.5 | 2.2 | 0.4 | 0.75 | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 0.2 | 0.4 | 0.75 | 1.5 | 2.2 | 5.5 | 0.75 | 1.5 |
| **Output rating** | | | | | | | | | | | | | | | | | | | | | | |
| Rated output capacity | NORMAL DUTY heavy duty | kVA | 0.7 | 1.2 | 1.9 | 3.2 | 4.8 | 1.4 | 2.3 | 3.5 | 5 | 8 | 12 | 15.6 | 0.7 | 1.2 | 1.9 | 3.2 | 4.8 | 9.9 | 2.3 | 3.5 |
| Rated output current | | A | 1.8 | 3.2 | 5 | 8.5 | 12.5 | 1.8 | 3 | 4.6 | 6.5 | 10.5 | 15.7 | 20.5 | 1.8 | 3.2 | 5 | 8.5 | 12.5 | 15.7 | 3 | 4.6 |
| Output frequency | | Hz | 0.0 - 599Hz | | | | | | | | | | | | 0.0 - 599Hz | | | | | | | |
| Carrier frequency | | kHz | 2 - 15kHz | | | | | | | | | | | | 2 - 15 kHz (default 4) | | | | | | | |
| Rated output capacity | HEAVY DUTY super heavy duty | kVA | 0.6 | 1.1 | 1.8 | 2.9 | 4.2 | 1.1 | 2.1 | 3.2 | 4.2 | 6.9 | 9.9 | 13 | 0.6 | 1.1 | 1.8 | 2.9 | 4.2 | 9.9 | 2.1 | 3.2 |
| Rated output current | | A | 1.6 | 2.8 | 4.8 | 7.5 | 11 | 1.5 | 2.7 | 4.2 | 5.5 | 9 | 13 | 17 | 1.6 | 2.8 | 4.8 | 7.5 | 11 | 13 | 2.7 | 4.2 |
| Carrier frequency | | kHz | 2 - 15kHz | | | | | | | | | | | | 2 - 15kHz (default 4) | | | | | | | |
| **Input rating** | | | | | | | | | | | | | | | | | | | | | | |
| Input current (heavy duty) | | A | 3.4 | 5.9 | 10.1 | 15.8 | 23.1 | 1.7 | 3 | 4.6 | 6.1 | 9.9 | 14.3 | 18.7 | 3.4 | 5.9 | 10.1 | 15.8 | 23.1 | 14.3 | 3.7 | 5.8 |
| Input current (normal duty) | | A | 3.8 | 6.7 | 10.5 | 17.9 | 26.3 | 2 | 3.3 | 5.1 | 7.2 | 11.6 | 17.3 | 22.6 | 3.8 | 6.7 | 10.5 | 17.9 | 26.35 | 17.3 | 4.2 | 6.4 |
| Rated voltage | | V | 1-phase 200-240V (-15 to +10%) | | | | | 3-phase AC 380V - 480V (-15 to +10%) | | | | | | | 1-phase 200-240V (-15 to +10%) | | | 3-phase AC 380V - 480V 50/60Hz | | | | |
| Operating voltage range | | V | 170 - 265V | | | | | 323 - 528V | | | | | | | 170 - 264V | | | | | | | |
| Frequency range | | Hz | 47 - 63Hz ± 5% | | | | | | | | | | | | 47 - 63Hz ± 5% | | | | | | | |
| Cooling method | | | convection | | | fan | | convection | | | fan cooling | | | | conv. | | fan cooling | | | fan cooling | | |
| Braking chopper | | | built-in | | | | | | | | | | | | built-in | | | | | | | |
| DC reactor | | | optional | | | | | | | | | | | | optional | | | | | | | |
| Control method | | | V/F, SVC | | | | | | | | | | | | V/F, SVC, | | | | | | | |
| Starting torque | | % | up to 150% at 3 Hz including auto-torque/slip | | | | | | | | | | | | up to 150% at 3.0Hz including auto-torque/slip compensation | | | | | | | |
| Max. output frequency | | Hz | 0.00–599.00 Hz | | | | | | | | | | | | 0.00–599.00 Hz | | | | | | | |
| Frequency output accuracy | | | – | | | | | | | | | | | | – | | | | | | | |
| Frequency setting resolution | | Hz | 0.01Hz | | | | | | | | | | | | 0.01Hz | | | | | | | |
| Overload tolerance *(normal duty, heavy duty)* | | | 120% of rated output current for 60 seconds; 150% for 3 seconds | | | | | | | | | | | | 120% of rated output current for 60 seconds; 150% for 3 seconds | | | | | | | |
| Overload tolerance *(heavy duty, super heavy duty)* | | | 150% of rated output current for 60 seconds; 200% for 3 seconds | | | | | | | | | | | | 150% of rated output current for 60 seconds; 200% for 3 seconds | | | | | | | |
| Frequency setting signal | | | 0 - 10V / 4(0)-20mA, PWM pulse width input (1kHz), pulse input (10kHz) | | | | | | | | | | | | 0 – +10 V / -10 V – +10 V, 4 - 20 mA / 0 ~ +10 V, 1 pulse input (33 kHz), 1 pulse output (33 kHz) | | | | | | | |
| Accel./decel. Time | | | 0.1 - 600 sec. *(2 settings accel/decel time)* | | | | | | | | | | | | 0.1 - 600 sec. *(2 independent settings accel/decel time)* | | | | | | | |
| Main control functions | | | 2 independent motor parameter settings, fast run, deceleration energy back (DEB) function, fast deceleration function, selectable master and auxiliary frequency source, momentary power loss ride through, speed search, over-torque detection, 16-step speed accel/decel timer, S-curve accel/decel, JOG frequency, upper/lower limits frequency ref, DC injection braking at start and stop, PID control, simple positioning function, Modbus integrated as standard | | | | | | | | | | | | Multiple motor switches (max. 4 independent motor parameter settings), fast run, deceleration energy back (DEB) function, wobble frequency function, fast deceleration function, master and auxiliary frequency source selectable, momentary power loss ride thru, speed search, over-torque detection, 16-step speed (max.), accel/decel time switch, S-curve accel/decel, 3-wire sequence, JOG frequency, upper/lower limits for frequency reference, DC injection braking at start and stop, PID control, built-in PLC (2k steps), simple positioning function, Modbus is integrated as standard | | | | | | | |
| Fan control | | | fan control | | | | | | | | | | | | fan control | | | | | | | |
| Motor protection | | | electronic thermal relay and phase failure protection | | | | | | | | | | | | over/under-volt/current, external fault, overload, IGBT short circuit, PTC | | | | | | | |
| Over-current protection | | | yes | | | | | | | | | | | | yes | | | | | | | |
| Over-voltage protection | | | yes | | | | | | | | | | | | yes | | | | | | | |
| Over-temperature protection | | | yes | | | | | | | | | | | | yes | | | | | | | |
| Stall prevention | | | Stall prevention during acceleration, deceleration and running independently | | | | | | | | | | | | Stall prevention during acceleration, deceleration and running independently | | | | | | | |
| Re-start after momentary power off | | | yes | | | | | | | | | | | | yes | | | | | | | |
| Ground current protection | | | yes | | | | | | | | | | | | yes | | | | | | | |
| EMI filter | | | no | | | | | | | | | | | | no | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| Dimensions (H) x (W) x (D) | H | mm | 128 | 128 | 142 | 157 | | 128 | 128 | 142 | 157 | | 207 | | 128 | 128 | 142 | 157 | | 128 | 128 | 142 |
| | W | mm | 68 | 68 | 72 | 87 | | 68 | 68 | 72 | 87 | | 109 | | 68 | 68 | 72 | 87 | | 68 | 68 | 72 |
| | D | mm | 78 | 107 | 127 | 136 | | 113 | 127 | 127 | 136 | | 138 | | 96 | 143 | 143 | 179 | | 129 | 143 | 143 |
| Weight | | kg | 0.4 | 0.5 | 0.8 | 1 | | 0.55 | 0.7 | 0.8 | 1 | | 2 | | 0.65 | 0.95 | 0.95 | 1.24 | | 0.76 | 0.81 | 1 |
| Optional accessories | | | DIN-rail mount adaptor | | | | | | | | | | | | DeviceNet, Ethernet/IP, Profibus DP, Modbus TCP, CANopen, Ethercat communication cards, external 24 VDC power supply card, DIN-rail mount adaptor, cable for remote mounting of digital keypad | | | | | | | |

| MS300 Series (IP66) | C2000+ Series |
|---|---|
|  |  |

| three-phase | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5A5 | 9A0 | 13A | 17A | 25A | 32A | 38A | 45A | 040 | 055 | 075 | 110 | 150 | 185 | 220 | 300 | 370 | 450 | 550 | 750 | 900 | 1100 | 1320 | 1600 | 1850 | 2000 | 2200 | 2500 | 2800 | 3150 | 3550 | 4000 | 4500 | 5000 | 5600 | | | | | | | | |
| C | C | D | D | E | E | F | F | A | A | B | B | B | C | C | C | D | D | D | D | E | E | F | F | G | G | G | G | H | H | H | H | H | H | H | | | | | | | | |
| 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 4 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 | 132 | 160 | 185 | 200 | 220 | 250 | 280 | 315 | 355 | 400 | 450 | 500 | 560 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 8 | 9.9 | 13 | 19.1 | 24.4 | 29 | 34.4 | 8.4 | 10 | 14 | 19 | 25 | 30 | 36 | 48 | 58 | 73 | 88 | 120 | 143 | 175 | 207 | 247 | 295 | 315 | 367 | 383 | 438 | 491 | 544 | 613 | 690 | 741 | 872 | | | | | | | | |
| 6.5 | 10.5 | 15.7 | 20.5 | 28 | 36 | 41.5 | 49 | 10.5 | 12 | 18 | 24 | 32 | 38 | 45 | 60 | 73 | 91 | 110 | 150 | 180 | 220 | 260 | 310 | 370 | 395 | 460 | 481 | 550 | 616 | 683 | 770 | 866 | 930 | 1094 | | | | | | | | |
| 0.10 - 599.0 Hz | | | | | | | | Heavy duty: 0,1 - 599 Hz; super heavy duty: 0,1 - 599 Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 - 15 kHz | | | | | | | | 2 - 15kHz (8kHz) | | | | | 2 - 10kHz (6kHz) | | | | | | 2 - 10kHz (6kHz) | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.2 | 6.9 | 9.9 | 13 | 19.1 | 24.4 | 29 | 34.3 | 7.2 | 8.4 | 9.6 | 14 | 19 | 25 | 30 | 36 | 48 | 58 | 73 | 88 | 120 | 143 | 175 | 207 | 247 | 247 | 295 | 315 | 366 | 438 | 491 | 544 | 544 | 690 | 741 | | | | | | | | |
| 5.5 | 9 | 13 | 17 | 25 | 32 | 38 | 45 | 9 | 10.5 | 12 | 18 | 24 | 32 | 38 | 45 | 60 | 73 | 91 | 110 | 1510 | 180 | 220 | 260 | 310 | 310 | 370 | 395 | 460 | 550 | 616 | 683 | 683 | 866 | 930 | | | | | | | | |
| 2 - 15kHz (default 4) | | | | | | | | 2 - 15kHz (4kHz) | | | | | 2 - 10kHz (4kHz) | | | | | | 2 - 9kHz (4kHz) | | | | | | | | | 2 - 9kHz (3kHz) | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6.1 | 9.9 | 9.9 | 13 | 19.1 | 24.4 | 29 | 34.3 | 14.5 | 16 | 19 | 25 | 33 | 38 | 45 | 60 | 70 | 96 | 108 | 149 | 159 | 197 | 228 | 285 | 361 | 300 | 380 | 390 | 469 | 527 | 594 | 590 | 625 | 866 | 930 | | | | | | | | |
| 7.2 | 11.6 | 13 | 17 | 25 | 32 | 38 | 45 | 15.5 | 17 | 20 | 26 | 35 | 40 | 47 | 63 | 74 | 101 | 114 | 157 | 167 | 207 | 240 | 300 | 380 | 397 | 400 | 447 | 494 | 555 | 625 | 770 | 866 | 930 | 1094 | | | | | | | | |
| 3-phase AC 380V ÷ 480V 50/60Hz | | | | | | | | 3-phase AC 380V ÷ 480V (-15% ÷ +10%), 50/60Hz *(also available in 500-690V versions)* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 342 - 528V | | | | | | | | 323 - 528 VAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 47 - 63Hz ± 5% | | | | | | | | 47 - 63 Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| convection | fan cooling | | | | | | | fan cooling | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| built-in | | | | | | | | built -in | | | | | optional | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| optional | | | | | | | | optional | | | | | built-in | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SPWM (V/F or sensorless vector control) | | | | | | | | 1: V/F, 2: SVC, 3: VF+PG, 4: FOC+PG, TQC+PG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| up to 150% at 3.0Hz | | | | | | | | up to 150% or above at 0.5Hz; under FOC+PG mode can reach up to 150% at 0Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.1 - 599.0 Hz | | | | | | | | Heavy Duty: 0,1 - 599 Hz; Super Heavy Duty: 0,1 - 599 Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | | | | | | | | digital command: ± 0.01%, -10°C ÷ +40°C, analogue command: ± 0.1%, 25 ±10°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.01Hz | | | | | | | | digital command: 0.1Hz, analogue command: 0.03/60Hz (±11 bits) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 150% of rated output current for 60 seconds | | | | | | | | 150% of rated output current: 1 minute for every 5 minutes or 180% of rated output current: 3 seconds for every 30 seconds (heavy duty default) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 150% of rated current for 1 minute | | | | | | | | 150% of rated output current: 1 minute for every 5 minutes or 200% of rated output current: 3 seconds for every 30 seconds (super heavy duty) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Potentiometer 5 kΩ / 0.5 W, 0 to +10 VDC, 4 to 20 mA, RS-485 interface | | | | | | | | '+10V ÷ -10, 0 ÷ +10V, 4-20mA, pulse input | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.1 - 600 sec. (2 independent settings accel/decel time) | | | | | | | | 0,00 ÷ 600,00 / 0,0 ÷ 6000,0 seconds | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Multiple motor switches *(max. 4 independent motor parameter settings)*, fast run, deceleration energy back (DEB) function, wobble frequency function, fast deceleration function, master and auxiliary frequency source selectable, momentary power loss ride thru, speed search, over-torque detection, 16-step speed (max.), accel/decel time switch, S-curve accel/decel, 3-wire sequence, JOG frequency, upper/lower limits for frequency reference, DC injection braking at start and stop, PID control, built-in PLC (2k steps), simple positioning function, Modbus is integrated as standard | | | | | | | | torque control, speed/torque control switching, feed forward control, zero-servo control, momentary power loss ride through, speed search, over-torque detection, torque limit, 16-step speed (including master speed), accel/decel time switch, S-curve accel/decel, 3 wire sequence, auto-tuning *(rotational, stationary)*, dwell, slip compensation, torque compensation, skip frequency, frequency upper/lower limit settings, DC injection braking at start/stop, high slip braking, PID control (with sleep function), energy saving control, Modbus communication (RS-485 RJ45) max. 115.2kbps, fault restart and parameter copy. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fan control | | | | | | | | ON/OFF switch | | | | | PWM control | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| over/under-volt/current, external fault, overload, IGBT short circuit, PTC | | | | | | | | electronic thermal relay protection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| yes | | | | | | | | thermal current forces 240% of the over-current protection, current clamp: normal duty 170 - 175%; heavy duty: 180 - 185% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| yes | | | | | | | | drive will stop when DC-BUS voltage exceeds 820V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| yes | | | | | | | | built-in temperature sensor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| stall prevention during acceleration, deceleration and running independently | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| yes | | | | | | | | parameter setting can be up to 20 seconds | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| yes | | | | | | | | ground current protection level is 50% of rated current of the AC motor drive | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| no | | | | | | | | built-in | | | | | | | | optional | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 157 | 207 | 250 | 300 | 250 | 320 | 400 | 550 | | | | | | | | | | | | 590 | 800 | 1000 | | 1435 | | | | | | | | | | | | | | | | | | | |
| 87 | 109 | 130 | 175 | 130 | 190 | 250 | 280 | | | | | | | | | | | | 370 | 420 | 500 | | 700 | | | | | | | | | | | | | | | | | | | |
| 152 | 154 | 185 | 192 | 170 | 190 | 210 | 255 | | | | | | | | | | | | | 300 | 397 | | 398 | | | | | | | | | | | | | | | | | | | |
| 1.24 | 2.07 | 3.97 | 6.25 | 2.6 ±0.3 | 5.4 ±1 | 9.8 ±1.5 | 27 ±1.5 | | | | | 38.5 ±1.5 | | | | | | | 64.8 ±1.5 | 86.5 ±1.5 | 134 ±4 | | 228 | | | | | | | | | | | | | | | | | | | |
| DeviceNet, Ethernet/IP, Profibus DP, Modbus TCP, CANopen, Ethercat communication cards, external 24 VDC power supply card, DIN-rail mount adaptor, cable for remote mounting of digital keypad | | | | Digital keypad and panel mount adaptor, I/O extension cards, relay extension cards, PG encoder cards, EtherNet/IP - Modbus TCP -PROFIBUS-DP - DeviceNet - CANopen, Ethercat, Profinet communication cards | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Conveyor | Fan | Machine Tool | Motors

**ME300 / MS300 series -** Vector control compact drive

ME300 / MS300 range of compact vector controlled drives offer standard essential built-in functionality including multi-pump control, built-in brake chopper, RS-485 (Modbus). For both IM and PM motors.

**Common features include:**

- Built-in PID feedback control
- Easy to navigate keypad with LED display and potentiometer
- Pre-configured parameters for most commonly used applications
- High-efficiency cooling and compact design *(for side-by-side installation)*
- Multi motor control for operating more than one motor from the same drive
- Multiple digital outputs MS300 *(1x relay, 2x transistor)* ME300 *(1x relay, 1x transistor)*
- Dual rating chart for ME / MS300 drives - normal and heavy duty applications *(see **Annex-4**)*
- Overload capabilities: 150% of rated output current for 60 sec, 200% for 3 seconds *(heavy duty)*
- Overcurrent, overvoltage, overload, over-temperature and phase failure protection incorporated
- Enhanced PCB coatings ***(IEC 60721-3-3 class 3C2 standard)*** ensures drive operation in harsh environments
- Default drive rating: Heavy duty



VFD1A6ME21ANN



VFD4A8ME21ANN





VFD4A8MS21ANS



VFD32AMS43ANS

| type | motor rating | rated current | description | frame size | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **ME300 series** - Basic ultra-compact AC motor drives - *(VF/SVC open-loop control)* | | | | | | | | |
| • High starting torque *(up to 150% rated starting torque at 3 Hz)* | | | | | | | | |
| • Supports side-by-side installation, with operating temp -20 to +40ºC | | | | | | | | |
| • Supports high speed pulse and PWM (10kHz) frequency input signals | | | | | | | | |
| • Ultra compact frame sizes, up to 60% reduction compared to previous VFD-EL | | | | | | | | |
| • Front fascia 4 digit LED display, frequency adjustment knob and direction - run/stop function keys | | | | | | | | |
| **Single-phase input 200-240V 50/60Hz** *(three-phase output voltage 230VAC)* | | | | | | | | |
| **VFD1A6ME21ANN** | 200 W | 1.6A | 1-ph AC motor drive | A1 | 128 | 68 | 78 | **4 179.00** |
| **VFD2A8ME21ANN** | 400 W | 2.8A | 1-ph AC motor drive | A3 | 128 | 68 | 107 | **4 273.50** |
| **VFD4A8ME21ANN** | 750 W | 4.8A | 1-ph AC motor drive | B2 | 142 | 72 | 127 | **4 452.00** |
| **VFD7A5ME21ANN** | 1.5 kW | 7.5A | 1-ph AC motor drive | C1 | 157 | 87 | 136 | **5 890.50** |
| **VFD11AME21ANN** | 2.2 kW | 11A | 1-ph AC motor drive | C1 | 157 | 87 | 136 | **6 804.00** |
| **Three-phase input 380-480V 50/60Hz** | | | | | | | | |
| **VFD1A5ME43ANN** | 400 W | 1.5A | 3-ph AC motor drive | A4 | 128 | 68 | 113 | **5 964.00** |
| **VFD2A7ME43ANN** | 750 W | 2.7A | 3-ph AC motor drive | A6 | 128 | 68 | 127 | **6 237.00** |
| **VFD4A2ME43ANN** | 1.5 kW | 4.2A | 3-ph AC motor drive | B1 | 142 | 72 | 127 | **6 793.50** |
| **VFD5A5ME43ANN** | 2.2 kW | 5.5A | 3-ph AC motor drive | C1 | 157 | 87 | 136 | **8 074.50** |
| **VFD9A0ME43ANN** | 3.7 kW | 9.0A | 3-ph AC motor drive | C1 | 157 | 87 | 136 | **9 229.50** |
| **VFD13AME43ANN** | 5.5 kW | 13A | 3-ph AC motor drive | D1 | 207 | 109 | 138 | **11 235.00** |
| **VFD17AME43ANN** | 7.5 kW | 17A | 3-ph AC motor drive | D1 | 207 | 109 | 138 | **13 440.00** |
| **MS300 series** - Standard compact AC motor drives *(VF/SVC open-loop control)* | | | | | | | | |
| Essential functions built-in as standard includes: PLC for simple programming needs, communication slots for various communication cards, support for both IM and PM motor controls, STO function ensuring worry-free operation and protection. | | | | | | | | |
| • Built-in PLC functionality *(2K steps)* | | | | | | | | |
| • Supports high speed pulse (33kHz) frequency input signal | | | | | | | | |
| • High starting torque *(up to 200% rated starting torque at 0.5 Hz)* | | | | | | | | |
| • Built-in slot for optional communication modules *(see accessories for ME/MS drives)* | | | | | | | | |
| • Integrated Safe Torque Off (STO) SIL2/PLd compliance, offers high safety machine stop | | | | | | | | |
| • USB port for simplicity of data uploads and downloads *(supports PC program via USB)* | | | | | | | | |
| • Removable 5 digit LED keypad with function keys and frequency adjustment knob | | | | | | | | |
| **Single-phase input 200-240V 50/60Hz** *(three-phase output voltage 230VAC)* | | | | | | | | |
| **VFD1A6MS21ANS** | 200 W | 1.6A | 1-ph AC motor drive | A1 | 128 | 68 | 96 | **5 848.50** |
| **VFD2A8MS21ANS** | 400 W | 2.8A | 1-ph AC motor drive | A3 | 128 | 68 | 125 | **5 932.50** |
| **VFD4A8MS21ANS** | 750 W | 4.8A | 1-ph AC motor drive | B2 | 142 | 72 | 143 | **6 405.00** |
| **VFD7A5MS21ANS** | 1.5 kW | 7.5A | 1-ph AC motor drive | C1 | 157 | 87 | 152 | **7 413.00** |
| **VFD11AMS21ANS** | 2.2 kW | 11A | 1-ph AC motor drive | C1 | 157 | 87 | 152 | **10 027.50** |
| **Three-phase input 380-480V 50/60Hz** | | | | | | | | |
| **VFD1A5MS43ANS** | 400 W | 1.5A | 3-ph AC motor drive | A4 | 128 | 68 | 129 | **7 350.00** |
| **VFD2A7MS43ANS** | 750 W | 2.7A | 3-ph AC motor drive | A5 | 128 | 68 | 143 | **7 528.50** |
| **VFD4A2MS43ANS** | 1.5 kW | 4.2A | 3-ph AC motor drive | B1 | 142 | 72 | 143 | **8 179.50** |
| **VFD5A5MS43ANS** | 2.2 kW | 5.5A | 3-ph AC motor drive | C1 | 157 | 87 | 152 | **9 397.50** |
| **VFD9A0MS43ANS** | 3.7 kW | 9.0A | 3-ph AC motor drive | C1 | 157 | 87 | 152 | **10 920.00** |
| **VFD13AMS43ANS** | 5.5 kW | 13A | 3-ph AC motor drive | D1 | 207 | 109 | 154 | **14 490.00** |
| **VFD17AMS43ANS** | 7.5 kW | 17A | 3-ph AC motor drive | D1 | 207 | 109 | 154 | **17 325.00** |
| **VFD25AMS43ANS** | 11 kW | 25A | 3-ph AC motor drive | E1 | 250 | 130 | 185 | **20 370.00** |
| **VFD32AMS43ANS** | 15 kW | 32A | 3-ph AC motor drive | E1 | 250 | 130 | 185 | **26 250.00** |
| **VFD38AMS43ANS** | 18.5 kW | 38A | 3-ph AC motor drive | F1 | 300 | 175 | 192 | **31 815.00** |
| **VFD45AMS43ANS** | 22 kW | 45A | 3-ph AC motor drive | F1 | 300 | 175 | 192 | **37 275.00** |

*See accessories for ME/MS drives*



Above ZAR prices do not include VAT. E&OE

Conveyor | Fan | Machine Tool | Motors



VFD3A0MS53ANS

**MS300 series -** Vector control compact drive

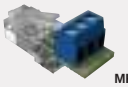
MS300 range of compact vector controlled drives offer standard essential built-in functionality including - multi-pump control, built-in brake chopper, RS-485 (Modbus) supporting both IM and PM motors.

- High starting torque *(up to 200% rated starting torque at 0.5 Hz)*
- Overload capabilities: 150% of rated output current for 60 seconds, 200% for 3 seconds
- Integrated Safe Torque Off (STO) SIL2/PLd compliance offers high-safety machine stop
- Built-in PLC functionality *(2K steps),* supports high-speed pulse *(33kHz)* frequency input signal
- Default drive rating: Heavy duty *(break resistor chart, see **Annex-3**)*

| type | motor rating | rated current | description | frame size | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **MS300 series - 575V** compact AC motor drives *(VF/SVC open-loop control)* | | | | | | | | |
| Modbus Communications Built-in. Options for CANopen, Profinet ModbusTCP, Ethernet/IP and EtherCAT communications | | | | | | | | |
| **Three-phase input 525-600V 50/60Hz** | | | | | | | | |
| **VFD1A7MS53ANS** | 750 W | 1.7A | 3-ph AC motor drive | A5 | 128 | 68 | 143 | **11 550.00** |
| **VFD3A0MS53ANS** | 1.5 kW | 3.0A | 3-ph AC motor drive | B1 | 142 | 72 | 143 | **13 335.00** |
| **VFD4A2MS53ANS** | 2.2 kW | 4.2A | 3-ph AC motor drive | C1 | 157 | 87 | 152 | **15 225.00** |
| **VFD6A6MS53ANS** | 3.7 kW | 6.6A | 3-ph AC motor drive | C1 | 157 | 87 | 152 | **19 740.00** |
| **VFD9A9MS53ANS** | 5.5 kW | 9.9A | 3-ph AC motor drive | D1 | 207 | 109 | 154 | **25 830.00** |
| **VFD12AMS53ANS** | 7.5 kW | 12.2A | 3-ph AC motor drive | D1 | 207 | 109 | 154 | **29 190.00** |
| **MS300 series IP66 -** AC motor drives *(VF/SVC open-loop control)* | | | | | | | | |
| IP66 / NEMA4X water-proof and dust-proof design enables stable operation under harsh environments. Quick installation without a control cabinet saves cost. | | | | | | | | |
| **Single-phase input 200-240V 50/60Hz** *(three-phase output voltage 230 VAC)* | | | | | | | | |
| **VFD2A8MS21MNS** | 400 W | 2.8A | 1-ph AC motor drive | A1 | 230 | 160 | 151 | **11 865.00** |
| **VFD4A8MS21MNS** | 750 W | 4.8A | 1-ph AC motor drive | A1 | 230 | 160 | 151 | **12 810.00** |
| **VFD7A5MS21MNS** | 1.5 kW | 7.5A | 1-ph AC motor drive | A2 | 230 | 160 | 167 | **15 330.00** |
| **VFD11AMS21MNS** | 2.2 kW | 11A | 1-ph AC motor drive | B | 280 | 175 | 193 | **20 055.00** |
| **Three-phase input 380-480V 50/60Hz** | | | | | | | | |
| **VFD1A5MS43MNS** | 400 W | 1.5A | 3-ph AC motor drive | A1 | 230 | 160 | 151 | **15 225.00** |
| **VFD2A7MS43MNS** | 750 W | 2.7A | 3-ph AC motor drive | A1 | 230 | 160 | 151 | **15 540.00** |
| **VFD4A2MS43MNS** | 1.5 kW | 4.2A | 3-ph AC motor drive | A2 | 230 | 160 | 167 | **16 905.00** |
| **VFD5A5MS43MNS** | 2.2 kW | 5.5A | 3-ph AC motor drive | A3 | 230 | 160 | 190 | **19 425.00** |
| **VFD9A0MS43MNS** | 3.7 kW | 9.0A | 3-ph AC motor drive | B | 280 | 175 | 193 | **22 470.00** |
| **VFD13AMS43MNS** | 5.5 kW | 13A | 3-ph AC motor drive | C | 300 | 195 | 193 | **29 715.00** |
| **VFD17AMS43MNS** | 7.5 kW | 17A | 3-ph AC motor drive | C | 300 | 195 | 193 | **35 595.00** |



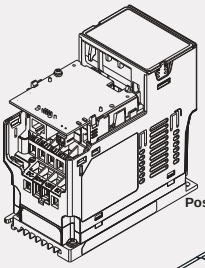
VFD2A8MS21MNS



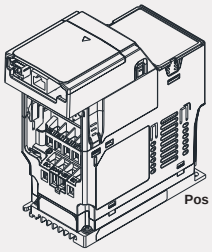
MKM-HUB01



IFD6500



Pos 1



Pos 2

| **Accessories for ME/MS300 series drives** | | | | |
|---|---|---|---|---|
| **MKM-DRB** | DIN-rail | mounting kit for frame A and B | ME/MS300 drives | **158.55** |
| **MKM-DRC** | DIN-rail | mounting kit for frame C | ME/MS300 drives | **199.50** |
| **EMM-BPS01**❖ | 24 VDC | external DC power supply card | for MS300 drives | **4 252.50** |
| **KPC-CC01**❖ | keypad | panel mount LCD | ME/MS300 drives | **2 026.50** |
| **KPMS-LE01** | keypad | removable LED keypad | for MS300 drives | **514.50** |
| **MKM-HUB01** | adaptor | daisy chain - RJ-45 to screw connector | ME/MS300 drives | **266.70** |
| **EG1010A** | cable | to remotely mount keypad 1 met | for MS300 drives | **425.25** |
| **EG2010A** | cable | to remotely mount keypad 2 met | for MS300 drives | **493.50** |
| **EG3010A** | cable | to remotely mount keypad 3 met | for MS300 drives | **561.75** |
| **UC-PRG030-02A** | USB (B to A) | programming cable PC-VFD 3 met | for MS300 drives | **254.10** |
| **IFD6500** | RS-485 to USB | converter *(no ext. power supply required)* | | **1 134.00** |

❖ *Applicable to MS300 IP66*

**Fieldbus modules for MS series drives**

| | | | | | |
|---|---|---|---|---|---|
| **CMM-EIP02** | Ethernet/IP | Modbus TCP plug-in com. card | 1 port | for MS300 drives | **1 711.50** |
| **CMM-EIP03** | Ethernet/IP | Modbus TCP plug-in com. card | 2 port | for MS300 drives | **1 711.50** |
| **CMM-EC02** | EtherCAT | plug-in communication card | 2 port | for MS300 drives | **2 467.50** |
| **CMM-PN02** | Profinet | plug-in communication card | 2 port | for MS300 drives | **3 423.00** |
| **CMM-COP02** | CANopen | plug-in communication card | 2 port | for MS300 drives | **911.40** |

***Note:* CBM-CCxxA** *required when using above communication card*

| **Cables for above communication cards** | | | | frame | Pos.✱ | |
|---|---|---|---|---|---|---|
| **CBM-CL01A** | cable for | CMM-DN/EIP/PD/COP | 145 mm | A,B | 1 | **452.55** |
| | | CMM-EC02 | | A | 2 | |
| **CBM-CL02A** | cable for | CMM-DN/EIP/PD/COP | 250 mm | C,D,E,F | 1 | **500.85** |
| | | CMM-EC02 | | B,C,D | 2 | |
| **CBM-CC01A** | cable for | CMM-DN/EIP/PD/COP | 145 mm | A | 2 | **548.10** |
| **CBM-CC02A** | cable for | CMM-DN/EIP/PD/COP | 250 mm | B,C,D | 2 | **596.40** |

✱ ***Pos 1*** *- compact mounting, communication card installed back to front*

✱ ***Pos 2*** *- right side up mounting, with extra additional cover (adds to frame size depth)*

Milling Machine | Cranes | Compressor | Motors

**C2000+ series** - High performance vector control drive

C2000+ series features precise speed, torque and position control, suitable for both sensor and sensorless types of synchronous and asynchronous motors. With a higher overload capacity the C2000+ provides the best performance and stability for a variety of heavy duty and constant torque applications in refrigeration, mining, crains/hoists, crushers, compressors etc.

- Speed/torque/position control mode
- Accepts various PG *(encoder)*, I/O extension, relay extension and communication cards
- Integrated Safe Torque Off *(STO)* SIL2/PLd compliance, offers high safety machine stop
- Dual rating design - heavy duty / super heavy duty. Built-in PLC function *(10k steps capacity)*
- Overload capabilities: C2000+ 150% of rated output current for 1min, 180% for 3sec *(heavy duty)*
- Enhanced PCB coatings ***(IEC 60721-3-3 class 3C3 standard)*** ensures drive operation in harsh environments
- Built-in Modbus and CANopen (up to 30kW) high-speed communication interface *(optional cards for others)*
- Default drive rating: Heavy duty *(break resistor chart, see **Annex-3**)*



VFD150C4EA-21



VFD220C4EA-21



VFD370C63B-21

| type | motor rating 400V | rated current | description | frame size | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **C2000+ -** Three-phase input **380-480V 50/60Hz** | | | | | | | | |
| **VFD007C4EA-21** | 0.75 kW | 3.0A | 3-ph AC motor drive | A | 250 | 130 | 170 | **15 120.00** |
| **VFD015C4EA-21** | 1.5 kW | 4.0A | 3-ph AC motor drive | A | 250 | 130 | 170 | **16 275.00** |
| **VFD022C4EA-21** | 2.2 kW | 6.0A | 3-ph AC motor drive | A | 250 | 130 | 170 | **17 850.00** |
| **VFD040C4EA-21** | 4.0 kW | 10.5A | 3-ph AC motor drive | A | 250 | 130 | 170 | **23 100.00** |
| **VFD055C4EA-21** | 5.5 kW | 12A | 3-ph AC motor drive | A | 250 | 130 | 170 | **24 045.00** |
| **VFD075C4EA-21** | 7.5 kW | 18A | 3-ph AC motor drive | B | 320 | 190 | 190 | **26 985.00** |
| **VFD110C4EA-21** | 11 kW | 24A | 3-ph AC motor drive | B | 320 | 190 | 190 | **31 395.00** |
| **VFD150C4EA-21** | 15 kW | 32A | 3-ph AC motor drive | B | 320 | 190 | 190 | **39 060.00** |
| **VFD185C4EA-21** | 18.5 kW | 38A | 3-ph AC motor drive | C | 400 | 250 | 210 | **48 510.00** |
| **VFD220C4EA-21** | 22 kW | 45A | 3-ph AC motor drive | C | 400 | 250 | 210 | **54 705.00** |
| **VFD300C4EA-21** | 30 kW | 60A | 3-ph AC motor drive | C | 400 | 250 | 210 | **62 685.00** |
| **VFD370C43S-00** | 37 kW | 73A | 3-ph AC motor drive | D0-1 | 500 | 280 | 255 | **58 065.00** |
| **VFD450C43S-00** | 45 kW | 91A | 3-ph AC motor drive | D0-1 | 500 | 280 | 255 | **66 465.00** |
| **VFD550C43A-00** | 55 kW | 110A | 3-ph AC motor drive | D1 | 550 | 330 | 275 | **88 725.00** |
| **VFD750C43A-00** | 75 kW | 150A | 3-ph AC motor drive | D1 | 550 | 330 | 275 | **122 850.00** |
| **VFD900C43A-00** | 90 kW | 180A | 3-ph AC motor drive | E1 | 589 | 370 | 300 | **142 800.00** |
| **VFD1100C43A-00** | 110 kW | 220A | 3-ph AC motor drive | E1 | 589 | 370 | 300 | **164 850.00** |
| **VFD1320C43A-00** | 132 kW | 260A | 3-ph AC motor drive | F1 | 800 | 420 | 300 | **189 000.00** |
| **VFD1600C43A-00** | 160 kW | 310A | 3-ph AC motor drive | F1 | 800 | 420 | 300 | **224 700.00** |
| **VFD1850C43A-00** | 185 kW | 370A | 3-ph AC motor drive | G1 | 1000 | 500 | 397 | **298 200.00** |
| **VFD2000C43A-00** | 200 kW | 395A | 3-ph AC motor drive | G1 | 1000 | 500 | 397 | **308 700.00** |
| **VFD2200C43A-00** | 220 kW | 460A | 3-ph AC motor drive | G1 | 1000 | 500 | 397 | **362 250.00** |
| **VFD2500C43A-00** | 250 kW | 481A | 3-ph AC motor drive | G1 | 1000 | 500 | 397 | **384 300.00** |
| **VFD2800C43A-00** | 280 kW | 550A | 3-ph AC motor drive | H1 | 1435 | 700 | 398 | **484 050.00** |
| **VFD3150C43A-00** | 315 kW | 616A | 3-ph AC motor drive | H1 | 1435 | 700 | 398 | **528 150.00** |
| **VFD3550C43A-00** | 355 kW | 683A | 3-ph AC motor drive | H1 | 1435 | 700 | 398 | **564 900.00** |
| **VFD4000C43A-00** | 400 kW | 770A | 3-ph AC motor drive | H1 | 1435 | 700 | 398 | **611 100.00** |
| **VFD4500C43A-00** | 450 kW | 866A | 3-ph AC motor drive | H1 | 1435 | 700 | 398 | **715 050.00** |
| **VFD5000C43A-00** | 500 kW | 930A | 3-ph AC motor drive | H1 | 1435 | 700 | 398 | **775 950.00** |
| **VFD5600C43A-00** | 560 kW | 1094A | 3-ph AC motor drive | H1 | 1435 | 700 | 398 | **908 250.00** |

*Frames A, B, C - built-in braking chopper, EMI filter and CANopen communication*
*Frames D,E,F,G,H - DC reactor built-in*

| type | motor rating at 525V | rated current | description | frame size | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **C2000 -** Three-phase input **525-600V** *(up to 15kW)* **525-690V** *(from 22kW)* **50/60Hz** | | | | | | | | |
| **VFD037C53A-21** | 3.7 kW | 6.7A | 3-ph AC motor drive | A | 250 | 130 | 170 | **18 165.00** |
| **VFD055C53A-21** | 5.5 kW | 9.9A | 3-ph AC motor drive | B | 320 | 190 | 190 | **25 095.00** |
| **VFD075C53A-21** | 7.5 kW | 12.1A | 3-ph AC motor drive | B | 320 | 190 | 190 | **28 875.00** |
| **VFD110C53A-21** | 11 kW | 18.7A | 3-ph AC motor drive | B | 320 | 190 | 190 | **36 540.00** |
| **VFD150C53A-21** | 15 kW | 24.2A | 3-ph AC motor drive | B | 320 | 190 | 190 | **45 570.00** |
| **VFD300C63B-21** | 22 kW | 36A | 3-ph AC motor drive | C | 400 | 250 | 210 | **86 835.00** |
| **VFD370C63B-21** | 30 kW | 45A | 3-ph AC motor drive | C | 400 | 250 | 210 | **87 150.00** |
| **VFD450C63B-00** | 37 kW | 54A | 3-ph AC motor drive | D1 | 550 | 330 | 275 | **108 150.00** |
| **VFD550C63B-00** | 45 kW | 67A | 3-ph AC motor drive | D1 | 550 | 330 | 275 | **119 700.00** |
| **VFD750C63B-00** | 55 kW | 86A | 3-ph AC motor drive | E1 | 589 | 370 | 300 | **155 400.00** |
| **VFD900C63B-00** | 75 kW | 104A | 3-ph AC motor drive | E1 | 589 | 370 | 300 | **171 150.00** |
| **VFD1320C63B-00** | 90 kW | 150A | 3-ph AC motor drive | E1 | 589 | 370 | 300 | **243 600.00** |
| **VFD1600C63B-00** | 132 kW | 180A | 3-ph AC motor drive | F1 | 800 | 420 | 300 | **269 850.00** |
| **VFD2000C63B-00** | 160 kW | 220A | 3-ph AC motor drive | F1 | 800 | 420 | 300 | **325 500.00** |
| **VFD2500C63B-00** | 185 kW | 290A | 3-ph AC motor drive | G1 | 1000 | 500 | 397 | **397 950.00** |
| **VFD3150C63B-00** | 250 kW | 350A | 3-ph AC motor drive | G1 | 1000 | 500 | 397 | **543 900.00** |

***Default 525/690 rating:*** *Light duty* ***Control modes:*** *V / F , V / F+PG , SVC control modes only*
*(see **Annex-3** for detailed derating chart for different duties and voltages)*
*Frame A, B, C built-in braking chopper (frames D,E,F,G,H) DC reactor built-in)*



Above ZAR prices do not include VAT. E&OE

HVAC Fan Pump Motors

**VP3000 series** - Open-loop variable-torque standard drive

The Delta **VP3000** series provides new advanced features for a seamless and robust customer experience with predictive maintenance for key components, lower harmonics, reduced dimensions and a lower carbon footprint

**VP3000** is ideal for variable-torque applications such as blowers, pumps, HVAC, water treatment and supply systems. With built-in support for **BACnet**, the drives are easily integrated with Building Management Systems.

Power ranges from 0.75 to 630 kW with reduced frame sizes for optimal space usage and easier maintenance.

**General features:**

- Custom development platform: Built-in PLC with 20k steps
- Functional safety: Built-in Safe Torque Off (STO) SIL3
- Built-in EMC filter: In compliance with **(EN61800-3 C2, C3)**
- High-speed network: Supports various industrial comm. protocols
- Enhanced PCB coating: In compliance with (IEC 60721-3-3 class 3C3)
- Energy efficiency: IM, PM, and high-efficiency SynRM motor control modes
- Micro SD: Parameter backup, PLC program backup, firmware updates
- Compact size: Slim design, optimising panel space and cable configuration
- Lower harmonics: EN 61000-3-12 standard harmonics reach min. 35% *(from 22 kW)*
- PdM: Monitors key component's service life for stable equipment operation
- Built-in USB-C port: Facilitates drive setting, updating, real-time monitoring and system tuning



VFD011VP43BFTAA



VFD110VP43BFTCA



VFD866VP43SHTCA

| type | motor rating | rated current | description | frame size | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **VP3000 series -** Three-phase input **380-480V 50/60Hz** | | | | | | | | |
| **VFD3A0VP43BFTAA** | 0.75 kW | 3.0A | 3-ph AC motor drive | A2 | 300 | 110 | 147 | **11 655.00** |
| **VFD4A2VP43BFTAA** | 1.5 kW | 4.2A | 3-ph AC motor drive | A2 | 300 | 110 | 147 | **12 705.00** |
| **VFD5A6VP43BFTAA** | 2.2 kW | 5.6A | 3-ph AC motor drive | A2 | 300 | 110 | 147 | **13 755.00** |
| **VFD7A2VP43BFTAA** | 3.0 kW | 7.2A | 3-ph AC motor drive | A2 | 300 | 110 | 147 | **13 860.00** |
| **VFD011VP43BFTAA** | 4.0 kW | 11A | 3-ph AC motor drive | A2 | 300 | 110 | 147 | **17 115.00** |
| **VFD013VP43BFTAA** | 5.5 kW | 13A | 3-ph AC motor drive | B2 | 300 | 110 | 167 | **19 005.00** |
| **VFD018VP43BFTAA** | 7.5 kW | 18A | 3-ph AC motor drive | B2 | 300 | 110 | 167 | **20 685.00** |
| **VFD025VP43BFTAA** | 11.0 kW | 25A | 3-ph AC motor drive | C2 | 380 | 142 | 213 | **24 150.00** |
| **VFD032VP43BFTAA** | 15.0 kW | 32A | 3-ph AC motor drive | C2 | 380 | 142 | 213 | **27 405.00** |
| **VFD038VP43BFTAA** | 18.5 kW | 38A | 3-ph AC motor drive | C2 | 380 | 142 | 213 | **34 230.00** |
| **VFD045VP43BFTCA** | 22 kW | 45A | 3-ph AC motor drive | D2 | 460 | 175 | 221 | **40 005.00** |
| **VFD062VP43BFTCA** | 30 kW | 62A | 3-ph AC motor drive | D2 | 460 | 175 | 221 | **45 675.00** |
| **VFD073VP43BFTCA** | 37 kW | 73A | 3-ph AC motor drive | E2 | 489 | 190 | 226 | **52 920.00** |
| **VFD090VP43BFTCA** | 45 kW | 90A | 3-ph AC motor drive | E2 | 489 | 190 | 226 | **60 165.00** |
| **VFD110VP43BFTCA** | 55 kW | 110A | 3-ph AC motor drive | F2 | 595 | 190 | 255 | **76 965.00** |
| **VFD150VP43BFTCA** | 75 kW | 150A | 3-ph AC motor drive | G2 | 660 | 199 | 310 | **97 650.00** |
| **VFD180VP43BFTCA** | 90 kW | 180A | 3-ph AC motor drive | H2 | 710 | 262 | 310 | **117 600.00** |
| **VFD220VP43BFTCA** | 110 kW | 220A | 3-ph AC motor drive | H2 | 710 | 262 | 310 | **145 950.00** |
| **VFD260VP43BFTCA** | 132 kW | 260A | 3-ph AC motor drive | I2 | 783 | 260 | 341 | **181 650.00** |
| **VFD310VP43BFTCA** | 160 kW | 310A | 3-ph AC motor drive | I2 | 783 | 260 | 341 | **198 450.00** |
| **VFD370VP43BFTCA** | 185 kW | 370A | 3-ph AC motor drive | J2 | 937 | 346 | 410 | **263 550.00** |
| **VFD395VP43BFTCA** | 200 kW | 395A | 3-ph AC motor drive | J2 | 937 | 346 | 410 | **285 600.00** |
| **VFD460VP43BFTCA** | 220 kW | 460A | 3-ph AC motor drive | K2 | 955 | 380 | 410 | **300 300.00** |
| **VFD485VP43BFTCA** | 250 kW | 485A | 3-ph AC motor drive | K2 | 955 | 380 | 410 | **320 250.00** |
| **VFD530VP43SHTCA** | 280 kW | 530A | 3-ph AC motor drive | L2 | 1279 | 345 | 529 | **341 250.00** |
| **VFD616VP43SHTCA** | 315 kW | 616A | 3-ph AC motor drive | L2 | 1279 | 345 | 529 | **480 900.00** |
| **VFD683VP43SHTCA** | 355 kW | 683A | 3-ph AC motor drive | L2 | 1279 | 345 | 529 | **516 600.00** |
| **VFD770VP43SHTCA** | 400 kW | 770A | 3-ph AC motor drive | L2 | 1279 | 345 | 529 | **569 100.00** |
| **VFD866VP43SHTCA** | 450 kW | 866A | 3-ph AC motor drive | M2 | 1434 | 345 | 529 | **697 200.00** |
| **VFD930VP43SHTCA** | 500 kW | 930A | 3-ph AC motor drive | M2 | 1434 | 345 | 529 | **701 400.00** |
| **VFD1K1VP43SHTCA** | 560 kW | 1100A | 3-ph AC motor drive | M2 | 1434 | 345 | 529 | **810 600.00** |
| **VFD1K2VP43SHTCA** | 630 kW | 1200A | 3-ph AC motor drive | M2 | 1434 | 345 | 529 | **877 800.00** |

**Accessories for VP3000 drives**

| | | | |
|---|---|---|---|
| **EMV-R6AA** | relay | plug-in extension card for multi-function output selection | **1 165.50** |
| **EMV-A22A** | analog | plug-in I/O extension card 0 - 10 V, 0 - 20mA/4 - 20mA | **1 291.50** |
| **EMV-D42A** | I/O | plug-in I/O extension card | **714.00** |
| **EMC-COP01** | CANopen | plug-in CANopen communication card | **1 260.00** |
| **CMC-EIP02** | EtherNet | plug-in EtherNet/IP, Modbus TCP communication card | **2 646.00** |
| **CMC-PN01** | PROFINET | plug-in PROFINET communication card | **5 187.00** |

**Standard fieldbus cables**

| | | | | |
|---|---|---|---|---|
| **UC-CMC010-01A** | 1 m | CANopen | CANopen cable *(RJ45 connector)* | **213.15** |
| **UC-CMC020-01A** | 2 m | CANopen | CANopen cable *(RJ45 connector)* | **316.05** |
| **UC-CMC030-01A** | 3 m | CANopen | CANopen cable *(RJ45 connector)* | **569.10** |
| **UC-EMC010-02B** | 1 m | EtherNet | EtherNet cable *(shielded)* | **483.00** |
| **UC-EMC020-02B** | 2 m | EtherNet | EtherNet cable *(shielded)* | **676.20** |
| **UC-EMC050-02B** | 5 m | EtherNet | EtherNet cable *(shielded)* | **1 081.50** |

HVAC Fan Pump Motors



VFD150CP4EB-21



VFD450CP43S-21



VFD450FP4EA-52

**CP2000 series** - Fan and Pump purpose drives

CP2000 series AC motor drive for energy-saving HVAC systems and for pump and fan applications. Equipped with special HVAC parameters and PID control functions for efficient operation, multi-segment V/F control curve and soft start functions to assist frequent torque change and constant output applications with energy-saving performance.

**General features:**

- Built-in PLC *(10K steps)* programming capacity with real-time-clock and calendar
- Built-in RS-485 (Modbus) and BACnet MS/TP *(expandable with optional extension cards)*
- Multi-pump control of up to 8 motors provide fixed amount and fixed time circulation control
- Flying start and auto restart after momentary power loss functions, suitable for fan application
- Enhanced PCB coatings ***(IEC 60721-3-3 class 3C2 standard)*** ensures drive operation in harsh environments
- Default rated current: Light duty *(break resistor chart, see **Annex-3**)*
- Dual rating chart for CP/CFP2000 drives - normal and heavy-duty applications *(see **Annex-4**)*

| type | motor rating | rated current | description | frame size | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **CP2000 series** - Fan/Pump vector control drives | | | | | | | | |
| **Three-phase input 380-480V 50/60 Hz** | | | | | | | | |
| **VFD015CP4EB-21** | 1.5 kW | 4.2A | 3-ph AC motor drive | A | 250 | 130 | 170 | **12 705.00** |
| **VFD022CP4EB-21** | 2.2 kW | 5.5A | 3-ph AC motor drive | A | 250 | 130 | 170 | **13 755.00** |
| **VFD040CP4EA-21** | 4.0 kW | 10.5A | 3-ph AC motor drive | A | 250 | 130 | 170 | **16 800.00** |
| **VFD055CP4EB-21** | 5.5 kW | 13A | 3-ph AC motor drive | A | 250 | 130 | 170 | **18 480.00** |
| **VFD075CP4EB-21** | 7.5 kW | 18A | 3-ph AC motor drive | A | 250 | 130 | 170 | **19 845.00** |
| **VFD110CP4EB-21** | 11 kW | 24A | 3-ph AC motor drive | B | 320 | 190 | 190 | **24 045.00** |
| **VFD150CP4EB-21** | 15 kW | 32A | 3-ph AC motor drive | B | 320 | 190 | 190 | **27 405.00** |
| **VFD185CP4EB-21** | 18.5 kW | 38A | 3-ph AC motor drive | B | 320 | 190 | 190 | **32 340.00** |
| **VFD220CP4EA-21** | 22 kW | 45A | 3-ph AC motor drive | C | 400 | 250 | 210 | **38 220.00** |
| **VFD300CP4EB-21** | 30 kW | 60A | 3-ph AC motor drive | C | 400 | 250 | 210 | **43 155.00** |
| **VFD370CP4EB-21** | 37 kW | 73A | 3-ph AC motor drive | C | 400 | 250 | 210 | **47 985.00** |
| **VFD450CP43S-21** | 45 kW | 91A | 3-ph AC motor drive | D0 | 500 | 280 | 255 | **59 325.00** |
| **VFD550CP43S-21** | 55 kW | 110A | 3-ph AC motor drive | D0 | 500 | 280 | 255 | **66 465.00** |
| **VFD750CP43B-21** | 75 kW | 150A | 3-ph AC motor drive | D | 550 | 330 | 275 | **93 450.00** |
| **VFD900CP43A-21** | 90 kW | 180A | 3-ph AC motor drive | D | 550 | 330 | 275 | **129 150.00** |
| **VFD1100CP43A-21** | 110 kW | 220A | 3-ph AC motor drive | E | 589 | 370 | 300 | **145 950.00** |
| **VFD1320CP43B-21** | 132 kW | 260A | 3-ph AC motor drive | E | 589 | 370 | 300 | **169 050.00** |
| **VFD1600CP43A-21** | 160 kW | 310A | 3-ph AC motor drive | F | 800 | 420 | 300 | **191 100.00** |
| **VFD1850CP43B-00** | 185 kW | 370A | 3-ph AC motor drive | F | 800 | 420 | 300 | **255 150.00** |
| **VFD2200CP43A-00** | 220 kW | 460A | 3-ph AC motor drive | G1 | 1000 | 500 | 397 | **312 900.00** |
| **VFD2800CP43A-00** | 280 kW | 530A | 3-ph AC motor drive | G1 | 1000 | 500 | 397 | **396 900.00** |
| **VFD3150CP43A-00** | 315 kW | 616A | 3-ph AC motor drive | H1 | 1435 | 700 | 398 | **507 150.00** |
| **VFD3550CP43A-00** | 355 kW | 683A | 3-ph AC motor drive | H1 | 1435 | 700 | 398 | **553 350.00** |
| **VFD4000CP43A-00** | 400 kW | 770A | 3-ph AC motor drive | H1 | 1435 | 700 | 398 | **622 650.00** |
| **VFD5000CP43A-00** | 500 kW | 930A | 3-ph AC motor drive | H1 | 1435 | 700 | 398 | **783 300.00** |

*Frames A, B, C - built-in braking chopper, EMI filter. Frames D,E,F,G,H - DC reactor built-in*
*Flange mount kits for rear projecting heat sinks for improved ventilation (see accessories page)*
*Larger sizes up to 630kW available on request*

**CFP2000 series** - Drives for Fans and Pumps **IP55**

CFP2000 series designed with an industry leading IP55 enclosure providing protection from dust and water. It includes many outstanding features and built-in functionality, reducing setup and tuning time while providing higher efficiency.

- Built-in EMI filter *(meets EN61800-3)*
- Built-in DC choke *(meets EN6100-3-12)*
- Built-in Safe Torque Off (STO) SIL2 function and 2 sets of PID controller functions
- Enhanced PCB coating to **(IEC 60721-3-3 class 3C3)** ensures reliability in harsh environments

| type | motor rating | rated current | description | frame size | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Three-phase input 380-480V 50/60 Hz** | | | | | | | | |
| **VFD015FP4EA-52** | 1.5 kW | 4.2A | 3-ph AC motor drive | A-1 | 366 | 161 | 199 | **21 000.00** |
| **VFD022FP4EA-52** | 2.2 kW | 5.5A | 3-ph AC motor drive | A-1 | 366 | 161 | 199 | **22 365.00** |
| **VFD040FP4EA-52** | 4.0 kW | 10.5A | 3-ph AC motor drive | A-1 | 366 | 161 | 199 | **23 310.00** |
| **VFD055FP4EA-52** | 5.5 kW | 13A | 3-ph AC motor drive | A-1 | 366 | 161 | 199 | **24 150.00** |
| **VFD075FP4EA-52** | 7.5 kW | 18A | 3-ph AC motor drive | A-1 | 366 | 161 | 199 | **24 675.00** |
| **VFD110FP4EA-52** | 11 kW | 24A | 3-ph AC motor drive | B-1 | 491 | 216 | 229 | **27 405.00** |
| **VFD150FP4EA-52** | 15 kW | 32A | 3-ph AC motor drive | B-1 | 491 | 216 | 229 | **33 810.00** |
| **VFD185FP4EA-52** | 18.5 kW | 38A | 3-ph AC motor drive | B-1 | 491 | 216 | 229 | **43 785.00** |
| **VFD220FP4EA-52** | 22 kW | 45A | 3-ph AC motor drive | B-1 | 491 | 216 | 229 | **51 870.00** |
| **VFD300FP4EA-52** | 30 kW | 60A | 3-ph AC motor drive | C-1 | 630 | 282 | 265 | **64 785.00** |
| **VFD370FP4EA-52** | 37 kW | 73A | 3-ph AC motor drive | C-1 | 630 | 282 | 265 | **86 625.00** |
| **VFD450FP4EA-52** | 45 kW | 91A | 3-ph AC motor drive | D0-1 | 680 | 308 | 307 | **110 250.00** |
| **VFD550FP4EA-52** | 55 kW | 110A | 3-ph AC motor drive | D0-1 | 680 | 308 | 307 | **128 100.00** |
| **VFD750FP4EA-52** | 75 kW | 150A | 3-ph AC motor drive | D-1 | 770 | 370 | 335 | **155 400.00** |
| **VFD900FP4EA-52** | 90 kW | 180A | 3-ph AC motor drive | D-1 | 770 | 370 | 335 | **179 550.00** |

*Frames A-1, B-1, C-1 - built-in braking chopper*



Above ZAR prices do not include VAT. E&OE



IFD6500



MKC-DN1CB



CMC-EIP02

## Accessories for C2000+, CP/CFP2000 series drives

Delta's AC Motor Drive product line provides a full range of motor control technologies and accessories that can be used throughout a wide range of industries to enhance and improve machine automation.

Optional communication cards include **EtherCAT, EtherNet/IP, PROFINET, Modbus TCP, CANopen**

### Hardware accessories

| type | device | description | | price |
|---|---|---|---|---|
| **KPC-CC01** | keypad | with LCD, parameters backup function | C series drives | **2 026.50** |
| **MKC-KPPK** | bracket | remote panel adapter for **KPC-CC01** *(IP66)* | C series drives | **712.95** |
| **EMC-D42A** | DC 24V | digital I/O extension card, selectable NPN/PNP | 4DI / 2DO | **651.00** |
| **EMC-A22A** | analog | I/O extension card, selectable 0-10V/4-20mA | 2AI / 2AO | **1 186.50** |
| **EMC-R6AA** | card | multi-function relay output extension card | 6 relay | **1 071.00** |
| **IFD6530** | converter/program | USB to RS-485 - KPC-CC01 and C series drives | | **1 911.00** |
| **IFD6500** | converter | USB to RS-485 - C series drives | | **1 134.00** |

### Mounting accessories

Flange mount kits to permit the chassis mounting of drives with the heat-sink section protruding from the rear of the enclosure for improved cooling/heat dissipation of drives.

| | | | | |
|---|---|---|---|---|
| **MKC-AFM** | flange | mount kit for rear exposure of heat sink | for drive frame A | **1 323.00** |
| **MKC-BFM** | flange | mount kit for rear exposure of heat sink | for drive frame B | **1 470.00** |
| **MKC-CFM** | flange | mount kit for rear exposure of heat sink | for drive frame C | **1 669.50** |

*Base mounting flange can be moved to central position to expose heat sinks for frames D, E, F.*

### Conduit boxes

- Application: Wall mount IP00 - IP21

| | | | |
|---|---|---|---|
| **MKC-DN1CB** | frame D | Conduit box kit for frame D1 *(not D01)* | **3 423.00** |
| **MKC-EN1CB** | frame E | Conduit box kit for frame E1 | **3 937.50** |
| **MKC-FN1CB** | frame F | Conduit box kit for frame F1 | **5 428.50** |

### PG cards for C2000 drives

| type | output voltage | PG 1-300kHz motor encoder | PG 2-300kHz optional pulse command | PG out re-transmission 1-255 ratio | price |
|---|---|---|---|---|---|
| **EMC-PG01L** | 5 or 12 VDC | Line drive / Open collector | Line drive / Open collector | Line driver | **2 940.00** |
| **EMC-PG01O** | 5 or 12 VDC | Line drive / Open collector | Line drive / Open collector | Open collector | **2 268.00** |
| **EMC-PG01U** | 5 or 12 VDC | Line drive with commutation | Line drive / Open collector | Line driver | **3 160.50** |

### Fieldbus modules for drives *(plugs into drive)*

| type | comms | description | | rate | price |
|---|---|---|---|---|---|
| **CMC-EIP02** | EtherNet/IP | supports, Modbus TCP protocols | 2 port | 10/100 Mbps | **2 646.00** |
| **CMC-PD01** | Profibus-DP | plug-in communication card | | 9.6kbps - 12Mbps | **5 869.50** |
| **EMC-COP01** | CANopen | plug-in communication card | | 50kbps - 1Mbps | **1 260.00** |
| **CMC-EC01** | EtherCAT | plug-in 2 port comm. card | | 100 Mbps | **5 040.00** |
| **CMC-PN01** | Profinet | plug-in 2 port comm. card | | 10/100 Mbps Auto-Detect | **5 187.00** |

### Cables for above communication cards

| | | | | price |
|---|---|---|---|---|
| **UC-CMC010-01A** | CANopen | standard fieldbus cable, RJ45 connector | 1 meter | **213.15** |
| **UC-CMC020-01A** | CANopen | standard fieldbus cable, RJ45 connector | 2 meter | **316.05** |
| **UC-CMC030-01A** | CANopen | standard fieldbus cable, RJ45 connector | 3 meter | **569.10** |
| **UC-EMC010-02B** | Ethernet | shielded Ethernet cable | 1 meter | **483.00** |
| **UC-EMC020-02B** | Ethernet | shielded Ethernet cable | 2 meter | **676.20** |
| **UC-EMC050-02B** | Ethernet | shielded Ethernet cable | 5 meter | **1 081.50** |

**DIAStudio**
Smart Machine Suite



**Industrial communication protocols**

EtherCAT · CANopen · Modbus · EtherNet/IP · PROFINET · POLAR CLOUD



VFD185ED43S

## ED series - Elevator drives

ED series motor drives are specifically designed for elevator applications and feature the latest innovative control technology, providing extended features with outstanding performance. Designed to high safety standards and for high durability, the ED series is an excellent solution for elevator operation in critical environments.

**General features:**

- Auto-tuning with load attached
- Dual-output protection for reliable rides
- Supports both asynchronous and synchronous motors
- Precise time sequence for elevator motion *(start/stop)*
- Built-in USB-B port for parameter uploads and downloads
- Auto-correct start torque and load compensation with manual adjustment
- DC braking level and slip compensation enhancing the levelling accuracy providing ride comfort
- Built-in STO (Safe Torque Off) function (complies with **EN61800-5-2** and **EN61508 (SIL2)** standards
- Supports 1-phase 230/460 VAC UPS *(light-load direction search function triggered automatically on power failure)*
- Default rated current: Heavy duty

| type | motor rating | rated current | description | frame size | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Single-phase input 200-240 VAC 50/60Hz** | | | | | | | | |
| **VFD037ED21S** | 3.7 kW | 17A | 1-ph elevator drive | B | 260 | 194 | 134 | **22 365.00** |
| **Three-phase input 380-460VAC 50/60Hz** | | | | | | | | |
| **VFD055ED43S*** | 5.5 kW | 13A | 3-ph elevator drive | C | 350 | 235 | 146 | **24 570.00** |
| **VFD075ED43S*** | 7.5 kW | 17A | 3-ph elevator drive | C | 350 | 235 | 146 | **28 035.00** |
| **VFD110ED43S*** | 11 kW | 23A | 3-ph elevator drive | C | 350 | 235 | 146 | **33 495.00** |
| **VFD150ED43S*** | 15 kW | 30A | 3-ph elevator drive | C | 350 | 235 | 146 | **40 110.00** |
| **VFD185ED43S*** | 18.5 kW | 38A | 3-ph elevator drive | C | 350 | 235 | 146 | **48 300.00** |
| **VFD220ED43S*** | 22 kW | 45A | 3-ph elevator drive | D | 404 | 255 | 178 | **59 535.00** |
| **VFD300ED43S*** | 30 kW | 58A | 3-ph elevator drive | D | 404 | 255 | 178 | **86 415.00** |
| **VFD370ED43S** | 37 kW | 80A | 3-ph elevator drive | E | 550 | 330 | 273 | **102 690.00** |
| **VFD450ED43S** | 45 kW | 100A | 3-ph elevator drive | E | 550 | 330 | 273 | **110 250.00** |

* *Braking chopper built in (break resistor chart, see **Annex-3**)*
*Larger sizes available on request.*



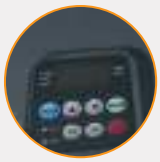
EMED-PGABD-1

**Braking units** for above drives without built-in braking chopper

| type | IMAX (A) 10%ED | ICONT (A) | Input range. (VDC) | Min. Resistance (ohm) | price |
|---|---|---|---|---|---|
| **VFDB4045** | 60 | 18 | 400-800 | 13.6 | **8 032.50** |

**PG feedback cards**

| | | |
|---|---|---|
| **EMED-PGAB** | supports open-collector or Line-driver and UVW encoder signal, 5/12 VDC supply | **1 522.50** |
| **EMED-PGABD-1** | open-collector, differential, UVW encoder signal and frequency divider output | **2 142.00** |
| **EMED-PGHSD-3** | supports Heidenhain ERN1387/ECN1313, SICK HIPERFACE 5/8V supply | **2 898.00** |





VFD004DD21S

## DD series elevator door drive

DD series AC motor drives *(specifically designed for elevator door applications)* feature door width auto-tuning with precise open and close control and smooth door open curve and blocking detection.

- Door width auto-tuning
- Smooth door re-open curve
- Safety protection and blockage detection *(four steps)*
- Induction motor *(asynchronous)* and permanent magnet motor *(synchronous)*
- Multiple door control solutions: distance /speed control / multi-step speed control modes

**Single-phase input 230 VAC 50/60Hz**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **VFD004DD21S** | 0.4 kW | 2.5A | 1-ph elevator door drive | 170 | 215 | 55 | **7 518.00** |

**Accessories for DD Drive**

| | | | |
|---|---|---|---|
| **MEC-SG1026S** | 1 meter | encoder cable *(without D-SUB connector)* for DD series | **285.60** |
| **MEC-SG3026S** | 3 meter | encoder cable *(without D-SUB connector)* for DD series | **556.50** |
| **KPC-CC01** | keypad | with LCD display, parameters backup function | **2 026.50** |



ECMD-B91608MS

## Slimline sliding door motor *DC brushless motor*

- Ultra-slim design *(55 mm)*
- Instant torque up to 3 Nm
- Flexible installation *(front or back side installation)*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ECMD-B91608MS** | 80W | 3.0Nm/250 rpm | sliding door motor | 160 | 160 | 55 | **7 644.00** |
| **DPB-N7779** | dust cap | | dust cover for protection of door motor terminals | | | | **165.90** |



Above ZAR prices do not include VAT. E&OE

# Discover TechTop's Range of Electric Motors

## Where Innovation Meets Efficiency

- IE3 Premium Efficiency Motors
- Frame size 80 - 355M/L
- 0.75 to 355kW



CE UKCA CSA DNV·GL RoHS

TECHTOP

Explore the Range

ELECTRON Series

IOT

POLAR



300S-5SPLR-O

## Electron series - Standard pump panels

Irrigation and water reticulation applications require precise pump control and protection to pump water reliably and efficiently. Pump purpose drives in constant pressure systems are designed to save energy, eliminate high start-up currents, and precisely control pump speed to match pressure demand.

Conventional constant pressure systems routinely introduce many problems, such as overloads during pipe filling, unreliable sleep and wake states resulting in pump cavitation requiring intricate and cumbersome setup.

Installation of a smart pump panel utilises various system variables and inputs which dynamically react to prevailing environmental conditions, ensuring a reactive dependable control system.

**Comprehensive ready-to-connect pump panel comprising:**

- Maintain a constant pressure by utilising a **CP2000** pump-purpose drive
  - Utilising an internal 10k step PLC to automatically preserve the system at peak efficiency
  - The software assesses variables to automatically determine the most reliable operation
  - Phase failure/reversal, no flow digital input
- Front panel controls
  - Three position Man/Off/Auto selector. Automatic mode maintains constant pressure
  - Manual mode for speed control by analogue potentiometer
  - Run and trip indicators for operational indication
  - Standard 0-5 position pressure selector for preset setpoints
  - Local or remote: Selector switch
- Ergonomic LCD keypad display for easy setup and operation, displaying all vital information: motor current, output frequency, current pressure set point, feedback pressure, no-load time out, sleep/wake status
- Graphical menu for easy navigation through basic to advanced embedded features such as:
  - Pipeline filling, smart sleep/wake, no flow/underload protection, overcurrent stall prevention, pump priming
  - Filter flush control *(optional accessory control relays **EMC-R6AA**)*, transmitter failure detection
  - Pipe burst detection, 0-24H restart delay for dry run trips, three-point acceleration curve
- Powder-coated metal RAL2000 enclosure suitable for outdoors with hooded vents and panel
- 40 kA Class II surge protection

**Automatic mode:** *Requires a pressure transmitter* **Type 528** *and* **4-pin M12** *cable (purchased separately)*

| type | motor rating | rated current (A) | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **Electron series - Standard pump panel** - *(3 phase input 380-480V, 50/60Hz)* | | | | | | | |
| **400V three-phase pump panel** | | | | | | | |
| **075S-5SPLR-O** | 7.5 kW | 18A | std. pump control panel | 650 | 450 | 270 | **41 685.00** |
| **110S-5SPLR-O** | 11 kW | 24A | std. pump control panel | 750 | 550 | 270 | **48 825.00** |
| **150S-5SPLR-O** | 15 kW | 32A | std. pump control panel | 750 | 550 | 270 | **53 760.00** |
| **185S-5SPLR-O** | 18.5 kW | 38A | std. pump control panel | 750 | 550 | 270 | **58 380.00** |
| **220S-5SPLR-O** | 22 kW | 45A | std. pump control panel | 850 | 600 | 270 | **64 890.00** |
| **300S-5SPLR-O** | 30 kW | 60A | std. pump control panel | 850 | 600 | 270 | **72 135.00** |
| **370S-5SPLR-O** | 37 kW | 73A | std. pump control panel | 850 | 600 | 270 | **77 910.00** |
| **450S-5SPLR-O** | 45 kW | 91A | std. pump control panel | 950 | 700 | 330 | **91 560.00** |
| **550S-5SPLR-O** | 55 kW | 110A | std. pump control panel | 950 | 700 | 330 | **98 595.00** |
| **750S-5SPLR-O** | 75 kW | 150A | std. pump control panel | 1150 | 850 | 330 | **138 600.00** |
| **900S-5SPLR-O** | 90 kW | 180A | std. pump control panel | 1150 | 850 | 330 | **170 100.00** |
| **1100S-5SPLR-O** | 110 kW | 220A | std. pump control panel | 1150 | 850 | 330 | **191 100.00** |
| **1320S-5SPLR-O** | 132 kW | 260A | std. pump control panel | 1150 | 850 | 330 | **215 250.00** |

*Larger sizes available on request*

New



015S-1SP-L4

### Electron Lite series - Pump panel - *(3 phase input 380-480V, 50/60Hz)*

Electron "Lite" series, featuring pre-configured parameters and an easy-to-navigate keypad with LED display and potentiometer, housed in a compact, durable steel enclosure perfect for various applications including: irrigation, borehole, booster pumps, and water storage tanks.

- Pre-configured parameters for irrigation applications with **ME300** drive
- Constant pressure control with the use of a pressure transmitter
- Excludes remote monitoring

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **220V three-phase pump panel** | | | | | | | |
| **015S-1SP-L2** | 1.5 kW | 7.5A | basic pump control panel | 450 | 300 | 220 | **11 340.00** |
| **022S-1SP-L2** | 2.2 kW | 11.0A | basic pump control panel | 450 | 300 | 220 | **12 495.00** |
| **400V three-phase pump panel** | | | | | | | |
| **015S-1SP-L4** | 1.5 kW | 4.2A | basic pump control panel | 450 | 300 | 220 | **12 915.00** |
| **022S-1SP-L4** | 2.2 kW | 5.5A | basic pump control panel | 450 | 300 | 220 | **14 175.00** |
| **040S-1SP-L4** | 4.0 kW | 9.0A | basic pump control panel | 450 | 300 | 220 | **15 330.00** |
| **055S-1SP-L4** | 5.5 kW | 13.0A | basic pump control panel | 450 | 300 | 220 | **17 220.00** |
| **075S-1SP-L4** | 7.5 kW | 17.0A | basic pump control panel | 450 | 300 | 220 | **19 530.00** |



Above ZAR prices do not include VAT. E&OE

PHOTON Series

IOT PV

## Photon - Solar pump panels

Photon pump control panels harness solar energy to deliver water efficiently, ideal for remote agricultural areas and reducing electricity costs.

**Modes:**

- **Hybrid Mode:** Combines solar and AC power, ensuring constant pressure control during low solar conditions (CP2000)
- **Solar Mode:** Adjusts pump speed based on solar radiation: maintains user-defined output pressure with a pressure transmitter (CP2000)

**Features:**

- **Comprehensive System:** Includes solar and control tracking with a 10k step PLC, underload/no-flow detection, and optional no-flow digital input
- **User-Friendly Interface:** LCD shows motor current, frequency, DC voltage, and pressure. Graphical menu for easy navigation of advanced settings like MPPT values and bore hole pump startup
- **Rugged Enclosure:** Powder-coated metal (RAL2000)

**Flexible Power Options:** Hybrid mode, allowing seamless integration with AC power for continuous operation in varying sunlight conditions.

***AC Automatic mode:*** *Works with a* **Type 528** *pressure transmitter, requiring a* **4-pin M12** *cable (purchased separately)*



220PV4-O-CP

| type | motor rating | rated current (A) | vmp range (DC) | Voc (DC) | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Photon series - Solar pump panels** | | | | | | | | |
| • Customized LCD keypad interface<br>• Pressure control/limiter in solar mode<br>• Constant speed and pressure control in hybrid mode<br>• Sleep and wake functions in both solar and hybrid mode | | | | | | | | |
| **400V three-phase pump panel** *(hybrid)* | | | | | | | | |
| **022PV4-D-O-CP** | 2.2 kW | 5.5A | 500 - 650V | 770V | 650 | 450 | 270 | **32 130.00** |
| **055PV4-D-O-CP** | 5.5 kW | 13A | 500 - 650V | 770V | 650 | 450 | 270 | **37 065.00** |
| **075PV4-D-O-CP** | 7.5 kW | 18A | 500 - 650V | 770V | 650 | 450 | 270 | **39 270.00** |
| **110PV4-D-O-CP** | 11 kW | 24A | 500 - 650V | 770V | 850 | 600 | 270 | **49 980.00** |
| **150PV4-D-O-CP** | 15 kW | 32A | 500 - 650V | 770V | 850 | 600 | 270 | **57 225.00** |
| **220PV4-D-O-CP** | 22 kW | 45A | 500 - 650V | 770V | 950 | 700 | 330 | **72 135.00** |
| **370PV4-D-O-CP** | 37 kW | 73A | 500 - 650V | 770V | 950 | 700 | 330 | **90 720.00** |
| **450PV4-D-O-CP** | 45 kW | 91A | 500 - 650V | 770V | 950 | 700 | 330 | **115 500.00** |
| **400V three-phase pump panel** *(off-grid)* | | | | | | | | |
| **110PV4-O-CP** | 11 kW | 24A | 500-650V | 770V | 850 | 600 | 270 | **43 470.00** |
| **150PV4-O-CP** | 15 kW | 32A | 500-650V | 770V | 850 | 600 | 270 | **50 715.00** |
| **220PV4-O-CP** | 22 kW | 45A | 500-650V | 770V | 950 | 700 | 330 | **65 415.00** |
| **370PV4-O-CP** | 37 kW | 73A | 500-650V | 770V | 950 | 700 | 330 | **78 540.00** |
| **450PV4-O-CP** | 45 kW | 91A | 500-650V | 770V | 950 | 700 | 330 | **90 720.00** |
| *Larger sizes available on request* | | | | | | | | |


POLAR CLOUD

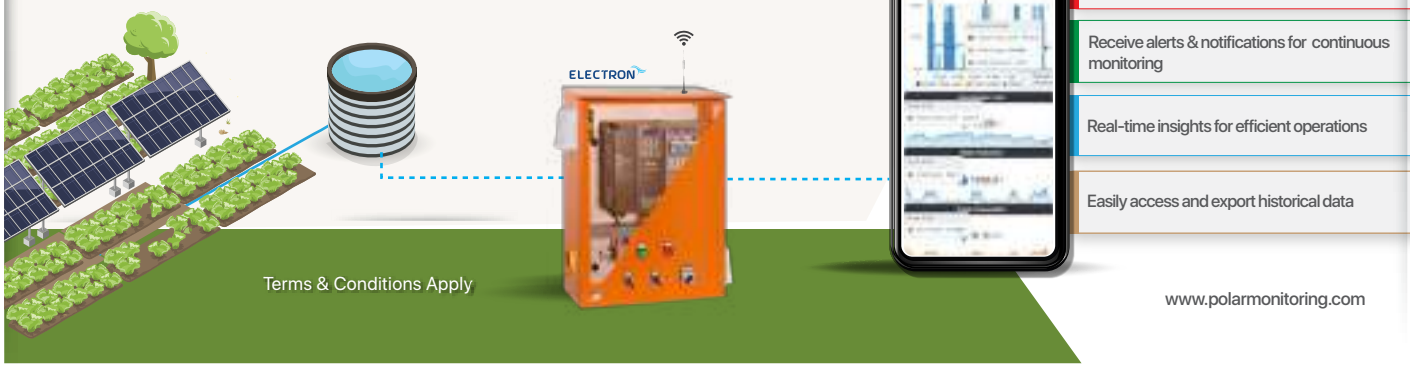
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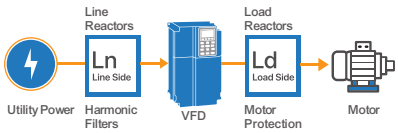
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**AC reactors** *(chokes) are suited for all series Delta drives and are finely tuned to manufacturer's specifications.*

Installing an AC reactor on the **input** side of an AC motor drive can increase line impedance, improve power factor, reduce input current, and reduce harmonics generated from the motor drive.

Installing the AC reactor on the **output** side can allow the user to extend the output power cable further than otherwise possible *(actual length - model dependant).* When multiple motors are installed on a single VFD which are being protected by manual motor starters it is advised to install a load reactor.

- High quality grain orientated silicon steel
- Normal operation temperature *(40ºC...50ºC)* above ambient




EIR...

## Input/Line AC reactors — 4% impedance

- Increase line impedance, improves power factor, reduced input current, increase system capacity and reduce interference generated from the motor drive
- Reduces momentary voltage surges or abnormal current spikes from the mains supply
- Install an AC input reactor in series between the main power and the three input phases R S T

| type | motor rating (kW) | rated current (A) | impedance (mH) | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **EIR003A0850** | 1.5 kW | 3.5A | 8.5 | AC input reactor | 135 | 120 | 70 | **3 643.50** |
| **EIR005A0590** | 2.2 kW | 5.0A | 5.9 | AC input reactor | 135 | 120 | 85 | **3 612.00** |
| **EIR008A0350** | 4.0 kW | 8.5A | 3.50 | AC input reactor | 155 | 150 | 80 | **4 221.00** |
| **EIR012A0260** | 5.5 kW | 12A | 2.60 | AC input reactor | 160 | 150 | 80 | **4 221.00** |
| **EIR016A0190** | 7.5 kW | 16A | 1.9 | AC input reactor | 160 | 150 | 100 | **4 819.50** |
| **EIR022A0134** | 11 kW | 22A | 1.34 | AC input reactor | 185 | 150 | 100 | **5 166.00** |
| **EIR030A0100** | 15 kW | 30A | 1 | AC input reactor | 160 | 180 | 110 | **6 625.50** |
| **EIR037AP800** | 18.5 kW | 37A | 0.8 | AC input reactor | 160 | 180 | 130 | **7 224.00** |
| **EIR044AP670** | 22 kW | 44A | 0.67 | AC input reactor | 160 | 180 | 135 | **8 179.50** |
| **EIR060AP490** | 30 kW | 60A | 0.49 | AC input reactor | 210 | 240 | 150 | **10 920.00** |
| **EIR072AP400** | 37 kW | 72A | 0.4 | AC input reactor | 210 | 240 | 155 | **11 865.00** |
| **EIR085AP350** | 45 kW | 85A | 0.35 | AC input reactor | 210 | 240 | 170 | **12 705.00** |
| **EIR105AP280** | 55 kW | 105A | 0.28 | AC input reactor | 205 | 240 | 175 | **13 230.00** |
| **EIR140AP210** | 75 kW | 140A | 0.21 | AC input reactor | 270 | 300 | 170 | **16 905.00** |
| **EIR170AP170** | 90 kW | 170A | 0.17 | AC input reactor | 270 | 300 | 190 | **19 320.00** |
| **EIR205AP140** | 110 kW | 205A | 0.14 | AC input reactor | 260 | 300 | 240 | **22 365.00** |
| **EIR245AP120** | 132 kW | 245A | 0.12 | AC input reactor | 260 | 300 | 210 | **24 150.00** |
| **EIR295AP100** | 160 kW | 295A | 0.1 | AC input reactor | 310 | 360 | 200 | **27 090.00** |
| **EIR340AP086** | 185 kW | 340A | 0.086 | AC input reactor | 310 | 390 | 230 | **34 965.00** |
| **EIR370AP079** | 200 kW | 370A | 0.079 | AC input reactor | 320 | 360 | 235 | **39 795.00** |
| **EIR460AP064** | 250 kW | 460A | 0.064 | AC input reactor | 440 | 440 | 255 | **43 995.00** |
| **EIR580AP050** | 315 kW | 580A | 0.05 | AC input reactor | 430 | 440 | 275 | **51 240.00** |
| **EIR636AP046** | 350 kW | 636A | 0.046 | AC input reactor | 480 | 440 | 280 | **60 270.00** |
| **EIR710AP042** | 400 kW | 710A | 0.042 | AC input reactor | 480 | 440 | 280 | **66 255.00** |
| **EIR800AP037** | 450 kW | 800A | 0.037 | AC input reactor | 475 | 470 | 290 | **75 285.00** |
| **EIR880AP034** | 500 kW | 880A | 0.034 | AC input reactor | 550 | 520 | 320 | **81 270.00** |



EOR...

## Output/Load AC reactors — 1.2% impedance

- Useful for applications of multiple motors installed on a single VSD
- Assists in prevention of ground fault (GFF), over-current (OC), over-voltage (OV) on long cable runs
- Install an AC output reactor in series between the three output phases U V W and the motor
- Increases the high-frequency impedance and reduces terminal voltage to protect the motor

| type | motor rating (kW) | rated current (A) | impedance (mH) | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **EOR003A0260** | 1.5 kW | 3.5A | 2.6 | AC output reactor | 135 | 120 | 70 | **3 013.50** |
| **EOR005A0180** | 2.2 kW | 5.0A | 1.80 | AC output reactor | 135 | 120 | 70 | **3 013.50** |
| **EOR008A0105** | 4 kW | 8.5A | 1.05 | AC output reactor | 135 | 120 | 90 | **3 013.50** |
| **EOR012AP800** | 5.5 kW | 12A | 0.8 | AC output reactor | 135 | 120 | 90 | **3 276.00** |
| **EOR016AP630** | 7.5 kW | 16A | 0.63 | AC output reactor | 160 | 150 | 90 | **4 137.00** |
| **EOR022AP400** | 11 kW | 22A | 0.4 | AC output reactor | 190 | 150 | 75 | **4 221.00** |
| **EOR030AP300** | 15 kW | 30A | 0.3 | AC output reactor | 130 | 150 | 115 | **4 819.50** |
| **EOR037AP240** | 18.5 kW | 37A | 0.24 | AC output reactor | 160 | 180 | 110 | **5 764.50** |
| **EOR044AP220** | 22 kW | 44A | 0.22 | AC output reactor | 160 | 180 | 120 | **6 625.50** |
| **EOR060AP150** | 30 kW | 60A | 0.15 | AC output reactor | 160 | 180 | 140 | **7 833.00** |
| **EOR072AP130** | 37 kW | 72A | 0.13 | AC output reactor | 180 | 240 | 160 | **9 030.00** |
| **EOR085AP110** | 45 kW | 85A | 0.11 | AC output reactor | 180 | 240 | 160 | **10 920.00** |
| **EOR105AP090** | 55 kW | 105A | 0.09 | AC output reactor | 180 | 240 | 160 | **11 445.00** |
| **EOR140AP070** | 75 kW | 140A | 0.07 | AC output reactor | 235 | 240 | 160 | **13 335.00** |
| **EOR170AP052** | 90 kW | 170A | 0.052 | AC output reactor | 245 | 240 | 155 | **14 490.00** |
| **EOR205AP043** | 110 kW | 205A | 0.043 | AC output reactor | 260 | 300 | 170 | **15 750.00** |
| **EOR245AP036** | 132 kW | 245A | 0.036 | AC output reactor | 260 | 300 | 170 | **18 060.00** |
| **EOR295AP030** | 160 kW | 295A | 0.03 | AC output reactor | 310 | 360 | 200 | **22 890.00** |
| **EOR340AP026** | 185 kW | 340A | 0.026 | AC output reactor | 310 | 360 | 180 | **25 305.00** |
| **EOR370AP024** | 200 kW | 370A | 0.024 | AC output reactor | 315 | 360 | 220 | **27 720.00** |
| **EOR460AP020** | 250 kW | 460A | 0.02 | AC output reactor | 365 | 360 | 220 | **31 920.00** |
| **EOR580AP016** | 315 kW | 580A | 0.016 | AC output reactor | 395 | 360 | 230 | **48 195.00** |
| **EOR636AP014** | 350 kW | 636A | 0.014 | AC output reactor | 480 | 420 | 240 | **54 180.00** |
| **EOR710AP013** | 400 kW | 710A | 0.013 | AC output reactor | 420 | 400 | 250 | **60 270.00** |
| **EOR800AP011** | 450 kW | 800A | 0.011 | AC output reactor | 490 | 420 | 270 | **64 995.00** |
| **EOR880AP010** | 500 kW | 880A | 0.01 | AC output reactor | 490 | 420 | 270 | **69 300.00** |

*Use a motor with a rated voltage ≤ 500 VAC and insulation level ≥ 1.35 kV in accordance with IEC 60034-17*
*Distances based on non-shielded/non-armoured cables. Please refer to specific drive manual for more details.*
*For longer cable distances use a reactor with 3% impedance available on request.*



Above ZAR prices do not include VAT. E&OE





ESF...

## Sinusoidal / Sinewave output filters

Frequency converters generate high du/dt electrical interference signals which disturb the load, increasing the insulation load putting stress on the motor.

**SINUSOIDAL FILTERS** are low-pass filters providing a perfect sinusoid waveform to the motor which filters frequency from the PWM *(pulse width modulation)* output signal of the inverter, reducing motor heating in installations where the drive and motor are separated by extreme distances.

The filters are connected between the frequency converter and the motor reducing high-frequency transient emissions improving motor efficiency and the entire EMC load on equipment.
Suited for older motors *(not designed for inverter operations)* or installations with long cable lengths.

- Reduction of the motor noise and eddy current losses
- Inverter-operation on long motor cables made possible
- Protection for motors driven by inverters
- Generation of a sinusoidal output voltage

| type | motor rating (kW) | rated current (A) | impedance (mH) | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **ESF011A0055** | 5.5 kW | 11A | 5.50 | Sinewave output filter | 235 | 240 | 170 | **21 105.00** |
| **ESF015A0075** | 7.5 kW | 15A | 4.00 | Sinewave output filter | 235 | 240 | 190 | **21 945.00** |
| **ESF022A0110** | 11 kW | 22A | 2.80 | Sinewave output filter | 265 | 240 | 240 | **23 310.00** |
| **ESF030A0150** | 15 kW | 30A | 2.10 | Sinewave output filter | 285 | 300 | 300 | **26 670.00** |
| **ESF037A0185** | 18.5 kW | 37A | 1.75 | Sinewave output filter | 285 | 300 | 290 | **30 135.00** |
| **ESF044A0220** | 22 kW | 44A | 1.40 | Sinewave output filter | 285 | 300 | 290 | **30 975.00** |
| **ESF057A0300** | 30 kW | 57A | 1.10 | Sinewave output filter | 375 | 360 | 340 | **33 600.00** |
| **ESF072A0370** | 37 kW | 72A | 0.82 | Sinewave output filter | 375 | 360 | 350 | **45 675.00** |
| **ESF085A0450** | 45 kW | 85A | 0.75 | Sinewave output filter | 375 | 360 | 360 | **53 760.00** |
| **ESF105A0550** | 55 kW | 105A | 0.60 | Sinewave output filter | 390 | 420 | 360 | **56 805.00** |
| **ESF140A0750** | 75 kW | 140A | 0.45 | Sinewave output filter | 390 | 420 | 380 | **63 210.00** |
| **ESF170A0900** | 90 kW | 170A | 0.36 | Sinewave output filter | 420 | 420 | 380 | **75 285.00** |

## Braking resistors and EMC filters for drives

Aluminium-housed compact brake resistors have protection class superior to conventional ceramic-skeleton resistors offer improved heat dissipation and overload capabilities, designed to endure high pulse loads, common with heavy duty inverters and regenerative braking circuits in industrial drive systems.

- High pulse load and high vibration capability

Protection: IP33 *(others available on request)*
Temperature coefficient: Less than 400 ppm/ºC
Dielectric strength: AC 3.5kV @50Hz 5s


RXLG...

| type | power (W) | resistance (ohm) | terminal | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Aluminium-housed resistors** | | Tolerance: <1000VDC, <1200VAC | | | | | | |
| **RXLG-80W/200RJ** | 80 | 200 Ω | cable | brake resistor | 110 | 40 | 20 | **384.30** |
| **RXLG-200W/91RJ** | 200 | 91 Ω | cable | brake resistor | 170 | 60 | 30 | **615.30** |
| **RXLG-300W/70RJ** | 300 | 70 Ω | cable | brake resistor | 220 | 60 | 30 | **756.00** |
| **RXLG-80W/750RJ** | 80 | 750 Ω | cable | brake resistor | 115 | 40 | 20 | **384.30** |
| **RXLG-200W/360RJ** | 200 | 360 Ω | cable | brake resistor | 170 | 60 | 30 | **615.30** |
| **RXLG-300W/250RJ** | 300 | 250 Ω | cable | brake resistor | 220 | 60 | 30 | **756.00** |
| **RXLG-1KW/75RJ** | 1000 | 75 Ω | cable | brake resistor | 400 | 60 | 30 | **1 732.50** |
| **RXLG-1.5KW/43RJ** | 1500 | 43 Ω | busbar | brake resistor | 400 | 107 | 50 | **2 677.50** |
| **RXLG-2KW/32RJ** | 2000 | 32 Ω | busbar | brake resistor | 450 | 107 | 50 | **3 633.00** |
| **RXLG-3KW/26RJ** | 3000 | 26 Ω | busbar | brake resistor | 500 | 107 | 50 | **5 481.00** |
| **RXLG-4.8KW/16RJ** | 5000 | 16 Ω | busbar | brake resistor | 700 | 107 | 50 | **8 347.50** |
| **RXLG-4KW/20RJ** | 5000 | 20 Ω | busbar | brake resistor | 700 | 107 | 50 | **7 161.00** |
| **RXLG-6KW/14RJ** | 6000 | 14 Ω | busbar | brake resistor | 750 | 107 | 50 | **9 796.50** |


VFDB4030

| type | IMAX (A) 10%ED | ICONT (A) | Input range (VDC) | Min. Resistance | price |
|---|---|---|---|---|---|
| **Braking units** | | *for drives without built-in braking chopper* | | | |
| **VFDB4030** | 40 | 15 | 400-750 | 20 Ω | **7 717.50** |
| **VFDB4045** | 60 | 18 | 400-750 | 13.6 Ω | **8 032.50** |
| **VFDB4110** | 126 | 45 | 400-751 | 6 Ω | **22 785.00** |
| **VFDB4160** | 190 | 50 | 400-752 | 4 Ω | **26 670.00** |
| **VFDB4185** | 225 | 100 | 400-753 | 3.4 Ω | **31 395.00** |
| **VFDB5055** | 60 | 20 | 607-1000 | 15.8 Ω | **10 920.00** |
| **VFDB6055** | 46 | 29 | 600-1120 | 24.5 Ω | **15 330.00** |
| **VFDB6110** | 92 | 59 | 600-1121 | 12.2 Ω | **19 005.00** |
| **VFDB6160** | 136 | 86 | 600-1122 | 8.2 Ω | **24 990.00** |
| **VFDB6200** | 162 | 107 | 600-1123 | 6.9 Ω | **30 870.00** |

VFD Ready

B3 Motors

## Electric Motors (Cast iron frame) - IE3 premium efficiency

TechTop electric motors conform to IEC standards, guaranteeing quality and reliability. Ideally suited for commercial, manufacturing, construction, and agricultural irrigation applications.

- Removable feet - terminal boxes can be side or top of motor
- Continuous duty service factor - S1
- Thermistors fitted as standard *(frame 160 and above)*
- Suitable for VSD use *(class H insulation rating)*
- In accordance with **SANS/IEC 60034-2-1** standards
- Electrically insulated non-drive end bearings *(frame 315 and above)*

**Three-phase cast iron motors**
**Foot mounting (B3)**

Protection degree: IP55
Insulation class: **H** (180°C) / ambient temperature 40°C
Colour: RAL 7024 *(graphite grey)*
**Δ** 220-240V *(or)* **Y** 380-415V 50Hz *(frame 80 - 100)*
**Δ** 380-415V *(or)* **Y** 660-690V 50Hz *(frame 112 - 355)*



T3CR 90S-2



T3CR 160L-4



T3C 315L3-4

| Type | output (kW) | frame size | pole | speed RPM | description | shaft Ø (mm) | weight (kg) | price |
|---|---|---|---|---|---|---|---|---|
| **2-pole** | **Three-phase motors** | | | | **IE3** - premium efficiency | | | |
| **T3CR 801-2** | 0.75 kW | 80 | 2 | 2880 | 3ph cast iron motor | 19 | 15.2 | **3 570.00** |
| **T3CR 802-2** | 1.1 kW | 80 | 2 | 2880 | 3ph cast iron motor | 19 | 17.1 | **3 885.00** |
| **T3CR 90S-2** | 1.5 kW | 90S | 2 | 2880 | 3ph cast iron motor | 24 | 21.5 | **4 830.00** |
| **T3CR 90L-2** | 2.2 kW | 90L | 2 | 2880 | 3ph cast iron motor | 24 | 24.6 | **5 670.00** |
| **T3CR 100L-2** | 3 kW | 100L | 2 | 2900 | 3ph cast iron motor | 28 | 35.5 | **7 350.00** |
| **T3CR 112M-2** | 4 kW | 112M | 2 | 2910 | 3ph cast iron motor | 28 | 44.5 | **9 345.00** |
| **T3CR 132S1-2** | 5.5 kW | 132S | 2 | 2910 | 3ph cast iron motor | 38 | 63.2 | **12 600.00** |
| **T3CR 132S2-2** | 7.5 kW | 132S | 2 | 2920 | 3ph cast iron motor | 38 | 70.2 | **13 755.00** |
| **T3CR 160M1-2** | 11 kW | 160M | 2 | 2930 | 3ph cast iron motor | 42 | 118 | **24 675.00** |
| **T3CR 160M2-2** | 15 kW | 160M | 2 | 2940 | 3ph cast iron motor | 42 | 128 | **28 350.00** |
| **T3CR 160L-2** | 18.5 kW | 160L | 2 | 2940 | 3ph cast iron motor | 42 | 144 | **32 340.00** |
| **T3CR 180M-2** | 22 kW | 180M | 2 | 2945 | 3ph cast iron motor | 48 | 183 | **40 215.00** |
| **T3CR 200L1-2** | 30 kW | 200L | 2 | 2945 | 3ph cast iron motor | 55 | 247 | **50 400.00** |
| **T3CR 200L2-2** | 37 kW | 200L | 2 | 2945 | 3ph cast iron motor | 55 | 268 | **56 280.00** |
| **T3CR 225M-2** | 45 kW | 225M | 2 | 2950 | 3ph cast iron motor | 55 | 369 | **66 990.00** |
| **T3CR 250M1-2** | 55 kW | 250M | 2 | 2960 | 3ph cast iron motor | 60 | 428 | **83 685.00** |
| **T3CR 250M2-2** | 75 kW | 250M | 2 | 2960 | 3ph cast iron motor | 60 | 587 | **100 800.00** |
| **T3CR 280M1-2** | 90 kW | 280M | 2 | 2960 | 3ph cast iron motor | 65 | 655 | **118 650.00** |
| **T3CR 280M2-2** | 110 kW | 280M | 2 | 2960 | 3ph cast iron motor | 65 | 980 | **141 015.00** |
| **T3C 315M-2** | 132 kW | 315M | 2 | 2960 | 3ph cast iron motor | 65 | 1100 | **244 965.00** |
| **T3C 315L1-2** | 160 kW | 315L | 2 | 2960 | 3ph cast iron motor | 65 | 1155 | **266 595.00** |
| *Larger sizes available on request* | | | | | | | | |
| **4-pole** | **Three-phase motors** | | | | **IE3** - premium efficiency | | | |
| **T3CR 802-4** | 0.75 kW | 80 | 4 | 1420 | 3ph cast iron motor | 19 | 18.2 | **3 780.00** |
| **T3CR 90S-4** | 1.1 kW | 90S | 4 | 1430 | 3ph cast iron motor | 24 | 23.0 | **4 620.00** |
| **T3CR 90L-4** | 1.5 kW | 90L | 4 | 1430 | 3ph cast iron motor | 24 | 26.3 | **5 565.00** |
| **T3CR 100L1-4** | 2.2 kW | 100L | 4 | 1430 | 3ph cast iron motor | 28 | 35.5 | **7 035.00** |
| **T3CR 100L2-4** | 3 kW | 100L | 4 | 1435 | 3ph cast iron motor | 28 | 38.5 | **7 980.00** |
| **T3CR 112M-4** | 4 kW | 112M | 4 | 1440 | 3ph cast iron motor | 28 | 47.0 | **10 185.00** |
| **T3CR 132S-4** | 5.5 kW | 132S | 4 | 1440 | 3ph cast iron motor | 38 | 68.3 | **12 915.00** |
| **T3CR 132M1-4** | 7.5 kW | 132M | 4 | 1440 | 3ph cast iron motor | 38 | 79 | **15 120.00** |
| **T3CR 160M-4** | 11 kW | 160M | 4 | 1450 | 3ph cast iron motor | 42 | 127 | **24 570.00** |
| **T3CR 160L-4** | 15 kW | 160L | 4 | 1450 | 3ph cast iron motor | 42 | 160 | **29 190.00** |
| **T3CR 180M-4** | 18.5 kW | 180M | 4 | 1460 | 3ph cast iron motor | 48 | 170 | **35 910.00** |
| **T3CR 180L-4** | 22 kW | 180L | 4 | 1460 | 3ph cast iron motor | 48 | 196 | **40 320.00** |
| **T3CR 200L1-4** | 30 kW | 200L | 4 | 1470 | 3ph cast iron motor | 55 | 252 | **52 605.00** |
| **T3CR 225S-4** | 37 kW | 225S | 4 | 1470 | 3ph cast iron motor | 60 | 325 | **64 155.00** |
| **T3CR 225M1-4** | 45 kW | 225M | 4 | 1470 | 3ph cast iron motor | 60 | 353 | **71 715.00** |
| **T3CR 250M1-4** | 55 kW | 250M | 4 | 1470 | 3ph cast iron motor | 65 | 428 | **88 200.00** |
| **T3CR 250M2-4** | 75 kW | 250M | 4 | 1480 | 3ph cast iron motor | 75 | 674 | **102 795.00** |
| **T3CR 280M1-4** | 90 kW | 280M | 4 | 1480 | 3ph cast iron motor | 75 | 692 | **125 370.00** |
| **T3CR 280M2-4** | 110 kW | 280M | 4 | 1480 | 3ph cast iron motor | 80 | 1027 | **155 505.00** |
| **T3C 315M-4** | 132 kW | 315M | 4 | 1480 | 3ph cast iron motor | 80 | 1155 | **246 960.00** |
| **T3C 315L1-4** | 160 kW | 315L | 4 | 1480 | 3ph cast iron motor | 80 | 1240 | **271 845.00** |
| **T3C 315L3-4** | 200 kW | 315L | 4 | 1480 | 3ph cast iron motor | 80 | 1400 | **292 845.00** |
| **T3C 355M1-4** | 220 kW | 355M | 4 | 1480 | 3ph cast iron motor | 95 | 1560 | **429 555.00** |
| **T3C 355M2-4** | 250 kW | 355M | 4 | 1480 | 3ph cast iron motor | 95 | 1600 | **440 685.00** |
| **T3C 355L1-4** | 280 kW | 355L | 4 | 1480 | 3ph cast iron motor | 95 | 1650 | **473 865.00** |
| **T3C 355L2-4** | 315 kW | 355L | 4 | 1480 | 3ph cast iron motor | 95 | 1700 | **507 150.00** |
| **T3C 355L3-4** | 355 kW | 355L | 4 | 1480 | 3ph cast iron motor | 95 | 1700 | **553 875.00** |
| *Larger sizes available on request* | | | | | | | | |



Above ZAR prices do not include VAT. E&OE

## Electric Motors (Cast iron frame) - IE3 top premium efficiency

TechTop electric motors conform to IEC standards, guaranteeing quality and reliability. Ideally suited for commercial, manufacturing, construction, and agricultural irrigation applications.

- Suitable for VSD use *(class H insulation rating)*
- In accordance with **SANS/IEC 60034-2-1** standards

### Three-phase cast iron motors

**Foot mounting (B3)**

Protection degree: IP55
Insulation class: H (180°C) / ambient temperature 40°C
Colour: RAL 7024 *(graphite grey)*
**Δ** 220-240V *(or)* **Y** 380-415V 50Hz *(frame 80 - 100)*
**Δ** 380-415V *(or)* **Y** 660-690V 50Hz *(frame 112 - 355)*


T3CR 90L-6

| Type | output (kW) | frame size | pole | speed RPM | description | shaft Ø (mm) | weight (kg) | price |
|---|---|---|---|---|---|---|---|---|
| **6 pole** | **Three-phase motors** | | | | | **IE3** - premium efficiency | | |
| **T3CR 90S-6** | 0.75 kW | 90S | 6 | 935 | 3ph cast iron motor | 24 | 21.5 | **4 725.00** |
| **T3CR 90L-6** | 1.1 kW | 90L | 6 | 940 | 3ph cast iron motor | 24 | 25.5 | **5 880.00** |
| **T3CR 100L-6** | 1.5 kW | 100L | 6 | 940 | 3ph cast iron motor | 28 | 33.5 | **6 720.00** |
| **T3CR 112M-6** | 2.2 kW | 112M | 6 | 940 | 3ph cast iron motor | 28 | 40.0 | **8 715.00** |
| **T3CR 132S-6** | 3 kW | 132S | 6 | 940 | 3ph cast iron motor | 38 | 59.0 | **11 760.00** |
| **T3CR 132M1-6** | 4 kW | 132M | 6 | 950 | 3ph cast iron motor | 38 | 75.5 | **13 545.00** |
| **T3CR 132M2-6** | 5.5 kW | 132M | 6 | 950 | 3ph cast iron motor | 38 | 76.3 | **15 645.00** |
| **T3CR 160M-6** | 7.5 kW | 160M | 6 | 960 | 3ph cast iron motor | 42 | 112 | **23 520.00** |
| **T3CR 160L-6** | 11 kW | 160L | 6 | 960 | 3ph cast iron motor | 42 | 134 | **28 560.00** |
| **T3CR 180L-6** | 15 kW | 180L | 6 | 960 | 3ph cast iron motor | 48 | 185 | **37 380.00** |
| **T3CR 200L1-6** | 18.5 kW | 200L | 6 | 970 | 3ph cast iron motor | 55 | 231 | **45 885.00** |
| **T3CR 200L2-6** | 22 kW | 200L | 6 | 970 | 3ph cast iron motor | 55 | 249 | **49 560.00** |
| **T3CR 225M-6** | 30 kW | 225M | 6 | 975 | 3ph cast iron motor | 60 | 339 | **64 470.00** |
| **T3CR 250M1-6** | 37 kW | 250M | 6 | 975 | 3ph cast iron motor | 65 | 399 | **81 795.00** |
| **T3CR 250M2-6** | 45 kW | 250M | 6 | 980 | 3ph cast iron motor | 75 | 551 | **92 190.00** |
| **T3CR 280M1-6** | 55 kW | 280M | 6 | 980 | 3ph cast iron motor | 75 | 624 | **113 190.00** |
| **T3CR 280M2-6** | 75 kW | 280M | 6 | 980 | 3ph cast iron motor | 80 | 860 | **141 540.00** |
| **T3C 315M-6** | 90 kW | 315M | 6 | 980 | 3ph cast iron motor | 80 | 970 | **241 920.00** |
| **T3C 315L1-6** | 110 kW | 315L | 6 | 980 | 3ph cast iron motor | 80 | 1070 | **269 955.00** |
| **T3C 315L2-6** | 132 kW | 315L | 6 | 980 | 3ph cast iron motor | 80 | 1196 | **295 890.00** |
| **T3C 355M1-6** | 160 kW | 355M | 6 | 980 | 3ph cast iron motor | 95 | 1537 | **412 860.00** |

*Larger sizes available on request*


ML90L-2

| **Aluminium- Single-phase electric motors** | | | | | | **IE1** - standard efficiency | | |
|---|---|---|---|---|---|---|---|---|
| **ML711-2** | 0.37 kW | 71 | 2 | 2780 | 1ph aluminium motor | 14 | 6.1 | **3 150.00** |
| **ML712-2** | 0.55 kW | 71 | 2 | 2790 | 1ph aluminium motor | 14 | 7.0 | **3 465.00** |
| **ML801-2** | 0.75 kW | 80 | 2 | 2840 | 1ph aluminium motor | 19 | 9.0 | **4 410.00** |
| **ML802-2** | 1.1 kW | 80 | 2 | 2850 | 1ph aluminium motor | 19 | 10.3 | **4 935.00** |
| **ML90S-2** | 1.5 kW | 90S | 2 | 2860 | 1ph aluminium motor | 24 | 13.8 | **6 300.00** |
| **ML90L-2** | 2.2 kW | 90L | 2 | 2850 | 1ph aluminium motor | 24 | 16.8 | **7 455.00** |
| **4-pole** | **Single - phase motors** | | | | | **IE1** - standard efficiency | | |
| **ML711-4** | 0.25 kW | 71 | 4 | 1415 | 1ph aluminium motor | 14 | 5.9 | **3 255.00** |
| **ML712-4** | 0.37 kW | 71 | 4 | 1410 | 1ph aluminium motor | 14 | 6.9 | **3 570.00** |
| **ML801-4** | 0.55 kW | 80 | 4 | 1420 | 1ph aluminium motor | 19 | 9.6 | **4 515.00** |
| **ML802-4** | 0.75 kW | 80 | 4 | 1420 | 1ph aluminium motor | 19 | 10.9 | **4 935.00** |
| **ML90S-4** | 1.1 kW | 90S | 4 | 1420 | 1ph aluminium motor | 24 | 13.8 | **6 720.00** |
| **ML90L-4** | 1.5 kW | 90L | 4 | 1420 | 1ph aluminium motor | 24 | 16.7 | **7 770.00** |
| **ML100L1-4** | 2.2 kW | 100L | 4 | 1440 | 1ph aluminium motor | 28 | 22.8 | **9 975.00** |

**Aluminium motors** *(Totally Enclosed Fan Cooled) (TEFC)*

**Foot mounting (B3)**

- High performance and efficiency
- Removable feet - terminal boxes can be side or top of motor
- Continuous duty service factor - S1
- Suitable for VSD use *(class H insulation rating)*
- In accordance with **SANS/IEC 60034-2-1** standards
- Colour: RAL 7024 *(graphite grey)*

Protection degree: IP55
Insulation class: F (155°C)

### Single-phase electric motors

**220V - High torque motor** *(capacitor start and run)*




## Electric Motors (Cast iron frame)

TechTop electric motors conform to IEC standards, guaranteeing quality and reliability. Ideally suited for commercial, manufacturing, construction, and agricultural irrigation applications.

### Cast Iron motors - IE3 top premium efficiency

- High performance and efficiency
- Removable feet terminal boxes can be side or top of motor
- Continuous duty service factor - S1
- Thermistors fitted as standard *(frame 160 to 355)*
- Electrically insulated non-drive end bearings *(frame 315 and above)*
- Suitable for VSD use *(class H insulation rating)*
- In accordance with SANS/IEC 60034-2-1 standards

### Three-phase cast iron motors

### Flange/Foot mounting (B35)

Protection degree: IP55
Insulation class: **H** (180°C) / ambient temperature 40°C
Colour: RAL 7024 *(graphite grey)*
**Δ** 220-240V *(or)* **Y** 380-415V 50Hz *(frame 80 - 100)*
**Δ** 380-415V *(or)* **Y** 660-690V 50Hz *(frame 112 - 355)*



T3CR 90S-2 B5


T3C 315L1-2 B5



T3C 315L1-4 B5

| Type | output (kW) | frame size | pole | speed RPM | description | shaft Ø (mm) | weight (kg) | price |
|---|---|---|---|---|---|---|---|---|
| **2-pole** | **Three-phase motors** | | | | | **IE3** - premium efficiency | | |
| **T3CR 801-2 B5*** | 0.75 kW | 80 | 2 | 2880 | 3ph cast iron motor | 19 | 15.2 | **4 200.00** |
| **T3CR 802-2 B5*** | 1.1 kW | 80 | 2 | 2880 | 3ph cast iron motor | 19 | 17.1 | **4 515.00** |
| **T3CR 90S-2 B5*** | 1.5 kW | 90S | 2 | 2880 | 3ph cast iron motor | 24 | 21.5 | **5 565.00** |
| **T3CR 90L-2 B5*** | 2.2 kW | 90L | 2 | 2880 | 3ph cast iron motor | 24 | 24.6 | **6 405.00** |
| **T3CR 100L-2 B5*** | 3 kW | 100L | 2 | 2900 | 3ph cast iron motor | 28 | 35.5 | **8 295.00** |
| **T3CR 112M-2 B5*** | 4 kW | 112M | 2 | 2910 | 3ph cast iron motor | 28 | 44.5 | **10 395.00** |
| **T3CR 132S1-2 B5*** | 5.5 kW | 132S | 2 | 2910 | 3ph cast iron motor | 38 | 63.2 | **13 860.00** |
| **T3CR 132S2-2 B5*** | 7.5 kW | 132S | 2 | 2920 | 3ph cast iron motor | 38 | 70.2 | **15 015.00** |
| **T3CR 160M1-2 B5*** | 11 kW | 160M | 2 | 2930 | 3ph cast iron motor | 42 | 118 | **25 935.00** |
| **T3CR 160M2-2 B5*** | 15 kW | 160M | 2 | 2940 | 3ph cast iron motor | 42 | 128 | **30 660.00** |
| **T3CR 160L-2 B5*** | 18.5 kW | 160L | 2 | 2940 | 3ph cast iron motor | 42 | 144 | **34 650.00** |
| **T3CR 180M-2 B5** | 22 kW | 180M | 2 | 2945 | 3ph cast iron motor | 48 | 183 | **43 155.00** |
| **T3CR 200L1-2 B5** | 30 kW | 200L | 2 | 2945 | 3ph cast iron motor | 55 | 247 | **54 495.00** |
| **T3CR 200L2-2 B5** | 37 kW | 200L | 2 | 2945 | 3ph cast iron motor | 55 | 268 | **60 375.00** |
| **T3CR 225M-2 B5** | 45 kW | 225M | 2 | 2950 | 3ph cast iron motor | 55 | 369 | **71 295.00** |
| **T3CR 250M1-2 B5** | 55 kW | 250M | 2 | 2960 | 3ph cast iron motor | 60 | 428 | **89 355.00** |
| **T3CR 250M2-2 B5** | 75 kW | 250M | 2 | 2960 | 3ph cast iron motor | 60 | 587 | **106 470.00** |
| **T3CR 280M1-2 B5** | 90 kW | 280M | 2 | 2960 | 3ph cast iron motor | 65 | 655 | **125 475.00** |
| **T3CR 280M2-2 B5** | 110 kW | 280M | 2 | 2960 | 3ph cast iron motor | 65 | 980 | **147 840.00** |
| **T3C 315M-2 B5** | 132 kW | 315M | 2 | 2960 | 3ph cast iron motor | 65 | 1100 | **253 050.00** |
| **T3C 315L1-2 B5** | 160 kW | 315L | 2 | 2960 | 3ph cast iron motor | 65 | 1155 | **274 680.00** |
| *Larger sizes available on request* | | | | | | | | |
| **4-pole** | **Three-phase motors** | | | | | **IE3** - premium efficiency | | |
| **T3CR 802-4 B5*** | 0.75 kW | 80 | 4 | 1420 | 3ph cast iron motor | 19 | 18.2 | **4 410.00** |
| **T3CR 90S-4 B5*** | 1.1 kW | 90S | 4 | 1430 | 3ph cast iron motor | 24 | 23.0 | **5 355.00** |
| **T3CR 90L-4 B5*** | 1.5 kW | 90L | 4 | 1430 | 3ph cast iron motor | 24 | 26.3 | **6 300.00** |
| **T3CR 100L1-4 B5*** | 2.2 kW | 100L | 4 | 1430 | 3ph cast iron motor | 28 | 35.5 | **7 980.00** |
| **T3CR 100L2-4 B5*** | 3 kW | 100L | 4 | 1435 | 3ph cast iron motor | 28 | 38.5 | **8 925.00** |
| **T3CR 112M-4 B5*** | 4 kW | 112M | 4 | 1440 | 3ph cast iron motor | 28 | 47.0 | **11 235.00** |
| **T3CR 132S-4 B5*** | 5.5 kW | 132S | 4 | 1440 | 3ph cast iron motor | 38 | 68.3 | **14 175.00** |
| **T3CR 132M1-4 B5*** | 7.5 kW | 132M | 4 | 1440 | 3ph cast iron motor | 38 | 79 | **16 380.00** |
| **T3CR 160M-4 B5*** | 11 kW | 160M | 4 | 1450 | 3ph cast iron motor | 42 | 127 | **26 880.00** |
| **T3CR 160L-4 B5*** | 15 kW | 160L | 4 | 1450 | 3ph cast iron motor | 42 | 160 | **31 500.00** |
| **T3CR 180M-4 B5** | 18.5 kW | 180M | 4 | 1460 | 3ph cast iron motor | 48 | 170 | **38 850.00** |
| **T3CR 180L-4 B5** | 22 kW | 180L | 4 | 1460 | 3ph cast iron motor | 48 | 196 | **43 260.00** |
| **T3CR 200L1-4 B5** | 30 kW | 200L | 4 | 1470 | 3ph cast iron motor | 55 | 252 | **56 700.00** |
| **T3CR 225S-4 B5** | 37 kW | 225S | 4 | 1470 | 3ph cast iron motor | 60 | 325 | **68 460.00** |
| **T3CR 225M1-4 B5** | 45 kW | 225M | 4 | 1470 | 3ph cast iron motor | 60 | 353 | **76 020.00** |
| **T3CR 250M1-4 B5** | 55 kW | 250M | 4 | 1470 | 3ph cast iron motor | 65 | 428 | **93 870.00** |
| **T3CR 250M2-4 B5** | 75 kW | 250M | 4 | 1480 | 3ph cast iron motor | 75 | 674 | **108 465.00** |
| **T3CR 280M1-4 B5** | 90 kW | 280M | 4 | 1480 | 3ph cast iron motor | 75 | 692 | **132 300.00** |
| **T3CR 280M2-4 B5** | 110 kW | 280M | 4 | 1480 | 3ph cast iron motor | 80 | 1027 | **162 435.00** |
| **T3C 315M-4 B5** | 132 kW | 315M | 4 | 1480 | 3ph cast iron motor | 80 | 1155 | **255 045.00** |
| **T3C 315L1-4 B5** | 160 kW | 315L | 4 | 1480 | 3ph cast iron motor | 80 | 1240 | **279 930.00** |
| **T3C 315L3-4 B5** | 200 kW | 315L | 4 | 1480 | 3ph cast iron motor | 80 | 1400 | **300 930.00** |
| **T3C 355M1-4 B5** | 220 kW | 355M | 4 | 1480 | 3ph cast iron motor | 95 | 1560 | **441 105.00** |
| **T3C 355L1-4 B5** | 280 kW | 355L | 4 | 1480 | 3ph cast iron motor | 95 | 1650 | **485 415.00** |
| **T3C 355L2-4 B5** | 315 kW | 355L | 4 | 1480 | 3ph cast iron motor | 95 | 1700 | **518 700.00** |

* *For **B14** flange replace **B5** with **B4**. Larger sizes available on request*



Above ZAR prices do not include VAT. E&OE

IP55 IE3 VFD Ready B5 Motors

## Electric Motors (Cast iron frame)

### Three-phase cast iron motors

**Flange/Foot mounting (B35)**

Protection degree: IP55
Insulation class: **H** (180°C) / ambient temperature 40°C
Colour: RAL 7024 *(graphite grey)*
**Δ** 220-240V *(or)* **Y** 380-415V 50Hz *(frame 80 - 100)*
**Δ** 380-415V *(or)* **Y** 660-690V 50Hz *(frame 112 - 355)*

New



T3CR 90L-6 B5

IE3 PREMIUM EFFICIENCY

| Type | output (kW) | frame size | pole | speed RPM | description | shaft Ø (mm) | weight (kg) | price |
|---|---|---|---|---|---|---|---|---|
| **6 pole** | **Three-phase motors** | | | | | **IE3** - premium efficiency | | |
| **T3CR 90S-6 B5*** | 0.75 | 90S | 6 | 935 | 3ph cast iron motor | 24 | 21.5 | **5 460.00** |
| **T3CR 90L-6 B5*** | 1.1 | 90L | 6 | 940 | 3ph cast iron motor | 24 | 25.5 | **6 615.00** |
| **T3CR 100L-6 B5*** | 1.5 | 100L | 6 | 940 | 3ph cast iron motor | 28 | 33.5 | **7 665.00** |
| **T3CR 112M-6 B5*** | 2.2 | 112M | 6 | 940 | 3ph cast iron motor | 28 | 40.0 | **9 765.00** |
| **T3CR 132S-6 B5*** | 3 | 132S | 6 | 940 | 3ph cast iron motor | 38 | 59.0 | **13 020.00** |
| **T3CR 132M1-6 B5*** | 4 | 132M | 6 | 950 | 3ph cast iron motor | 38 | 75.5 | **14 805.00** |
| **T3CR 132M2-6 B5*** | 5.5 | 132M | 6 | 950 | 3ph cast iron motor | 38 | 76.3 | **16 905.00** |
| **T3CR 160M-6 B5*** | 7.5 | 160M | 6 | 960 | 3ph cast iron motor | 42 | 112 | **25 830.00** |
| **T3CR 160L-6 B5*** | 11 | 160L | 6 | 960 | 3ph cast iron motor | 42 | 134 | **30 870.00** |
| **T3CR 180L-6 B5** | 15 | 180L | 6 | 960 | 3ph cast iron motor | 48 | 185 | **40 320.00** |
| **T3CR 200L1-6 B5** | 18.5 | 200L | 6 | 970 | 3ph cast iron motor | 55 | 231 | **49 980.00** |
| **T3CR 200L2-6 B5** | 22 | 200L | 6 | 970 | 3ph cast iron motor | 55 | 249 | **53 655.00** |
| **T3CR 225M-6 B5** | 30 | 225M | 6 | 975 | 3ph cast iron motor | 60 | 339 | **68 775.00** |
| **T3CR 250M1-6 B5** | 37 | 250M | 6 | 975 | 3ph cast iron motor | 65 | 399 | **87 465.00** |
| **T3CR 250M2-6 B5** | 45 | 250M | 6 | 980 | 3ph cast iron motor | 75 | 551 | **97 860.00** |
| **T3CR 280M1-6 B5** | 55 | 280M | 6 | 980 | 3ph cast iron motor | 75 | 624 | **120 120.00** |
| **T3CR 280M2-6 B5** | 75 | 280M | 6 | 980 | 3ph cast iron motor | 80 | 860 | **148 470.00** |
| **T3C 315M-6 B5** | 90 | 315M | 6 | 980 | 3ph cast iron motor | 80 | 970 | **250 005.00** |
| **T3C 315L1-6 B5** | 110 | 315L | 6 | 980 | 3ph cast iron motor | 80 | 1070 | **278 040.00** |
| **T3C 315L2-6 B5** | 132 | 315L | 6 | 980 | 3ph cast iron motor | 80 | 1196 | **303 975.00** |
| **T3C 355M1-6 B5** | 160 | 355M | 6 | 980 | 3ph cast iron motor | 95 | 1537 | **424 410.00** |

* *For **B14** flange replace B5 with **B4**, larger sizes available on request*

IE1 EFFICIENCY Al Aluminium



T3C 315L1-6 B5

## Aluminium - Single-phase electric motors

**Aluminium motors** *(Totally Enclosed Fan Cooled) (TEFC)*

**Flange/Foot mounting (B35)**

Protection degree: IP55
Insulation Class: **F** (155°C)

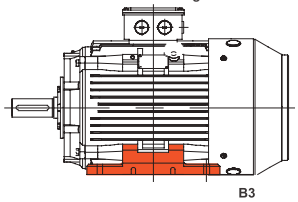
**Single-phase electric motors**

**220V - High torque motor** *(capacitor start and run)*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **2-pole** | **Single-phase motors** | | | | | **IE1** - standard efficiency | | |
| **ML711-2 B5** | 0.37 | 71 | 2 | 2780 | 1ph aluminium motor | 14 | 6.1 | **3 570.00** |
| **ML712-2 B5** | 0.55 | 71 | 2 | 2790 | 1ph aluminium motor | 14 | 7.0 | **3 885.00** |
| **ML801-2 B5** | 0.75 | 80 | 2 | 2840 | 1ph aluminium motor | 19 | 9.0 | **5 040.00** |
| **ML802-2 B5** | 1.1 | 80 | 2 | 2850 | 1ph aluminium motor | 19 | 10.3 | **5 565.00** |
| **ML90S-2 B5** | 1.5 | 90S | 2 | 2860 | 1ph aluminium motor | 24 | 13.8 | **7 035.00** |
| **ML90L-2 B5** | 2.2 | 90L | 2 | 2850 | 1ph aluminium motor | 24 | 16.8 | **8 190.00** |
| **4-pole** | **Single-phase motors** | | | | | **IE1** - standard efficiency | | |
| **ML711-4 B5** | 0.25 | 71 | 4 | 1415 | 1ph aluminium motor | 14 | 5.9 | **3 675.00** |
| **ML712-4 B5** | 0.37 | 71 | 4 | 1410 | 1ph aluminium motor | 14 | 6.9 | **3 990.00** |
| **ML801-4 B5** | 0.55 | 80 | 4 | 1420 | 1ph aluminium motor | 19 | 9.6 | **5 145.00** |
| **ML802-4 B5** | 0.75 | 80 | 4 | 1420 | 1ph aluminium motor | 19 | 10.9 | **5 565.00** |
| **ML90S-4 B5** | 1.1 | 90S | 4 | 1420 | 1ph aluminium motor | 24 | 13.8 | **7 455.00** |
| **ML90L-4 B5** | 1.5 | 90L | 4 | 1420 | 1ph aluminium motor | 24 | 16.7 | **8 505.00** |
| **ML100L1-4 B5** | 2.2 | 100L | 4 | 1440 | 1ph aluminium motor | 28 | 22.8 | **11 025.00** |

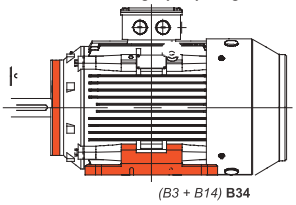
### Mounting options

Foot mounting



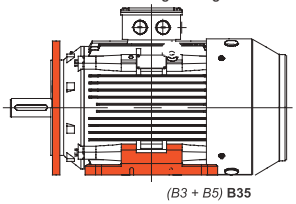
**B3**

Foot mounting + (face) Flange



*(B3 + B14)* **B34**

Foot mounting + Flange



*(B3 + B5)* **B35**

## Spare parts for motors

Spare parts for motors are available from our stocks and can be ordered *(see below examples)* as replacement parts for damaged components on the motor.

**Example 1:** Spare terminal box for **TC90** frame size, the ordering code is: **TC80/90/100TB**
**Example 2:** B5 flange for **TC250-2P** frame size, the ordering code is: **TC250-2PB5**

| | | TC80 | TC90 | TC100 | TC112 | TC132 | TC160 | TC180 | TC200 | TC225 | TC250 | TC280S | TC280M | TC315-2P | TC315-4/6P | TC355-2P | TC355-4/6P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Auxiliary Box | AB | MS56 | | | | | | | | | | | | | | | |
| | | 210.00 | | | | | | | | | | | | | | | |
| Terminal Box | TB | TC80/90/100 | | | | | TC160/180 | | | | TC250/280S | | | TC315 | | TC355 | |
| | | 630.00 | | | 630.00 | 3.00 | 1 260.00 | | 2 100.00 | 2 100.00 | 2 940.00 | | 2 940.00 | 2 940.00 | | 3 885.00 | |
| Terminal Block | TBL | TC80/90/100 | | | TC112/132 | | TC160/180 | | TC200/225 | | TC250/280S | | | TC315 | | TC355 | |
| | | 210.00 | | | 210.00 | | 420.00 | | 630.00 | | 945.00 | | 945.00 | 630.00 | | 2 100.00 | |
| Rubber Seal | RS | TC80/90/100 | | | TC112/132 | | TC160/180 | | TC200/225 | | TC250/280S | | | TC315 | | TC355 | |
| | | 105.00 | | | 105.00 | | 105.00 | | 105.00 | | 105.00 | | 105.00 | 210.00 | | 315.00 | |
| Plastic Fan | PF | T1C80 | T1C90 | T1C100 | T1C112 | T1C132 | T1C160 | T1C180 | T1C200 | T1C225 | T1C250 | T1C280 | | | T1C315/355-4P | T1C355-2P | T1C 315/355-6P |
| | | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | 210.00 | 315.00 | 420.00 | 420.00 | 630.00 | 630.00 | | 630.00 | 1 260.00 | 630.00 | 1 365.00 |
| Fan Cover | FC | 105.00 | 210.00 | 210.00 | 210.00 | 315.00 | 525.00 | 630.00 | 840.00 | 1 260.00 | 1 680.00 | TC280 | | 3 255.00 | 3 255.00 | 3 255.00 | 4 200.00 |
| | | | | | | | | | | | | 2 100.00 | | | | | |
| Rain Cover | RFC | 210.00 | 210.00 | 315.00 | 315.00 | 420.00 | 840.00 | 945.00 | 1 260.00 | 1 785.00 | 2.520.00 | TC280 | | 4 620.00 | 4 620.00 | 4 200.00 | 4 200.00 |
| | | | | | | | | | | | | 3 150.00 | | | | | |
| End Shield (NE & NDE) | ES | 210.00 | 210.00 | 315.00 | 420.00 | 630.00 | 1 050.00 | 1 470.00 | 1 995.00 | 2 520.00 | | | | | | | |
| End Shield (Drive End) | ESDE | | | | | | | | | | TC250-2P | TC250-4/6P | TC280-2P | TC280-4/6P | TC315-2P | TC315-4/6P | TC355-2P | TC355-4/6P |
| | | | | | | | | | | | 3 150.00 | 3 255.00 | 3 885.00 | 3 885.00 | 6 405.00 | 6 405.00 | 6 300.00 | 6 300.00 |
| End Shield (Non-Drive End) | ESND | | | | | | | | | | | | TC280 | | TC315 | | TC355 | |
| | | | | | | | | | | | 3 150.00 | | 3 885.00 | | 6 405.00 | | 6 300.00 | |
| Bearing Cover | BC | | | | | | 315.00 | 420.00 | 525.00 | 630.00 | 735.00 | | TC280 | | TC315 | | TC355 | |
| | | | | | | | | | | | | | 1 050.00 | | 1 680.00 | | 2 100.00 | |
| Oil Seal | OS | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | 105.00 | POR | POR | | POR | | POR | | POR | |
| B5 Flange | B5 | | | | | | | | | | TC250-2P | TC250-4/6P | TC280-2P | TC280-4/6P | | | | |
| | | 630.00 | 735.00 | 945.00 | 1 050.00 | 1 260.00 | 2 310.00 | 2 940.00 | 4 095.00 | 4 305.00 | 5 670.00 | 5 670.00 | 6 825.00 | 6 930.00 | 8 085.00 | 8 085.00 | 11 550.00 | 11 550.00 |
| B14 Flange | B14 | 315.00 | 315.00 | 420.00 | 525.00 | 735.00 | 1 785.00 | | | | | | | | | | | |
| Removable Feet | RF | POR | | | | | | | | | | | | | | | | |



G-355C...


Terminal block


Terminal box


B14 Flange

## Forced cooling kit for cast iron motors

Forced cooling is recommended when the motor speed is below 25 Hz to compensate for the reduced cooling capacity of the motor at lower speeds.

| Frame size | pole | frame | description | power (W) | phase | voltage | Hz | price |
|---|---|---|---|---|---|---|---|---|
| **Three-phase forced cooling kits** *(Cast Iron Motors)* | | | | | | | | |
| **G-80C** | 2/4/6 | 80 | forced cooling kit | 37 | 3-ph | 400 | 50 | **3 780.00** |
| **G-90C** | 2/4/6 | 90 | forced cooling kit | 45 | 3-ph | 400 | 50 | **3 780.00** |
| **G-100C** | 2/4/6 | 100 | forced cooling kit | 72 | 3-ph | 400 | 50 | **4 725.00** |
| **G-112C** | 2/4/6 | 112 | forced cooling kit | 85 | 3-ph | 400 | 50 | **5 040.00** |
| **G-132C** | 2/4/6 | 132 | forced cooling kit | 50 | 3-ph | 400 | 50 | **6 195.00** |
| **G-160C** | 2/4/6 | 132 | forced cooling kit | 60 | 3-ph | 400 | 50 | **5 880.00** |
| **G-180C** | 2/4/6 | 180 | forced cooling kit | 80 | 3-ph | 400 | 50 | **7 770.00** |
| **G-200C** | 2/4/6 | 200 | forced cooling kit | 110 | 3-ph | 400 | 50 | **9 870.00** |
| **G-225C** | 2/4/6 | 225 | forced cooling kit | 170 | 3-ph | 400 | 50 | **11 760.00** |
| **G-250C** | 2/4/6 | 250 | forced cooling kit | 200 | 3-ph | 400 | 50 | **13 965.00** |
| **G-280C** | 2/4/6 | 280 | forced cooling kit | 200 | 3-ph | 400 | 50 | **14 175.00** |
| **G-315C2P** | 2 | 315 | forced cooling kit | 350 | 3-ph | 400 | 50 | **15 330.00** |
| **G-315C4/6P** | 4/6 | 315 | forced cooling kit | 350 | 3-ph | 400 | 50 | **15 330.00** |
| **G-355C2P** | 2 | 355 | forced cooling kit | 280 | 3-ph | 400 | 50 | **16 170.00** |
| **G-355C4/6P** | 4/6 | 355 | forced cooling kit | 280 | 3-ph | 400 | 50 | **16 170.00** |

## Modifications: Optional features

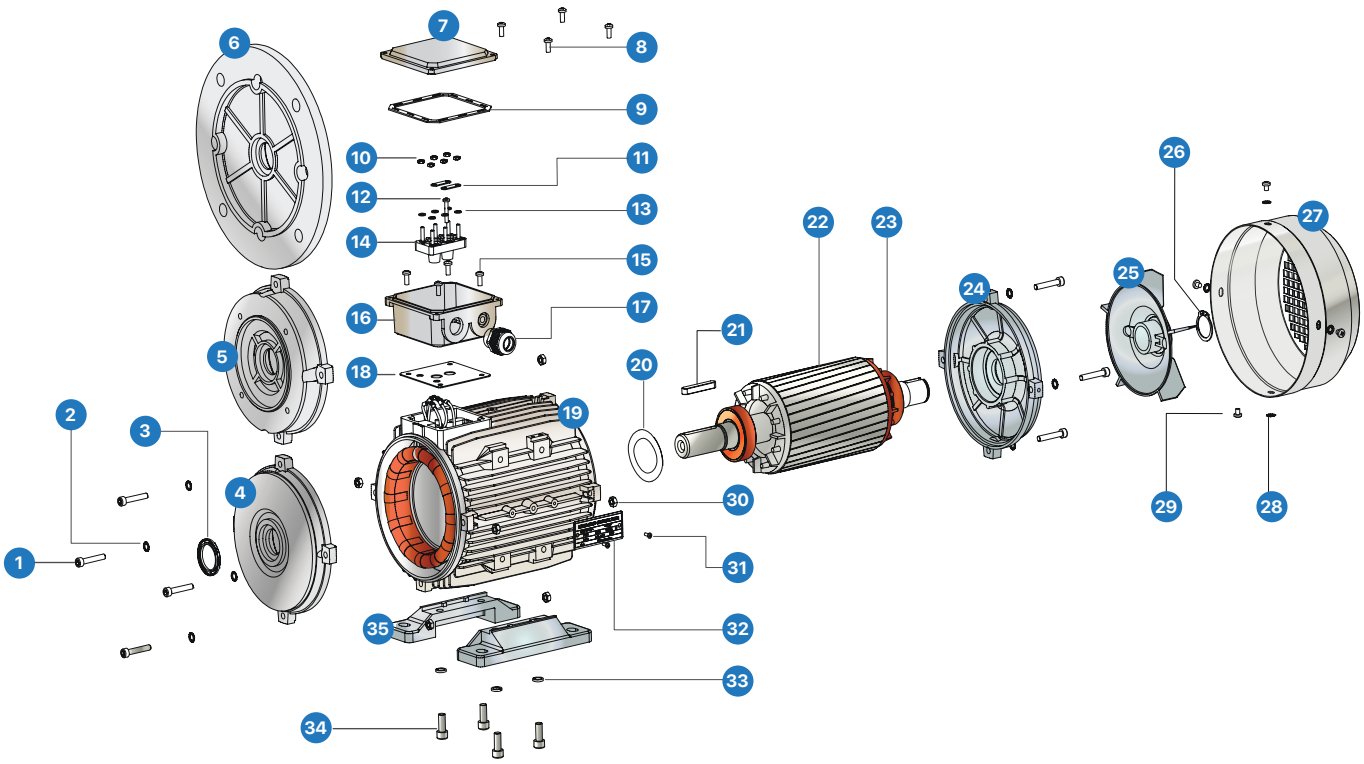
Available on request by special order. Contact us for assistance and a quotation.

| | | Frame size | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 200 | 225 | 250 | 280 | 315 | 355 |
| IP65 Upgrade | | – | – | – | – | – | * | * | * | * | * | * | * | * | * |
| Insulated NDE Bearing | | – | – | – | – | – | – | * | * | * | * | * | * | STD | STD |
| Insulated DE Bearing | | – | – | – | – | – | – | * | * | * | * | * | * | * | * |
| Thermistor | | – | – | – | * | * | * | STD | STD | STD | STD | STD | STD | STD | STD |
| 1x PT100 per Bearing | | – | – | – | – | – | * | * | * | * | * | * | * | * | * |
| 2x PT100 per Bearing | | – | – | – | – | – | * | * | * | * | * | * | * | * | * |
| 1x PT100 per Winding | | – | – | – | – | – | – | * | * | * | * | * | * | * | * |
| 2x PT100 per Winding | | – | – | – | – | – | – | * | * | * | * | * | * | * | * |
| Space Heater | | – | – | – | – | – | * | * | * | * | * | * | * | * | * |



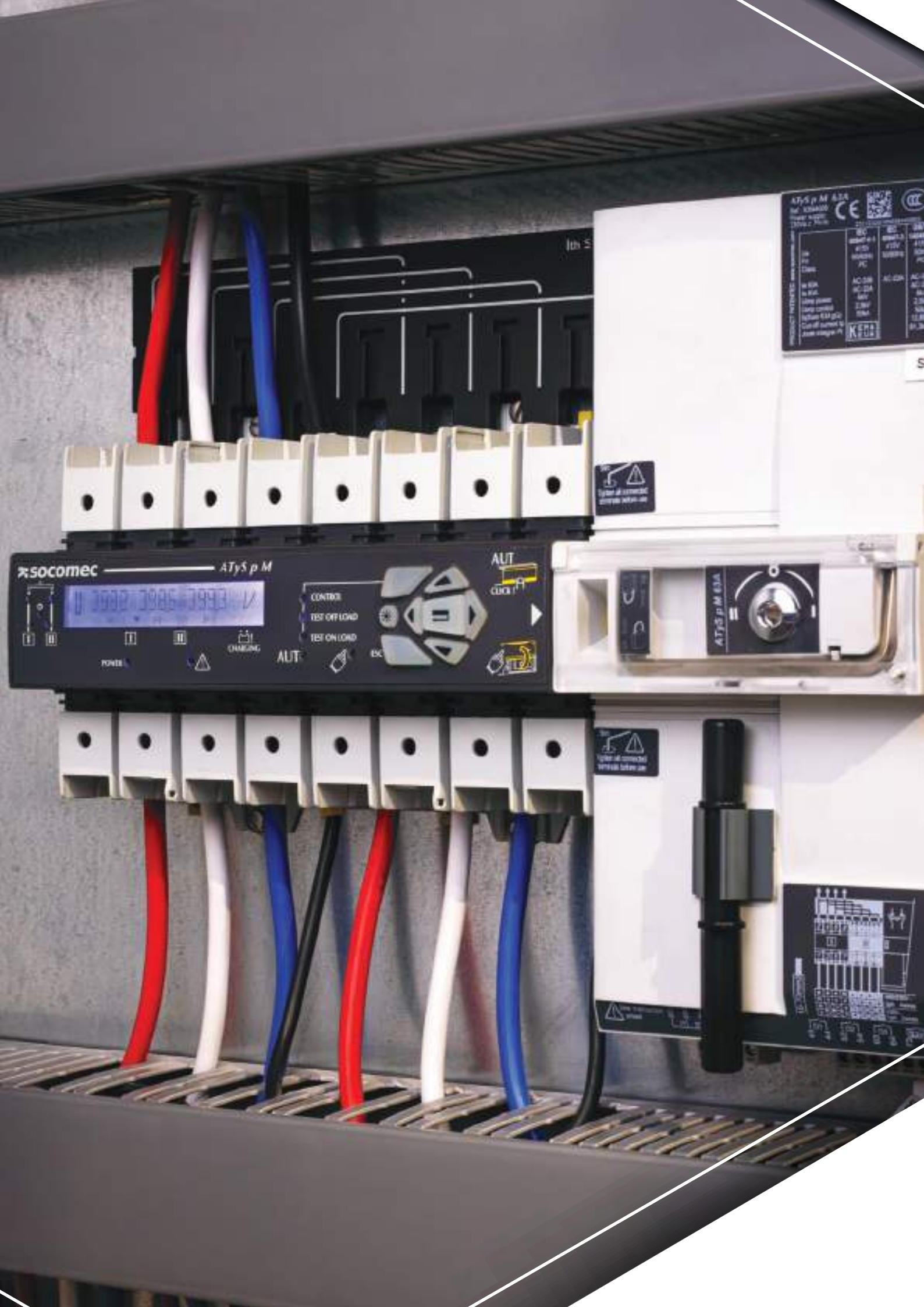
Above ZAR prices do not include VAT. E&OE

## Electric motor exploded view




Illustrated reference guide

1. Screw
2. Washer
3. Oil seal
4. Front endshield
5. B14 flange
6. B5 flange
7. Terminal cover
8. Box cover fixing screws
9. TB upper gasket
10. Terminal board fixing nut
11. Terminal bridge
12. Terminal pin
13. Terminal shim
14. Terminal board
15. Terminal box fixing screws
16. Terminal block base
17. Cable gland
18. Terminal box bottom gasket
19. Motor frame
20. Preload washer
21. Shaft key
22. Rotor
23. Bearing
24. Non drive-end (NDE) endshield
25. Cooling fan
26. Fan circlip
27. Fan cover
28. Fan cover fixing shim
29. Fan cover fixing screws
30. Endshield fixing nut
31. Rivet
32. Motor nameplate
33. Foot fixing nut
34. Foot fixing screws
35. Foot


socomec
ATyS p M
CONTROL
TEST OFF LOAD
TEST ON LOAD
AUT
CLICK
ESC
CHARGING
POWER
ATyS p M 63A




# B

# Power Distribution & Protection

Interactive Catalogue



# Power Distribution & Protection

B

## B1 Miniature Circuit Breakers & Accessories



Miniature circuit breakers

B-1...7/10



Earth leakage protection

B-8...9/11...12

## B2 Moulded Case Circuit Breakers & Air Circuit Breakers



Moulded case circuit breakers

B-18...24



Air circuit breakers

B-26...30

## B3 Load break & Changeover Switches



Load break switches

B-31...35



Changeover switches

B-36...43

## B4 Fuse gear



Fuse links & Holders

B-45...57/62



Fuse switch disconnectors

B-44/59...61

## B5 Surge Protection Devices



Surge protection devices

B-63...64/66...67



Photovoltaic (PV) surge protection devices

B-65/68

## B6 Power Supplies



Power supplies (AC-DC)

B-69...72



Control and safety transformers

B-73

Need help navigating the interactive catalogue?
Scan the QR code for a short tutorial video.

# Miniature circuit breakers 3/6kA


MJT720


NCN232A


NRN320


NRN440

| Type | | MV | MJT | MA | NF/NFN | HLF | NGN | HMD | NCN | HMC | NRN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Poles | | 1 | 1 + N | 1, 2, 3, 4 | 1, 2, 3, 4 | 1, 2, 3, 4 | 1, 2, 3, 4 | 1, 2, 3, 4 | 1, 2, 3, 4 | 1, 2, 3, 4 | 1, 2, 3, 4 |
| Width per Pole in 17.5 mm | | 1 | 1 | 1 | 1 | 1.5 | 1 | 1.5 | 1 | 1.5 | 1 |
| Rated Current (A) | | 6 - 40A | 2 - 40A | 2 - 63A | 2 - 63A | 80 - 125A | 2 - 63A | 80 - 125A | 6 - 63A | 80 - 125A | 6 - 63A |
| Breaking capacity | | 3kA | 6kA | 6kA | 10kA | 10kA | 10kA | 15kA | 15kA | 15kA | 15 - 25kA |
| Tripping Curve | | C | C | C | C | C | D | D | C | C | C |
| Rated AC Voltage (V) | | 230 | 230 | 230/400 | 230/400 | 230/400 | 230/400 | 230/400 | 230/400 | 230/400 | 230/400 |
| DC Application *(refer **Annex-9**)* | | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Frequency (Hz) | | 50/60 | 50/60 | 50 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 |
| Add on Block *(Earth Leakage)* | | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Connecting Capacity (conductor) | Flexible (mm²) | 16 mm² | 10 mm² | 16 mm² | 25 mm² | 50 mm² | 25 mm² | 50 mm² | 25 mm² | 50 mm² | 25 mm² |
| | Rigid (mm²) | 25 mm² | 16 mm² | 25 mm² | 35 mm² | 70 mm² | 35 mm² | 70 mm² | 35 mm² | 70 mm² | 35 mm² |
| | | | | | | | | | | | |
| Isolation | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Page | | B-1 | B-1, B-8 | B-2 | B-3 | B-3 | B-4 | B-4 | B-5 | B-5 | B-6 |

## MV series — C curve *(5-10 In)*

Protection and control of circuits against overload and short circuits.
Suitable for residential and commercial installations.


MV116Z

**Breaking capacity:** **3kA** SANS/IEC 60947-2, SANS 556

- Does not accept clip-on accessories.

**Single pole**

| type | current rating | poles | breaking capacity | description | width in 17.5 mm | price |
|---|---|---|---|---|---|---|
| **MV106Z** | 6A | 1 | 3kA | miniature circuit breaker | 1 | **94.50** |
| **MV110Z** | 10A | 1 | 3kA | miniature circuit breaker | 1 | **94.50** |
| **MV116Z** | 16A | 1 | 3kA | miniature circuit breaker | 1 | **94.50** |
| **MV120Z** | 20A | 1 | 3kA | miniature circuit breaker | 1 | **94.50** |
| **MV125Z** | 25A | 1 | 3kA | miniature circuit breaker | 1 | **94.50** |
| **MV132Z** | 32A | 1 | 3kA | miniature circuit breaker | 1 | **94.50** |
| **MV140Z** | 40A | 1 | 3kA | miniature circuit breaker | 1 | **94.50** |

## MJT series — C curve *(5-10 In)*


MJT720

**Breaking capacity:** **6kA** SANS/IEC 60947-2, SANS 556

- Accepts clip-on: *(see MCB accessories)*
  - auxiliary/alarm contacts
  - shunt trip
  - undervoltage
  - overvoltage
- Accepts **BDC240F** earth leakage a compact device which simply clips on the side *(see accessories)*
- Trip indication - yellow flag on toggle indicates either "overload" or "short circuit" trip

**1 Ph+N** *in one module*

| | | | | | | |
|---|---|---|---|---|---|---|
| **MJT702** | 2A | 1+N | 6kA | miniature circuit breaker | 1 | **402.15** |
| **MJT706** | 6A | 1+N | 6kA | miniature circuit breaker | 1 | **313.95** |
| **MJT710** | 10A | 1+N | 6kA | miniature circuit breaker | 1 | **313.95** |
| **MJT716** | 16A | 1+N | 6kA | miniature circuit breaker | 1 | **313.95** |
| **MJT720** | 20A | 1+N | 6kA | miniature circuit breaker | 1 | **313.95** |
| **MJT725** | 25A | 1+N | 6kA | miniature circuit breaker | 1 | **313.95** |
| **MJT732** | 32A | 1+N | 6kA | miniature circuit breaker | 1 | **313.95** |
| **MJT740** | 40A | 1+N | 6kA | miniature circuit breaker | 1 | **313.95** |



Above ZAR prices do not include VAT. E&OE


MA163Z

**MA series** - *Miniature circuit breakers (MCBs)*

For the protection and control of circuits against overload and short circuits.
Suitable for residential, commercial and industrial installations.

- Compatible with DC voltage applications *(see chart **Annex-6**)*
- Cascading with MCCBs *(see chart **Annex-5**)*
- Suitable for isolation

**Voltage rating:** 230/400V 50-60Hz
**Current rating:** 2 - 63A

**Field fittable clip-on accessories** *(see MCB accessories)*
- auxiliary/alarm contacts
- shunt trip device
- undervoltage release
- overvoltage release
- earth leakage *(see accessories)*


MA206Z + MZ202


MA325Z


MA416Z

| type | current rating | poles | breaking capacity | description | width in 17.5 mm | price |
|---|---|---|---|---|---|---|
| **MA series** | | | **C curve** *(5-10 In)* | | | |
| **Breaking capacity:** | | | **6kA** | SANS/IEC 60947-2, SANS 556 | | |
| **Single pole** | | | | | | |
| **MA102Z** | 2A | 1 | 6kA | miniature circuit breaker | 1 | **210.00** |
| **MA106Z** | 6A | 1 | 6kA | miniature circuit breaker | 1 | **120.75** |
| **MA110Z** | 10A | 1 | 6kA | miniature circuit breaker | 1 | **120.75** |
| **MA116Z** | 16A | 1 | 6kA | miniature circuit breaker | 1 | **120.75** |
| **MA120Z** | 20A | 1 | 6kA | miniature circuit breaker | 1 | **120.75** |
| **MA125Z** | 25A | 1 | 6kA | miniature circuit breaker | 1 | **126.00** |
| **MA132Z** | 32A | 1 | 6kA | miniature circuit breaker | 1 | **126.00** |
| **MA140Z** | 40A | 1 | 6kA | miniature circuit breaker | 1 | **126.00** |
| **MA150Z** | 50A | 1 | 6kA | miniature circuit breaker | 1 | **178.50** |
| **MA163Z** | 63A | 1 | 6kA | miniature circuit breaker | 1 | **189.00** |
| **Two pole** | | | | | | |
| **MA202Z** | 2A | 2 | 6kA | miniature circuit breaker | 2 | **588.00** |
| **MA206Z** | 6A | 2 | 6kA | miniature circuit breaker | 2 | **399.00** |
| **MA210Z** | 10A | 2 | 6kA | miniature circuit breaker | 2 | **399.00** |
| **MA216Z** | 16A | 2 | 6kA | miniature circuit breaker | 2 | **399.00** |
| **MA220Z** | 20A | 2 | 6kA | miniature circuit breaker | 2 | **399.00** |
| **MA225Z** | 25A | 2 | 6kA | miniature circuit breaker | 2 | **420.00** |
| **MA232Z** | 32A | 2 | 6kA | miniature circuit breaker | 2 | **420.00** |
| **MA240Z** | 40A | 2 | 6kA | miniature circuit breaker | 2 | **420.00** |
| **MA250Z** | 50A | 2 | 6kA | miniature circuit breaker | 2 | **472.50** |
| **MA263Z** | 63A | 2 | 6kA | miniature circuit breaker | 2 | **493.50** |
| **Three pole** | | | | | | |
| **MA302Z** | 2A | 3 | 6kA | miniature circuit breaker | 3 | **945.00** |
| **MA306Z** | 6A | 3 | 6kA | miniature circuit breaker | 3 | **535.50** |
| **MA310Z** | 10A | 3 | 6kA | miniature circuit breaker | 3 | **535.50** |
| **MA316Z** | 16A | 3 | 6kA | miniature circuit breaker | 3 | **535.50** |
| **MA320Z** | 20A | 3 | 6kA | miniature circuit breaker | 3 | **535.50** |
| **MA325Z** | 25A | 3 | 6kA | miniature circuit breaker | 3 | **556.50** |
| **MA332Z** | 32A | 3 | 6kA | miniature circuit breaker | 3 | **556.50** |
| **MA340Z** | 40A | 3 | 6kA | miniature circuit breaker | 3 | **556.50** |
| **MA350Z** | 50A | 3 | 6kA | miniature circuit breaker | 3 | **630.00** |
| **MA363Z** | 63A | 3 | 6kA | miniature circuit breaker | 3 | **645.75** |
| **Four pole** | | | | | | |
| **MA406Z** | 6A | 4 | 6kA | miniature circuit breaker | 4 | **1 155.00** |
| **MA410Z** | 10A | 4 | 6kA | miniature circuit breaker | 4 | **1 155.00** |
| **MA416Z** | 16A | 4 | 6kA | miniature circuit breaker | 4 | **1 155.00** |
| **MA420Z** | 20A | 4 | 6kA | miniature circuit breaker | 4 | **1 155.00** |
| **MA425Z** | 25A | 4 | 6kA | miniature circuit breaker | 4 | **1 186.50** |
| **MA432Z** | 32A | 4 | 6kA | miniature circuit breaker | 4 | **1 186.50** |
| **MA440Z** | 40A | 4 | 6kA | miniature circuit breaker | 4 | **1 186.50** |
| **MA450Z** | 50A | 4 | 6kA | miniature circuit breaker | 4 | **1 218.00** |
| **MA463Z** | 63A | 4 | 6kA | miniature circuit breaker | 4 | **1 218.00** |

**MCB** poles




NFN163


NFN263


HLF290S


NFN363

**NF / NFN / HLF series** - *Miniature circuit breakers (MCBs)*

For the protection and control of circuits against overload and short circuits.
Suitable for residential, commercial and industrial installations.

- Compatible for DC voltage applications *(see chart **Annex-6**)*

**Field fittable clip-on accessories** *(see MCB accessories)*
- auxiliary/alarm contacts
- shunt trip device
- undervoltage release
- earth leakage

| type | current rating | poles | breaking capacity | description | width in 17.5 mm | price |
|---|---|---|---|---|---|---|
| **NF / NFN / HLF series** | | **C curve** *(5-10 In)* | | | | |
| **Breaking capacity:** | | | **10kA** | SANS / IEC 60947-2, SANS 556 | | |
| **Single pole** | | | | | | |
| **NF102A** | 2A | 1 | 10kA | miniature circuit breaker | 1 | **231.00** |
| **NF106A** | 6A | 1 | 10kA | miniature circuit breaker | 1 | **157.50** |
| **NF110A** | 10A | 1 | 10kA | miniature circuit breaker | 1 | **157.50** |
| **NF116A** | 16A | 1 | 10kA | miniature circuit breaker | 1 | **157.50** |
| **NF120A** | 20A | 1 | 10kA | miniature circuit breaker | 1 | **157.50** |
| **NF125A** | 25A | 1 | 10kA | miniature circuit breaker | 1 | **168.00** |
| **NF132A** | 32A | 1 | 10kA | miniature circuit breaker | 1 | **168.00** |
| **NF140A** | 40A | 1 | 10kA | miniature circuit breaker | 1 | **168.00** |
| **NFN150** | 50A | 1 | 10kA | miniature circuit breaker | 1 | **210.00** |
| **NFN163** | 63A | 1 | 10kA | miniature circuit breaker | 1 | **220.50** |
| **HLF180S** | 80A | 1 | 10kA | miniature circuit breaker | 1.5 | **829.50** |
| **HLF190S** | 100A | 1 | 10kA | miniature circuit breaker | 1.5 | **850.50** |
| **HLF199S** | 125A | 1 | 10kA | miniature circuit breaker | 1.5 | **1 102.50** |
| **Two pole** | | | | | | |
| **NF202A** | 2A | 2 | 10kA | miniature circuit breaker | 2 | **735.00** |
| **NF206A** | 6A | 2 | 10kA | miniature circuit breaker | 2 | **535.50** |
| **NF210A** | 10A | 2 | 10kA | miniature circuit breaker | 2 | **535.50** |
| **NF216A** | 16A | 2 | 10kA | miniature circuit breaker | 2 | **535.50** |
| **NF220A** | 20A | 2 | 10kA | miniature circuit breaker | 2 | **535.50** |
| **NF225A** | 25A | 2 | 10kA | miniature circuit breaker | 2 | **598.50** |
| **NF232A** | 32A | 2 | 10kA | miniature circuit breaker | 2 | **598.50** |
| **NF240A** | 40A | 2 | 10kA | miniature circuit breaker | 2 | **598.50** |
| **NFN250** | 50A | 2 | 10kA | miniature circuit breaker | 2 | **714.00** |
| **NFN263** | 63A | 2 | 10kA | miniature circuit breaker | 2 | **735.00** |
| **HLF280S** | 80A | 2 | 10kA | miniature circuit breaker | 3 | **1 554.00** |
| **HLF290S** | 100A | 2 | 10kA | miniature circuit breaker | 3 | **1 575.00** |
| **HLF299S** | 125A | 2 | 10kA | miniature circuit breaker | 3 | **1 953.00** |
| **Three pole** | | | | | | |
| **NF302A** | 2A | 3 | 10kA | miniature circuit breaker | 3 | **1 134.00** |
| **NF306A** | 6A | 3 | 10kA | miniature circuit breaker | 3 | **850.50** |
| **NF310A** | 10A | 3 | 10kA | miniature circuit breaker | 3 | **850.50** |
| **NF316A** | 16A | 3 | 10kA | miniature circuit breaker | 3 | **850.50** |
| **NF320A** | 20A | 3 | 10kA | miniature circuit breaker | 3 | **850.50** |
| **NF325A** | 25A | 3 | 10kA | miniature circuit breaker | 3 | **871.50** |
| **NF332A** | 32A | 3 | 10kA | miniature circuit breaker | 3 | **871.50** |
| **NF340A** | 40A | 3 | 10kA | miniature circuit breaker | 3 | **871.50** |
| **NFN350** | 50A | 3 | 10kA | miniature circuit breaker | 3 | **924.00** |
| **NFN363** | 63A | 3 | 10kA | miniature circuit breaker | 3 | **945.00** |
| **HLF380S** | 80A | 3 | 10kA | miniature circuit breaker | 4.5 | **1 974.00** |
| **HLF390S** | 100A | 3 | 10kA | miniature circuit breaker | 4.5 | **2 257.50** |
| **HLF399S** | 125A | 3 | 10kA | miniature circuit breaker | 4.5 | **2 992.50** |
| **Four pole** | | | | | | |
| **NF406A** | 6A | 4 | 10kA | miniature circuit breaker | 4 | **1 239.00** |
| **NF410A** | 10A | 4 | 10kA | miniature circuit breaker | 4 | **1 239.00** |
| **NF416A** | 16A | 4 | 10kA | miniature circuit breaker | 4 | **1 239.00** |
| **NF420A** | 20A | 4 | 10kA | miniature circuit breaker | 4 | **1 239.00** |
| **NF425A** | 25A | 4 | 10kA | miniature circuit breaker | 4 | **1 291.50** |
| **NF432A** | 32A | 4 | 10kA | miniature circuit breaker | 4 | **1 291.50** |
| **NF440A** | 40A | 4 | 10kA | miniature circuit breaker | 4 | **1 291.50** |
| **NFN450** | 50A | 4 | 10kA | miniature circuit breaker | 4 | **1 449.00** |
| **NFN463** | 63A | 4 | 10kA | miniature circuit breaker | 4 | **1 491.00** |
| **HLF480S** | 80A | 4 | 10kA | miniature circuit breaker | 6 | **5 040.00** |
| **HLF490S** | 100A | 4 | 10kA | miniature circuit breaker | 6 | **5 250.00** |
| **HLF499S** | 125A | 4 | 10kA | miniature circuit breaker | 6 | **7 003.50** |



Above ZAR prices do not include VAT. E&OE


NGN116


NGN216


NGN363


NGN410

**NGN / HMD series** - *Miniature circuit breakers (MCBs)*

For the protection and control of circuits against overload and short circuits.
Suitable for commercial and industrial installations.

- Compatible for DC voltage applications *(see chart **Annex-6**)*

**Field fittable clip-on accessories** *(see MCB accessories)*
- auxiliary/alarm contacts
- shunt trip device
- undervoltage release
- overvoltage release
- earth leakage

**Voltage rating:** 230/400V 50-60Hz

| type | current rating | poles | breaking capacity | description | width in 17.5 mm | price |
|---|---|---|---|---|---|---|
| **NGN / HMD series** | | **D curve** *(10-20 In)* | | | | |
| **Breaking capacity:** | | **NGN**:10kA / **HMD:** 15kA | | SANS/IEC 60947-2, SANS 556 | | |
| **Single pole** | | | | | | |
| **NGN102** | 2A | 1 | 10kA | miniature circuit breaker | 1 | **355.95** |
| **NGN104** | 4A | 1 | 10kA | miniature circuit breaker | 1 | **355.95** |
| **NGN106** | 6A | 1 | 10kA | miniature circuit breaker | 1 | **212.10** |
| **NGN110** | 10A | 1 | 10kA | miniature circuit breaker | 1 | **212.10** |
| **NGN116** | 16A | 1 | 10kA | miniature circuit breaker | 1 | **212.10** |
| **NGN120** | 20A | 1 | 10kA | miniature circuit breaker | 1 | **212.10** |
| **NGN125** | 25A | 1 | 10kA | miniature circuit breaker | 1 | **218.40** |
| **NGN132** | 32A | 1 | 10kA | miniature circuit breaker | 1 | **218.40** |
| **NGN140** | 40A | 1 | 10kA | miniature circuit breaker | 1 | **240.45** |
| **NGN150** | 50A | 1 | 10kA | miniature circuit breaker | 1 | **319.20** |
| **NGN163** | 63A | 1 | 10kA | miniature circuit breaker | 1 | **328.65** |
| **HMD180** | 80A | 1 | 15kA | miniature circuit breaker | 1.5 | **1 176.00** |
| **HMD190** | 100A | 1 | 15kA | miniature circuit breaker | 1.5 | **1 365.00** |
| **HMD199** | 125A | 1 | 15kA | miniature circuit breaker | 1.5 | **2 247.00** |
| **Two pole** | | | | | | |
| **NGN202** | 2A | 2 | 10kA | miniature circuit breaker | 2 | **844.20** |
| **NGN206** | 6A | 2 | 10kA | miniature circuit breaker | 2 | **649.95** |
| **NGN210** | 10A | 2 | 10kA | miniature circuit breaker | 2 | **649.95** |
| **NGN216** | 16A | 2 | 10kA | miniature circuit breaker | 2 | **649.95** |
| **NGN220** | 20A | 2 | 10kA | miniature circuit breaker | 2 | **649.95** |
| **NGN225** | 25A | 2 | 10kA | miniature circuit breaker | 2 | **733.95** |
| **NGN232** | 32A | 2 | 10kA | miniature circuit breaker | 2 | **733.95** |
| **NGN240** | 40A | 2 | 10kA | miniature circuit breaker | 2 | **733.95** |
| **NGN250** | 50A | 2 | 10kA | miniature circuit breaker | 2 | **879.90** |
| **NGN263** | 63A | 2 | 10kA | miniature circuit breaker | 2 | **879.90** |
| **HMD280** | 80A | 2 | 15kA | miniature circuit breaker | 3 | **2 572.50** |
| **HMD290** | 100A | 2 | 15kA | miniature circuit breaker | 3 | **2 751.00** |
| **HMD299** | 125A | 2 | 15kA | miniature circuit breaker | 3 | **4 284.00** |
| **Three pole** | | | | | | |
| **NGN306** | 6A | 3 | 10kA | miniature circuit breaker | 3 | **1 113.00** |
| **NGN310** | 10A | 3 | 10kA | miniature circuit breaker | 3 | **1 102.50** |
| **NGN316** | 16A | 3 | 10kA | miniature circuit breaker | 3 | **1 102.50** |
| **NGN320** | 20A | 3 | 10kA | miniature circuit breaker | 3 | **1 102.50** |
| **NGN325** | 25A | 3 | 10kA | miniature circuit breaker | 3 | **1 113.00** |
| **NGN332** | 32A | 3 | 10kA | miniature circuit breaker | 3 | **1 113.00** |
| **NGN340** | 40A | 3 | 10kA | miniature circuit breaker | 3 | **1 123.50** |
| **NGN350** | 50A | 3 | 10kA | miniature circuit breaker | 3 | **1 165.50** |
| **NGN363** | 63A | 3 | 10kA | miniature circuit breaker | 3 | **1 197.00** |
| **HMD380** | 80A | 3 | 15kA | miniature circuit breaker | 4.5 | **2 604.00** |
| **HMD390** | 100A | 3 | 15kA | miniature circuit breaker | 4.5 | **4 284.00** |
| **HMD399** | 125A | 3 | 15kA | miniature circuit breaker | 4.5 | **5 355.00** |
| **Four pole** | | | | | | |
| **NGN406** | 6A | 4 | 10kA | miniature circuit breaker | 4 | **1 764.00** |
| **NGN410** | 10A | 4 | 10kA | miniature circuit breaker | 4 | **1 764.00** |
| **NGN416** | 16A | 4 | 10kA | miniature circuit breaker | 4 | **1 764.00** |
| **NGN420** | 20A | 4 | 10kA | miniature circuit breaker | 4 | **1 764.00** |
| **NGN425** | 25A | 4 | 10kA | miniature circuit breaker | 4 | **1 816.50** |
| **NGN432** | 32A | 4 | 10kA | miniature circuit breaker | 4 | **1 816.50** |
| **NGN440** | 40A | 4 | 10kA | miniature circuit breaker | 4 | **1 816.50** |
| **NGN450** | 50A | 4 | 10kA | miniature circuit breaker | 4 | **1 932.00** |
| **NGN463** | 63A | 4 | 10kA | miniature circuit breaker | 4 | **1 932.00** |
| **HMD480** | 80A | 4 | 15kA | miniature circuit breaker | 6 | **5 544.00** |
| **HMD490** | 100A | 4 | 15kA | miniature circuit breaker | 6 | **8 652.00** |
| **HMD499** | 125A | 4 | 15kA | miniature circuit breaker | 6 | **9 628.50** |


NCN116A


NCN232A


NCN320A


NCN440A

**NCN / HMC series** - *Miniature circuit breakers (MCBs)*

For the protection and control of circuits against overload and short circuits.
Suitable for commercial and industrial installations.

- Compatible for DC voltage applications *(see chart **Annex-6**)*

**Voltage rating:** 230/400V 50-60Hz

**Field fittable clip-on accessories** *(see MCB accessories)*
- auxiliary/alarm contacts
- shunt trip device
- undervoltage release
- overvoltage release
- earth leakage

| type | current rating | poles | breaking capacity | description | width in 17.5 mm | price |
|---|---|---|---|---|---|---|
| **NCN / HMC series** | | **C curve** *(5-10 In)* | | | | |
| **Breaking capacity:** | | | **15kA** | IEC 60947-2 | | |
| **Single pole** | | | | | | |
| **NCN106A** | 6A | 1 | 15kA | miniature circuit breaker | 1 | **243.60** |
| **NCN110A** | 10A | 1 | 15kA | miniature circuit breaker | 1 | **243.60** |
| **NCN116A** | 16A | 1 | 15kA | miniature circuit breaker | 1 | **243.60** |
| **NCN120A** | 20A | 1 | 15kA | miniature circuit breaker | 1 | **243.60** |
| **NCN125A** | 25A | 1 | 15kA | miniature circuit breaker | 1 | **253.05** |
| **NCN132A** | 32A | 1 | 15kA | miniature circuit breaker | 1 | **253.05** |
| **NCN140A** | 40A | 1 | 15kA | miniature circuit breaker | 1 | **271.95** |
| **NCN150A** | 50A | 1 | 15kA | miniature circuit breaker | 1 | **333.90** |
| **NCN163A** | 63A | 1 | 15kA | miniature circuit breaker | 1 | **333.90** |
| **HMC180** | 80A | 1 | 15kA | miniature circuit breaker | 1.5 | **1 459.50** |
| **HMC190** | 100A | 1 | 15kA | miniature circuit breaker | 1.5 | **1 606.50** |
| **HMC199** | 125A | 1 | 15kA | miniature circuit breaker | 1.5 | **1 753.50** |
| **Two pole** | | | | | | |
| **NCN206A** | 6A | 2 | 15kA | miniature circuit breaker | 2 | **651.00** |
| **NCN210A** | 10A | 2 | 15kA | miniature circuit breaker | 2 | **651.00** |
| **NCN216A** | 16A | 2 | 15kA | miniature circuit breaker | 2 | **651.00** |
| **NCN220A** | 20A | 2 | 15kA | miniature circuit breaker | 2 | **651.00** |
| **NCN225A** | 25A | 2 | 15kA | miniature circuit breaker | 2 | **703.50** |
| **NCN232A** | 32A | 2 | 15kA | miniature circuit breaker | 2 | **703.50** |
| **NCN240A** | 40A | 2 | 15kA | miniature circuit breaker | 2 | **750.75** |
| **NCN250A** | 50A | 2 | 15kA | miniature circuit breaker | 2 | **879.90** |
| **NCN263A** | 63A | 2 | 15kA | miniature circuit breaker | 2 | **879.90** |
| **HMC280** | 80A | 2 | 15kA | miniature circuit breaker | 3 | **3 307.50** |
| **HMC290** | 100A | 2 | 15kA | miniature circuit breaker | 3 | **3 412.50** |
| **HMC299** | 125A | 2 | 15kA | miniature circuit breaker | 3 | **3 507.00** |
| **Three pole** | | | | | | |
| **NCN306A** | 6A | 3 | 15kA | miniature circuit breaker | 3 | **1 155.00** |
| **NCN310A** | 10A | 3 | 15kA | miniature circuit breaker | 3 | **1 155.00** |
| **NCN316A** | 16A | 3 | 15kA | miniature circuit breaker | 3 | **1 155.00** |
| **NCN320A** | 20A | 3 | 15kA | miniature circuit breaker | 3 | **1 155.00** |
| **NCN325A** | 25A | 3 | 15kA | miniature circuit breaker | 3 | **1 239.00** |
| **NCN332A** | 32A | 3 | 15kA | miniature circuit breaker | 3 | **1 239.00** |
| **NCN340A** | 40A | 3 | 15kA | miniature circuit breaker | 3 | **1 239.00** |
| **NCN350A** | 50A | 3 | 15kA | miniature circuit breaker | 3 | **1 344.00** |
| **NCN363A** | 63A | 3 | 15kA | miniature circuit breaker | 3 | **1 344.00** |
| **HMC380** | 80A | 3 | 15kA | miniature circuit breaker | 4.5 | **3 696.00** |
| **HMC390** | 100A | 3 | 15kA | miniature circuit breaker | 4.5 | **4 284.00** |
| **HMC399** | 125A | 3 | 15kA | miniature circuit breaker | 4.5 | **5 355.00** |
| **Four pole** | | | | | | |
| **NCN406A** | 6A | 4 | 15kA | miniature circuit breaker | 4 | **2 110.50** |
| **NCN410A** | 10A | 4 | 15kA | miniature circuit breaker | 4 | **2 110.50** |
| **NCN416A** | 16A | 4 | 15kA | miniature circuit breaker | 4 | **2 110.50** |
| **NCN420A** | 20A | 4 | 15kA | miniature circuit breaker | 4 | **2 110.50** |
| **NCN425A** | 25A | 4 | 15kA | miniature circuit breaker | 4 | **2 110.50** |
| **NCN432A** | 32A | 4 | 15kA | miniature circuit breaker | 4 | **2 110.50** |
| **NCN440A** | 40A | 4 | 15kA | miniature circuit breaker | 4 | **2 110.50** |
| **NCN450A** | 50A | 4 | 15kA | miniature circuit breaker | 4 | **2 289.00** |
| **NCN463A** | 63A | 4 | 15kA | miniature circuit breaker | 4 | **2 289.00** |
| **HMC480** | 80A | 4 | 15kA | miniature circuit breaker | 6 | **5 838.00** |
| **HMC490** | 100A | 4 | 15kA | miniature circuit breaker | 6 | **6 226.50** |
| **HMC499** | 125A | 4 | 15kA | miniature circuit breaker | 6 | **7 297.50** |



Above ZAR prices do not include VAT. E&OE


NRN110


NRN232


NRN320


NRN440

**NRN series** - *Miniature circuit breakers (MCBs)*

For the protection and control of circuits against overload and short circuits.
Suitable for commercial and industrial installations.

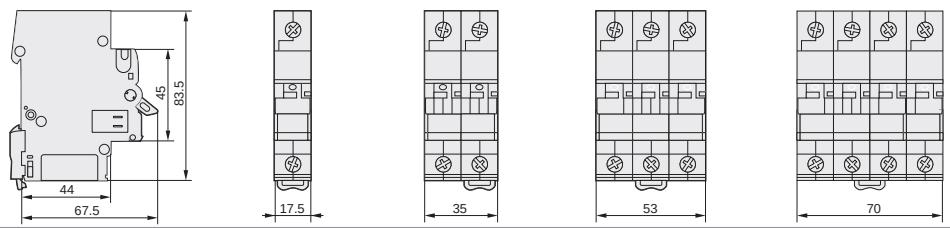
- Compatible for DC voltage applications *(see chart **Annex-6**)*

**Voltage rating:** 230/400V 50-60Hz

**Field fittable clip-on accessories** *(see MCB accessories)*
- auxiliary/alarm contacts
- shunt trip device
- undervoltage release
- overvoltage release
- earth leakage

| type | current rating | poles | breaking capacity | description | width in 17.5 mm | price |
|---|---|---|---|---|---|---|
| **NRN series** | | | **C curve** *(5-10 In)* | | | |
| **Breaking capacity:** | | | | IEC 60947-2 | | |
| | 6 - 25A | | 25kA | | | |
| | 32 - 40A | | 20kA | | | |
| | 50 - 63A | | 15kA | | | |
| **Single pole** | | | | | | |
| **NRN106** | 6A | 1 | 25kA | miniature circuit breaker | 1 | **526.05** |
| **NRN110** | 10A | 1 | 25kA | miniature circuit breaker | 1 | **526.05** |
| **NRN116** | 16A | 1 | 25kA | miniature circuit breaker | 1 | **526.05** |
| **NRN120** | 20A | 1 | 25kA | miniature circuit breaker | 1 | **526.05** |
| **NRN125** | 25A | 1 | 25kA | miniature circuit breaker | 1 | **526.05** |
| **NRN132** | 32A | 1 | 20kA | miniature circuit breaker | 1 | **595.35** |
| **NRN140** | 40A | 1 | 20kA | miniature circuit breaker | 1 | **595.35** |
| **NRN150** | 50A | 1 | 15kA | miniature circuit breaker | 1 | **619.50** |
| **NRN163** | 63A | 1 | 15kA | miniature circuit breaker | 1 | **619.50** |
| **Two pole** | | | | | | |
| **NRN206** | 6A | 2 | 25kA | miniature circuit breaker | 2 | **990.15** |
| **NRN210** | 10A | 2 | 25kA | miniature circuit breaker | 2 | **990.15** |
| **NRN216** | 16A | 2 | 25kA | miniature circuit breaker | 2 | **990.15** |
| **NRN220** | 20A | 2 | 25kA | miniature circuit breaker | 2 | **990.15** |
| **NRN225** | 25A | 2 | 25kA | miniature circuit breaker | 2 | **990.15** |
| **NRN232** | 32A | 2 | 20kA | miniature circuit breaker | 2 | **990.15** |
| **NRN240** | 40A | 2 | 20kA | miniature circuit breaker | 2 | **1 092.00** |
| **NRN250** | 50A | 2 | 15kA | miniature circuit breaker | 2 | **1 092.00** |
| **NRN263** | 63A | 2 | 15kA | miniature circuit breaker | 2 | **1 092.00** |
| **Three pole** | | | | | | |
| **NRN306** | 6A | 3 | 25kA | miniature circuit breaker | 3 | **1 585.50** |
| **NRN310** | 10A | 3 | 25kA | miniature circuit breaker | 3 | **1 585.50** |
| **NRN316** | 16A | 3 | 25kA | miniature circuit breaker | 3 | **1 585.50** |
| **NRN320** | 20A | 3 | 25kA | miniature circuit breaker | 3 | **1 585.50** |
| **NRN325** | 25A | 3 | 25kA | miniature circuit breaker | 3 | **1 585.50** |
| **NRN332** | 32A | 3 | 20kA | miniature circuit breaker | 3 | **1 585.50** |
| **NRN340** | 40A | 3 | 20kA | miniature circuit breaker | 3 | **1 690.50** |
| **NRN350** | 50A | 3 | 15kA | miniature circuit breaker | 3 | **1 690.50** |
| **NRN363** | 63A | 3 | 15kA | miniature circuit breaker | 3 | **1 690.50** |
| **Four pole** | | | | | | |
| **NRN406** | 6A | 4 | 25kA | miniature circuit breaker | 4 | **3 076.50** |
| **NRN410** | 10A | 4 | 25kA | miniature circuit breaker | 4 | **3 076.50** |
| **NRN416** | 16A | 4 | 25kA | miniature circuit breaker | 4 | **3 076.50** |
| **NRN420** | 20A | 4 | 25kA | miniature circuit breaker | 4 | **3 076.50** |
| **NRN425** | 25A | 4 | 25kA | miniature circuit breaker | 4 | **3 370.50** |
| **NRN432** | 32A | 4 | 20kA | miniature circuit breaker | 4 | **3 370.50** |
| **NRN440** | 40A | 4 | 20kA | miniature circuit breaker | 4 | **3 370.50** |
| **NRN450** | 50A | 4 | 15kA | miniature circuit breaker | 4 | **4 557.00** |
| **NRN463** | 63A | 4 | 15kA | miniature circuit breaker | 4 | **4 557.00** |

**MCB** sizes



| Type | | MV | MJT | MA | NF/NFN | NGN | NCN | NRN | HLF | HMD | HMC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Auxiliary contacts** | 1NO + 1NC | – | MZ201 | MZ201 | MZ201 | MZ201 | MZ201 | MZ201 | MZ201 | MZ201 | MZ201 |
| **Alarm contacts** | 1NO + 1NC | – | MZ202 | MZ202 | MZ202 | MZ202 | MZ202 | MZ202 | MZ202 | MZ202 | MZ202 |
| **Shunt trip device** | 110-130 VDC<br>230-415 VAC | – | MZ203 | MZ203 | MZ203 | MZ203 | MZ203 | MZ203 | MZ203 | MZ203 | MZ203 |
| **Shunt trip device** | 12-48 VDC<br>24-48 VAC | – | MZ204 | MZ204 | MZ204 | MZ204 | MZ204 | MZ204 | MZ204 | MZ204 | MZ204 |
| **Under voltage release** | 230 VAC | – | MZ206 | MZ206 | MZ206 | MZ206 | MZ206 | MZ206 | MZ206 | MZ206 | MZ206 |
| **Over voltage release** | 230 VAC | – | MZ212 | MZ212 | MZ212 | MZ212 | MZ212 | MZ212 | MZ212 | MZ212 | MZ212 |
| **Terminal Cover** | – | – | – | – | – | – | – | – | MZN130 | MZN130 | MZN130 |
| **Phase separator** | – | – | – | – | – | – | – | – | MZN131 | MZN131 | MZN131 |

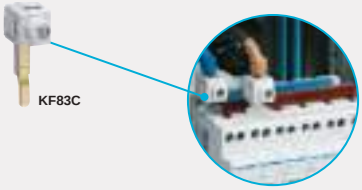

MZ201

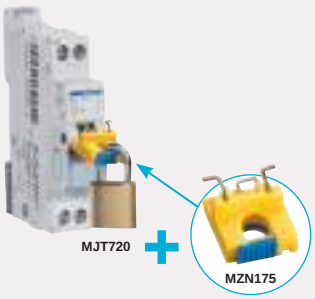

MZ202


MZ203


KB163P


KB263C


KF83C


MJT720

MZN175


MZN131

## Auxiliaries and tripping devices for MCBs and RCDs

All auxiliaries are common to both single and multi-pole circuit breakers.
Auxiliaries are fitted to the left side of the protection device.

Shunt trips and undervoltage releases are fitted with a flag indicator that indicates the automatic / remote tripping of the device.

| type | function | description | | width in 17.5 mm | price |
|---|---|---|---|---|---|
| **Auxiliary contacts** | | | | | |
| Indication of MCB main contact status | | | | | |
| **MZ201** | auxiliary | contact block | 1NO + 1NC | 0.5 | **492.45** |
| **Alarm contacts** | | | | | |
| Indicates fault condition - MCB "tripped" on overload or short-circuit | | | | | |
| **MZ202** | alarm | contact block | 1NO + 1NC | 0.5 | **679.35** |
| **Shunt trip device** | | | | | |
| Permits remote tripping of the protection device | | | | | |
| **MZ203** | shunt | shunt trip device | 110 - 130 VDC / 230 - 415 VAC | 1 | **887.25** |
| **MZ204** | shunt | shunt trip device | 12 - 48 VDC / 24 - 48 VAC | 1 | **743.40** |
| **Under voltage release** | | | | | |
| MCB can only close when voltage is above 70% of Un<br>Automatically trips when voltage drops below 35% of Un | | | | | |
| **MZ206** | undervolt | under voltage release | 230 VAC | 1 | **887.25** |
| **Over voltage release** - *(trips the protection device in case of overvoltage)* | | | | | |
| Monitoring the voltage between phase and neutral<br>Automatically trips when an overvoltage is detected | | | | | |
| **MZ212** | overvolt | over voltage release | 230 VAC | 1 | **887.25** |

## Connection and MCB accessories

| type | mm² | current rating | poles | description | no. ways | price |
|---|---|---|---|---|---|---|
| **KB163P** | 10 mm² | 63A | 1-pole | brown ins. busbar | 13 | **76.65** |
| **KB163N** | 10 mm² | 63A | 1-pole | blue ins. busbar | 13 | **76.65** |
| **KB190C** | 20 mm² | 100A | 1-pole | insulated busbar | 24 | **304.50** |
| **KB263C** | 10 mm² | 63A | 2-pole | insulated busbar | 24 | **641.55** |
| **KB363C** | 10 mm² | 63A | 3-pole | insulated busbar | 24 | **706.65** |
| **KB380B** | 16 mm² | 80A | 3-pole | insulated busbar | 57 | **1 291.50** |
| **KB463C** | 10 mm² | 63A | 4-pole | insulated busbar | 24 | **1 144.50** |
| **KZ022** | | end protection caps for busbar | | **KB263C** | *(10 pcs)* | **59.85** |
| **KZ023A** | | end protection caps for busbar | | **KB363C, KB380B** | *(10 pcs)* | **118.65** |
| **KZ024** | | end protection caps for busbar | | **KB463C** | *(10 pcs)* | **61.95** |
| **KF84A** | 25 mm² | enlarged terminal | | *(lateral connection)* | – | **48.30** |
| **KF83B** | 2 x 25 mm² | enlarged terminal | | *(lateral connection)* | – | **131.25** |
| **KF83C** | 25 mm² | enlarged terminal | | *(top or lateral connection)* | – | **71.40** |
| **Accessories for MCBs** | | | | | | |
| **JP024** | blanking | MCB blanking strip *(with breakable sections)* | | | 24 | **86.10** |
| **LZ060** | dummy | module or heat dissipation insert between devices | | | 0.5 | **12.81** |
| **MZN175** | padlock | attachment for locking MCB toggle in on/off position | | | – | **247.80** |
| **MZN130** | cover | terminal cover for **HLF, HMC, HMD MCBs** | | | – | **133.35** |
| **MZN131** | separator | phase separator for **HLF, HMC, HMD MCBs** | | | *(set of 3)* | **197.40** |



Above ZAR prices do not include VAT. E&OE

| Type | Poles | Sensitivity | MV | MJT | MA | NF/NFN | NGN | NCN | NRN | HLF | HMD | HMC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BD264** | 2 P | 30 mA | – | – | Yes | Yes | Yes | Yes | Yes | – | – | – |
| **BD364** | 3 P | 30 mA | – | – | Yes | Yes | Yes | Yes | Yes | – | – | – |
| **BD464** | 4 P | 30 mA | – | – | Yes | Yes | Yes | Yes | Yes | – | – | – |
| **BF264** | 2 P | 300 mA | – | – | Yes | Yes | Yes | Yes | Yes | – | – | – |
| **BF364** | 3 P | 300 mA | – | – | Yes | Yes | Yes | Yes | Yes | – | – | – |
| **BF464** | 4 P | 300 mA | – | – | Yes | Yes | Yes | Yes | Yes | – | – | – |
| **BDC280E** | 2 P | 30 mA | – | – | – | – | – | – | – | Yes | Yes | Yes |
| **BDC380E** | 3 P | 30 mA | – | – | – | – | – | – | – | Yes | Yes | Yes |
| **BDC480E** | 4 P | 30 mA | – | – | – | – | – | – | – | Yes | Yes | Yes |
| **BTC280E** | 2 P | 0.3 / 0.5 / 1 A | – | – | – | – | – | – | – | Yes | Yes | Yes |
| **BTC380E** | 3 P | 0.3 / 0.5 / 1 A | – | – | – | – | – | – | – | Yes | Yes | Yes |
| **BTC480E** | 4 P | 0.3 / 0.5 / 1 A | – | – | – | – | – | – | – | Yes | Yes | Yes |
| **BDC240F** | 2 P | 30 mA | – | Yes | – | – | – | – | – | – | – | – |



BD264

## Add-on earth leakage devices for MCBs

For connection to all MCBs to be mounted to the right side of 2, 3 or 4 pole circuit breakers. The combined unit provides effective protection against overload, short circuit as well as earth leakage faults. Features independent indication of "earth fault" or "overload" when tripped.

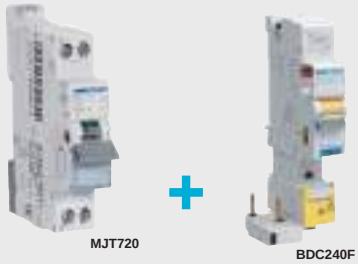
**Description:** To automatically open a circuit in the event of an earth leakage fault
Suitable for residential, commercial and industrial installations

**Nuisance Tripping:** Hager earth leakage devices are protected against nuisance tripping caused by transient leakage currents

**Nominal Voltage:** *(2-pole)* 240V 50Hz
*(4-pole)* 400V 50Hz



BTC380E



MJT720 + BDC240F



=

| type | current rating | sensitivity | poles | description | width in 17.5 mm | price |
|---|---|---|---|---|---|---|
| **Add-on earth leakage devices -** for **MA - NF - NFN - NGN - NCN - NRN** circuit breakers | | | | | | |
| • BD fixed sensitivity 30 mA for human protection | | | | | | |
| **BD264** | 63A | 30 mA | 2-pole | add-on earth leakage device | 2 | **1 795.50** |
| **BD364** | 63A | 30 mA | 3-pole | add-on earth leakage device | 3 | **2 100.00** |
| **BD464** | 63A | 30 mA | 4-pole | add-on earth leakage device | 3 | **2 593.50** |
| • BF fixed sensitivity 300 mA for equipment protection | | | | | | |
| **BF264** | 63A | 300 mA | 2-pole | add-on earth leakage device | 2 | **2 488.50** |
| **BF364** | 63A | 300 mA | 3-pole | add-on earth leakage device | 3 | **2 688.00** |
| **BF464** | 63A | 300 mA | 4-pole | add-on earth leakage device | 3 | **3 979.50** |
| **Add-on earth leakage devices -** for **HLF - HMC - HMD** circuit breakers | | | | | | |
| **BDC series** - fixed sensitivity 30mA for human protection | | | | | | |
| **BDC280E** | 125A | 30 mA | 2-pole | add-on earth leakage device | 6 | **3 412.50** |
| **BDC380E** | 125A | 30 mA | 3-pole | add-on earth leakage device | 6 | **3 801.00** |
| **BDC480E** | 125A | 30 mA | 4-pole | add-on earth leakage device | 6 | **4 084.50** |
| **BTC series** - adjustable sensitivity - 300mA - 500mA - 1A for equipment protection | | | | | | |
| • Adjustable trip delay: | | 0/60/150ms | | | | |
| **BTC280E** | 125A | 0.3/0.5/1A | 2-pole | add-on earth leakage device | 6 | **3 895.50** |
| **BTC380E** | 125A | 0.3/0.5/1A | 3-pole | add-on earth leakage device | 6 | **4 284.00** |
| **BTC480E** | 125A | 0.3/0.5/1A | 4-pole | add-on earth leakage device | 6 | **4 767.00** |
| **Add-on earth leakage device -** for **MJT series** *(1 module)* circuit breakers only | | | | | | |
| **BDC240F** is a compact *(1 module)* earth leakage device which simply clips onto the **MJT series** (MCBs 1P+N) offering additional earth leakage protection to the attached MCB. | | | | | | |
| **BDC240F** | 40A | 30mA | 2-pole | add-on earth leakage device | 1 | **1 512.00** |
| **Combination MCB/RCD** - provides effective protection against overload/short circuit protection as well as earthleakage faults achieved by attaching **BDC240F** *(above)* to MJT series MCBs *(below)*. | | | | | | |
| • Provides separate indication of "e/leakage" - "overload" - short circuit" fault | | | | | | |
| **1 Ph+N** *in one module* | | **6kA** | | SANS/IEC 60947-2 | | |
| **MJT702** | 2A | 6kA | 1+N | miniature circuit breaker | 1 | **402.15** |
| **MJT706** | 6A | 6kA | 1+N | miniature circuit breaker | 1 | **313.95** |
| **MJT710** | 10A | 6kA | 1+N | miniature circuit breaker | 1 | **313.95** |
| **MJT716** | 16A | 6kA | 1+N | miniature circuit breaker | 1 | **313.95** |
| **MJT720** | 20A | 6kA | 1+N | miniature circuit breaker | 1 | **313.95** |
| **MJT725** | 25A | 6kA | 1+N | miniature circuit breaker | 1 | **313.95** |
| **MJT732** | 32A | 6kA | 1+N | miniature circuit breaker | 1 | **313.95** |
| **MJT740** | 40A | 6kA | 1+N | miniature circuit breaker | 1 | **313.95** |



CD241J

**Residual current devices (RCDs)** *without overload protection*

The compact device provides earth leakage protection *(against electrical shocks by direct or indirect contact)* to open automatically in the event of an earth fault between phase and earth and/or neutral and earth.

Hager earth leakage devices are protected against nuisance tripping caused by transient leakage currents.

- Earth fault indicator on the product
- Test button

**Field fittable accessories** *(see MCB accessories)*

- shunt trip device
- undervoltage release
- overvoltage release

} *Requires **CZ001** interface auxiliary*

**Nominal voltage:** *(2-pole)* 240V 50Hz
*(4-pole)* 400V 50Hz

**Mechanical life:** 40 000 operations

| type | current rating (A) | sensitivity (mA) | poles | description | width in 17.5 mm | price |
|---|---|---|---|---|---|---|
| **Earth leakage units (RCDs)** *(Type AC)* | | | | | | |
| **30mA sensitivity** | | | | | | |
| **For human protection** - The primary function is to safeguard people from electric shock. This sensitivity level is designed to detect small leakage currents that can be dangerous to humans. | | | | | | |
| **CD226J** | 25A | 30 mA | 2-pole | earth leakage device | 2 | **705.60** |
| **CD241J** | 40A | 30 mA | 2-pole | earth leakage device | 2 | **705.60** |
| **CD264J** | 63A | 30 mA | 2-pole | earth leakage device | 2 | **814.80** |
| **CDC584Z*** | 100A | 30 mA | 2-pole | earth leakage device | 2 | **2 341.50** |
| **CD464J** | 63A | 30 mA | 4-pole | earth leakage device | 4 | **1 407.00** |
| **CDC684Z*** | 100A | 30 mA | 4-pole | earth leakage device | 4 | **3 370.50** |



CD464J

**100/300mA sensitivity** *(selective type)*

**For equipment protection** - These devises are typically used to protect electrical installations and equipment from damage caused by earth faults. Commonly found in larger commercial and industrial installations where the primary focus is on safeguarding equipment.

| | | | | | | |
|---|---|---|---|---|---|---|
| **CE264J** | 63A | 100 mA | 2-pole | earth leakage device | 2 | **1 312.50** |
| **CF264J** | 63A | 300 mA | 2-pole | earth leakage device | 2 | **1 564.50** |
| **CFC584H*** | 100A | 300 mA | 2-pole | earth leakage device | 4 | **2 488.50** |
| **CF464J** | 63A | 300 mA | 4-pole | earth leakage device | 4 | **3 223.50** |
| **CFC684Z*** | 100A | 300 mA | 4-pole | earth leakage device | 4 | **5 806.50** |

* *Does not require **CZ001***



HR500

**Auxiliaries for RCDs**

| | | | |
|---|---|---|---|
| **CZ001** | 1NO + 1NC | auxiliary + alarm contact for above RCDs | 2 | **820.05** |

**Industrial electronic earth leakage relay** *(with separate torroid)*

- Reset button
- Test button
- Torroid sensor to be ordered separately
- Fault indicator: - On when fault occurs
  - Intermittent when there is a break between relay and toroid



HR520

**Fixed sensitivity, instantaneous trip**

| | | | | | | |
|---|---|---|---|---|---|---|
| **HR500** | 230V | 30 mA | 4-pole | entry level e/leakage relay | 1 | **2 730.00** |
| **HR502** | 230V | 300 mA | 4-pole | entry level e/leakage relay | 1 | **2 635.50** |

**Adjustable sensitivity and trip delay**

- Selectable In threshold: 0.03/0.1/0.3/0.5/1/3/10A (30mA - 10A)
- Selectable trip delay: 0/0.1/0.3/0.4/0.5/1/3sec *(0-3sec)*

| | | | | | | |
|---|---|---|---|---|---|---|
| **HR510** | 230V | selectable | 4-pole | earth leakage relay | 3 | **3 664.50** |
| **HR520** | as above with fault current indication and 50% pre-alarm output | | | | 3 | **4 231.50** |

*Barregraph indicates continuously on* **HR520**

**Separate toroid sensors** *for electronic earth leakages*



HR700



HR743

| type | hole | diameter Ø (mm) | | description | mount | price |
|---|---|---|---|---|---|---|
| **HR700** | round | 30 mm | – | standard toroidal t/former | DIN-rail | **1 701.00** |
| **HR742** | round | 70 mm | – | standard toroidal t/former | chassis | **1 785.00** |
| **HR743** | round | 105 mm | – | standard toroidal t/former | chassis | **3 286.50** |
| **HR745** | round | 210 mm | – | standard toroidal t/former | chassis | **6 573.00** |
| **HR830** | rectangular | 70 x 175 | – | standard toroidal t/former | chassis | **16 485.00** |

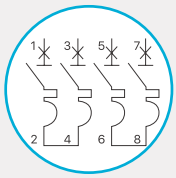


Above ZAR prices do not include VAT. E&OE


MD63SK02


MD63DK06


MD63FK06



Bridged configuration


MD630F


MD63S/230

## DC - Miniature circuit breakers

Photovoltaic applications are widely used as an alternative energy source, stimulating the development of a new generation of DC circuit breakers. Tripping of DC currents is more complicated than in AC where the arc between contacts can be interrupted when reaching zero value. DC applications *(on the other hand)* require higher tripping speeds, force and the fact that voltages can typically be up to 1000 VDC.

| type | current rating | poles | breaking capacity | description | width in 18 mm | price |
|---|---|---|---|---|---|---|
| **MD series - DC miniature circuit breakers** | | | | *mainly for PV installations* | | |

MD series DC miniature circuit breakers are designed for direct current applications, their polarity independency makes them suitable for photovoltaic applications.

Designed for protection against overloads and short circuits of cables between each PV module string as well as the PV inverter.

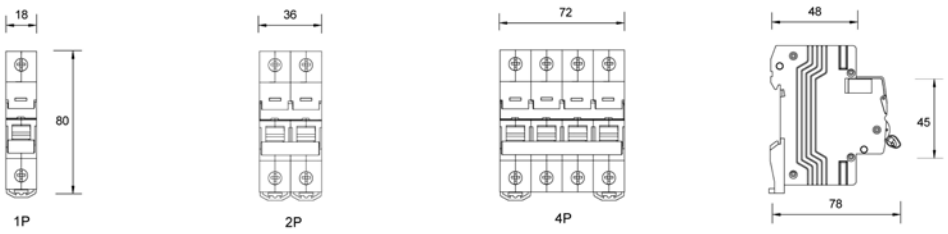
- Not polarity sensitive: (+) and (-) wires can inversed without any risk
- Suitability for isolation according to IEC/EN 60947-2 standard
- Contact position indication *(flag indication on facia of circuit breaker)*
- Suitable for multi-string photovoltaic applications
- Rated operating voltage Ue of 250 V DC per pole
- Rated short circuit breaking capacity 10 kA
- Tested according to IEC/EN 60947-2, GB 14048.2

| **1-pole, 250 VDC** | | | **K curve** *(8-12 In)* | | | |
|---|---|---|---|---|---|---|
| **MD63SK02** | 2A | 1-pole | 10kA | DC miniature circuit breaker | 1 | **147.00** |
| **MD63SK04** | 4A | 1-pole | 10kA | DC miniature circuit breaker | 1 | **147.00** |
| **MD63SK05** | 6A | 1-pole | 10kA | DC miniature circuit breaker | 1 | **147.00** |
| **MD63SK06** | 10A | 1-pole | 10kA | DC miniature circuit breaker | 1 | **147.00** |
| **MD63SK08** | 16A | 1-pole | 10kA | DC miniature circuit breaker | 1 | **147.00** |
| **MD63SK09** | 20A | 1-pole | 10kA | DC miniature circuit breaker | 1 | **147.00** |
| **MD63SK10** | 25A | 1-pole | 10kA | DC miniature circuit breaker | 1 | **147.00** |
| **MD63SK11** | 32A | 1-pole | 10kA | DC miniature circuit breaker | 1 | **147.00** |
| **MD63SK12** | 40A | 1-pole | 10kA | DC miniature circuit breaker | 1 | **147.00** |
| **MD63SK13** | 50A | 1-pole | 10kA | DC miniature circuit breaker | 1 | **147.00** |
| **MD63SK14** | 63A | 1-pole | 10kA | DC miniature circuit breaker | 1 | **147.00** |
| **2-pole, 500 VDC** | | | **K curve** *(8-12 In)* | | | |
| **MD63DK06** | 10A | 2-pole | 10kA | DC miniature circuit breaker | 2 | **294.00** |
| **MD63DK08** | 16A | 2-pole | 10kA | DC miniature circuit breaker | 2 | **294.00** |
| **MD63DK09** | 20A | 2-pole | 10kA | DC miniature circuit breaker | 2 | **294.00** |
| **MD63DK10** | 25A | 2-pole | 10kA | DC miniature circuit breaker | 2 | **294.00** |
| **MD63DK11** | 32A | 2-pole | 10kA | DC miniature circuit breaker | 2 | **294.00** |
| **MD63DK12** | 40A | 2-pole | 10kA | DC miniature circuit breaker | 2 | **294.00** |
| **MD63DK13** | 50A | 2-pole | 10kA | DC miniature circuit breaker | 2 | **294.00** |
| **MD63DK14** | 63A | 2-pole | 10kA | DC miniature circuit breaker | 2 | **294.00** |
| **4 pole, 1000 VDC** *(2 + 2-poles in series)* | | | **K curve** *(8-12 In)* | | | |
| **MD63FK06** | 10A | 4-pole | 10kA | DC miniature circuit breaker | 4 | **632.10** |
| **MD63FK08** | 16A | 4-pole | 10kA | DC miniature circuit breaker | 4 | **632.10** |
| **MD63FK09** | 20A | 4-pole | 10kA | DC miniature circuit breaker | 4 | **632.10** |
| **MD63FK10** | 25A | 4-pole | 10kA | DC miniature circuit breaker | 4 | **632.10** |
| **MD63FK11** | 32A | 4-pole | 10kA | DC miniature circuit breaker | 4 | **632.10** |
| **MD63FK12** | 40A | 4-pole | 10kA | DC miniature circuit breaker | 4 | **632.10** |
| **MD63FK13** | 50A | 4-pole | 10kA | DC miniature circuit breaker | 4 | **632.10** |
| **MD63FK14** | 63A | 4-pole | 10kA | DC miniature circuit breaker | 4 | **632.10** |

*4P DC MCBs - Bridged configuration as per the wiring diagram*

| **Accessories for DC MCBs** *(above)* | | | | | |
|---|---|---|---|---|---|
| **MD630F** | AUX11 | 1 CO | auxiliary contact | 0.5 | **141.75** |
| **MD63S/230** | SHT | 230 VAC | shunt trip release | 1 | **176.40** |
| **MD63S/024** | SHT | 24 VDC | shunt trip release | 1 | **176.40** |
| **MD63S/048** | SHT | 48 VDC | shunt trip release | 1 | **176.40** |
| **MD63UO/230** | UVT | 230 VAC | under/over voltage release | 1 | **352.80** |

## MCB sizes




PMVF81

## Photovoltaic (PV) interface protection unit *(modular DIN-rail mount)*

The **PMVF81** is an interface protection relay intended for use within grid-tied PV systems to monitor and protect the grid.

Designed to ensure that the PV system operates within the required safety parameters and disconnects the system from the grid if any anomalies are detected.

These devices continuously monitor the voltage and frequency of the electrical utility and when either the voltage or the frequency are out of the admissible limits, they step in by de-energising a relay output so that an interface switch (IS) *(e.g. contactor)* opens, isolating the PV system from the grid.

**Operational characteristics:**

- 5 digital inputs: Interface switch feedback; R.O.C.O.F./Vector shift delay; Disabling tripping; Remote tripping; Programmable
- Auxiliary voltage: 24...240 VAC/DC
- Voltage inputs: 100 - 500000 VAC (with VT)
- 3 relay ouputs: Interface switch opening/closing; Standby device opening/closing; Programmable
- Programmable voltage rating, voltage thresholds, frequency and delays
- Supports EXM series expansion modules (USB, RS-232, RS-485 and Ethernet), *see* ***Category E***
- Compliant standards: VDE-AR-N , VDE-AR-N 4110, VDE-AR-N 4120x, IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4

**Photovoltaic (PV) interface protection unit** *(modular DIN-rail mount)*

| type | aux. power supply | inputs | outputs | description | width in 18 mm | price |
|---|---|---|---|---|---|---|
| **PMVF81** | 24 - 240 VAC/DC | 5 | 3 | PV grid protection module | 4 | **16 044.00** |


R4D 415

## Industrial electronic earth leakage relays

- LED indication (Green – Power "ON") ( Red – TRIP)
- Front "TEST" and "RESET" buttons
- Configurable automatic or manual reset
- Configurable tripping set-point (IΔn): 0.025 - 0.25A / 0.25 - 2.5A / 2.5 - 25A
- Configurable tripping time delay (t): 0.02 - 0.5s / 0.2 - 5s
- Reference standards: IEC/EN 60947-2

| type | supply voltage | relays | description | price |
|---|---|---|---|---|
| **Panel mount earth leakage relays -** *(96 x 96 mm)* | | | | |
| Require toroidal current transformers *(listed below)* | | | | |
| **R1D 1 operational threshold** | | | | |
| **R1D 415** | 110 - 240 - 415V | 1 | earth leakage 1 operational threshold | **4 567.50** |
| **R2D 2 operational thresholds** | | *(configurable for 2 tripping or 1 + alarm)* | | |
| **R2D 415** | 110 - 240 - 415V | 2 | earth leakage 2 operational threshold | **8 736.00** |
| **R4D 2 operational thresholds** | | *(configurable for 2 tripping or 1 + alarm)* | | |
| • Flag indicator "trip memory"<br>• Digital fault current measurement and display with configurable tripping value | | | | |
| **R4D 415** | 110 - 240 - 415V | 2 | earth leakage 2 operational threshold | **12 852.00** |


RT...

## Toroidal current transformers for above earth leakage relays

| type | supply voltage | hole size | description | price |
|---|---|---|---|---|
| **RT60** | toroid | 60 mm | toroidal transformer for above relays | **2 089.50** |
| **RT80** | toroid | 80 mm | toroidal transformer for above relays | **2 562.00** |
| **RT110** | toroid | 110 mm | toroidal transformer for above relays | **2 688.00** |
| **RT210** | toroid | 210 mm | toroidal transformer for above relays | **6 898.50** |
| **RTA110** | toroid | 110 mm | split-core toroidal transformers | **7 276.50** |
| **RTA210** | toroid | 210 mm | split-core toroidal transformers | **9 187.50** |
| **Earth leakage relay incorporating toroidal transformer** | | | | |
| **RC60 48** | 24 - 48 VAC/DC | 60 mm | earth leakage and toroidal combinations | **10 447.50** |
| **RC60 415** | 110 - 240 - 415V | 60 mm | earth leakage and toroidal combinations | **6 373.50** |
| **RC80 415** | 110 - 240 - 415V | 80 mm | earth leakage and toroidal combinations | **6 982.50** |
| **RC110 415** | 110-240-415V | 110 mm | earth leakage and toroidal combinations | **7 465.50** |


RC80 415



Above ZAR prices do not include VAT. E&OE


4941 3723

**RESYS M40 -** Earth leakage protection

RESYS M40 earth leakage relays associated with a remote trip breaking device *(automatic power breaking)*, provide the following functions:
- Protection against indirect contact
- Limitation of leakage currents

They also preventively monitor electrical installations via a *(configurable)* pre-alarm function or when used as a signalling relay.

- Positive or negative security
- Modular DIN-rail mountable *(same format as MCBs)* 44mm wide
- 2 relays with configurable function *(alarm or pre-alarm at 50% (IΔn)*
- Adjustment of IΔn: 0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30A
- Time delay: 0 - 0.06 - 0.15 - 0.30 - 0.50 - 0.80 - 1 - 4 - 10 sec
- Tripping accuracy by TRMS measurement *(improves immunity to nuisance tripping)*
- LED bargraph provides real-time display of leakage currents

| type | current setting IΔn | time delay (sec) | power supply | description | price |
|---|---|---|---|---|---|
| **RESYS M40 - Type A differential relay** | | | | *(H)85 x (W)44 x (D)63* | |
| **4941 3723** | 0.03 - 30A | 0 - 10 | 115/230 VAC | electronic earth leakage relay | **4 515.00** |
| **4941 3740** | 0.03 - 30A | 0 - 10 | 400 VAC | electronic earth leakage relay | **4 515.00** |
| **4941 3602** | 0.03 - 30A | 0 - 10 | 12 - 125 VDC | electronic earth leakage relay | **5 050.50** |


4941 3724

**RESYS M40R - With automatic reclosing**

M40R relay recloses the system up to six consecutive times after preselected time intervals. If the fault is still present after the sequence of six reclosing attempts, the relay is locked in alarm mode and a manual intervention will be required.

- Time delay between two reclosings: 7.5 - 15 - 30 - 60 - 120 - 240 sec

| | | | | | |
|---|---|---|---|---|---|
| **4941 3724** | 0.03 - 30A | 0 - 10 | 115/230 VAC | reclosing earth leakage relay | **4 725.00** |
| **4941 3741** | 0.03 - 30A | 0 - 10 | 400 VAC | reclosing earth leakage relay | **4 725.00** |

**RESYS P40 - Panel mounting** *(48 x 48 mm)*

As per **RESYS M40** *(above)* but in panel mounting version

| | | | | | |
|---|---|---|---|---|---|
| **4942 3723** | 0.03 - 30A | 0 - 10 | 230 VAC | panel-mount earth leakage relay | **6 205.50** |


4942 3723

**Core balance transformers** *(toroidal transformers) - type A*

Active conductors pass through the aperture of the core balance transformer, providing a differential summation of vector currents, enabling detection of leakage currents.

| type | aperture Ø diameter | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|
| **4950 6030** | 30 mm | core balance transformer for e/leakages | 104 | 92 | 26 | **2 079.00** |
| **4950 6050** | 50 mm | core balance transformer for e/leakages | 125 | 103 | 26 | **2 593.50** |
| **4950 6080** | 80 mm | core balance transformer for e/leakages | 143 | 116 | 26 | **2 908.50** |
| **4950 6120** | 120 mm | core balance transformer for e/leakages | 183 | 163 | 26 | **4 053.00** |
| **4950 6200** | 200 mm | core balance transformer for e/leakages | 274 | 253 | 51 | **9 387.00** |

*Larger aperture sizes available on request*

**Accessories** *for above*

**Cable locator**

Enables cables passing through toroids to be centred *(for direct cable mounting)*

| | | | |
|---|---|---|---|
| **4950 0011** | 30 mm | for directly mounting transformers onto cables | **521.85** |
| **4950 0012** | 50 mm | for directly mounting transformers onto cables | **915.60** |
| **4950 0013** | 80 mm | for directly mounting transformers onto cables | **1 753.50** |
| **4950 0014** | 120 mm | for directly mounting transformers onto cables | **2 016.00** |
| **4950 0031** | | DIN-rail clip *(for DIN-rail mounting core balance transformers)* | **181.65** |


4950 6080

## Implementation (Installation of the detection toroids)

- All of the active conductors must be passed through the detection toroid's aperture
- The protective conductor must pass on the outside of the torrid or pass once for each direction




SBN132


SBN232


SBN399


SFH125


SFH225

**SBN series - Modular isolators** *(switch disconnectors)*

The SBN range of modular DIN-rail mountable switch disconnectors provide state-of-the-art comfort and a high degree of safety, complimenting the standard range of Miniature Circuit Breakers (MCBs).

- For use as a switch disconnector in all types of circuits
- **MZN175** padlocking kit allows to lock in the ON or OFF position *(see MCB accessories)*
- Green/red (I/O) indication on handle provides positive contact indication

**SANS - IEC 60947-3** **Utilisation category:** AC 22A

| type | current rating (A) | switching | poles | description | width in 17.5 mm | price |
|---|---|---|---|---|---|---|
| **Modular isolators** | *(modular DIN-rail mount)* | | | | | |
| **1-pole disconnect switches** | | | | | | |
| **SBN132** | 32A | on - off | 1-pole | modular isolator switch | 1 | **135.45** |
| **SBN163** | 63A | on - off | 1-pole | modular isolator switch | 1 | **179.55** |
| **SBN190** | 100A | on - off | 1-pole | modular isolator switch | 1 | **224.70** |
| **SBN199** | 125A | on - off | 1-pole | modular isolator switch | 1 | **403.20** |
| **2-pole disconnect switches** | | | | | | |
| **SBN232** | 32A | on - off | 2-pole | modular isolator switch | 1 | **179.55** |
| **SBN263** | 63A | on - off | 2-pole | modular isolator switch | 2 | **268.80** |
| **SBN290** | 100A | on - off | 2-pole | modular isolator switch | 2 | **313.95** |
| **SBN299** | 125A | on - off | 2-pole | modular isolator switch | 2 | **624.75** |
| **3-pole disconnect switches** | | | | | | |
| **SBN332** | 32A | on - off | 3-pole | modular isolator switch | 2 | **268.80** |
| **SBN363** | 63A | on - off | 3-pole | modular isolator switch | 3 | **358.05** |
| **SBN390** | 100A | on - off | 3-pole | modular isolator switch | 3 | **446.25** |
| **SBN399** | 125A | on - off | 3-pole | modular isolator switch | 3 | **989.10** |
| **4-pole disconnect switches** | | | | | | |
| **SBN432** | 32A | on - off | 4-pole | modular isolator switch | 2 | **487.20** |
| **SBN463** | 63A | on - off | 4-pole | modular isolator switch | 4 | **681.45** |
| **SBN490** | 100A | on - off | 4-pole | modular isolator switch | 4 | **1 890.00** |
| **SBN499** | 125A | on - off | 4-pole | modular isolator switch | 4 | **2 068.50** |
| **Auxiliary contact for above isolators** | | | | | | |
| **ESC080** | 6A | 1NO + 1NC | | clip-on auxiliary for above switches | 0.5 | **443.10** |

**Changeover switches** *(modular DIN-rail mount)*

The **SF series** changeover switches are manually operated 1, 2 or 4 pole modular transfer switches with positive break indication. They provide on-load transfer between two sources for any low voltage power circuit, as well as safety isolation.

Ideal for manual changeover applications *(mains supply ↔ generator supply)*

- Complies with IEC/EN 60947-3
- Inductive and resistive loads
- Utilisation category: AC 22A (25 - 40A) AC 21A (63A)

**SFH series - Changeover switches** *- 2 way (I - II)*

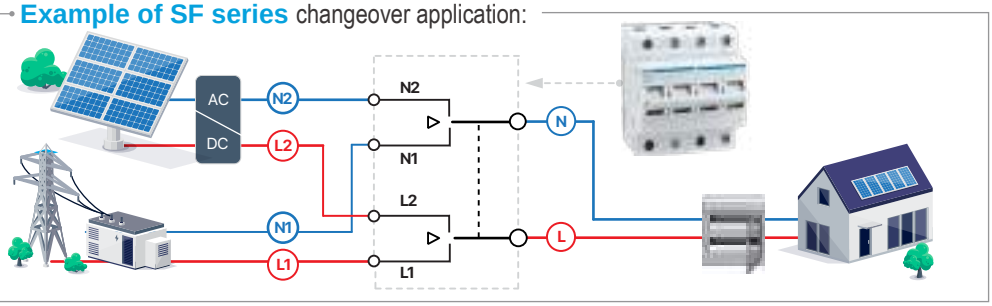
| | | | | | | |
|---|---|---|---|---|---|---|
| **SFH125** | 25A | on - on | 1-pole | 2-way changeover switch | 1 | **221.55** |
| **SFH225** | 25A | on - on | 2-pole | 2-way changeover switch | 2 | **516.60** |

**SFT series - Changeover switches** *(with centre off) - 3 way (I - O - II)*

| | | | | | | |
|---|---|---|---|---|---|---|
| **SFT125** | 25A | on - off - on | 1-pole | centre off changeover switch | 1 | **253.05** |
| **SFT140** | 40A | on - off - on | 1-pole | centre off changeover switch | 1 | **253.05** |
| **SFT240** | 40A | on - off - on | 2-pole | centre off changeover switch | 2 | **472.50** |
| **SFT440** | 40A | on - off - on | 4-pole | centre off changeover switch | 4 | **945.00** |
| **SF263** | 63A | on - off - on | 2-pole | centre off changeover switch | 4 | **651.00** |
| **SF463** | 63A | on - off - on | 4-pole | centre off changeover switch | 8 | **1 890.00** |

*The incoming of the changeover must be protected with an appropriate MCB against short circuits*

**Example of SF series** changeover application:






Above ZAR prices do not include VAT. E&OE


ESC225

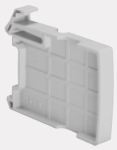

ESC425


ERC216


ERC425S


ESC463S


ESC080


LZ060


EPN503


EPN051


EPN053

## Modular contactors / Step relays

Contactors are power devices necessary for remote switching and control of power circuits. It is recommended that they be associated with command and energy management devices.

- Modular DIN-rail mounting *(same cutout as MCBs)*
- Feature economic low consumption, low heat dissipation coils

| type | contact rating (AC1) | coil voltage | description | contact config. | width in 17.5 mm | price |
|---|---|---|---|---|---|---|
| **Modular contactors** | | | | | | |
| **Standard contactors** *(230 VAC 50/60 Hz)* | | | | | | |
| **ESC225** | 25A | 230 VAC | modular standard contactor | 2NO | 1 | **594.30** |
| **ESC226** | 25A | 230 VAC | modular standard contactor | 2NC | 1 | **594.30** |
| **ESC227** | 25A | 230 VAC | modular standard contactor | 1NO + 1NC | 1 | **577.50** |
| **ESC425** | 25A | 230 VAC | modular standard contactor | 4NO | 2 | **849.45** |
| **ESC427** | 25A | 230 VAC | modular standard contactor | 2NO + 2NC | 2 | **865.20** |
| **ESC240** | 40A | 230 VAC | modular standard contactor | 2NO | 3 | **1 113.00** |
| **ESC241** | 40A | 230 VAC | modular standard contactor | 2NC | 3 | **1 113.00** |
| **ESC440** | 40A | 230 VAC | modular standard contactor | 4NO | 3 | **1 333.50** |
| **ESC442** | 40A | 230 VAC | modular standard contactor | 2NO + 2NC | 3 | **1 333.50** |
| **ESC263** | 63A | 230 VAC | modular standard contactor | 2NO | 3 | **1 449.00** |
| **ESC463** | 63A | 230 VAC | modular standard contactor | 4NO | 3 | **1 690.50** |
| **ESC464** | 63A | 230 VAC | modular standard contactor | 4NC | 3 | **1 543.50** |
| **ESC465** | 63A | 230 VAC | modular standard contactor | 2NO + 2NC | 3 | **1 659.00** |
| **Relays and contactors** *with manual override facility* | | | | | | |
| **ERC216** | 16A | 230 VAC | modular rail mount relay | 2NO | 1 | **477.75** |
| **ERC218** | 16A | 230 VAC | modular rail mount relay | 1NO + 1NC | 1 | **477.75** |
| **ERC416** | 16A | 230 VAC | modular rail mount relay | 4NO | 2 | **947.10** |
| **ERC418** | 16A | 230 VAC | modular rail mount relay | 2NO + 2NC | 2 | **947.10** |
| **ERC225** | 25A | 230 VAC | modular standard contactor | 2NO | 1 | **594.30** |
| **ERC240** | 40A | 230 VAC | modular standard contactor | 2NO | 3 | **1 113.00** |
| **ERC263** | 63A | 230 VAC | modular standard contactor | 2NO | 3 | **1 627.50** |
| **Modular "low noise" contactors** *(No humming while energised / low switching noise)* | | | | | | |
| **ERC225S*** | 25A | 230 VAC | low noise modular contactor | 2NO | 1 | **660.45** |
| **ERC425S*** | 25A | 230 VAC | low noise modular contactor | 4NO | 2 | **1 092.00** |
| **ESC440S** | 40A | 230 VAC | low noise modular contactor | 4NO | 3 | **1 627.50** |
| **ESC463S** | 63A | 230 VAC | low noise modular contactor | 4NO | 3 | **1 900.50** |
| **ERL625SDC*** | 25A | 12 VDC | low noise modular contactor | 2NO | 2 | **570.15** |
| **ERL425SDC*** | 25A | 12 VDC | low noise modular contactor | 4NO | 2 | **1 071.00** |
| **ESL440S** | 40A | 12 VDC | low noise modular contactor | 4NO | 3 | **1 627.50** |
| **ESL463S** | 63A | 12 VDC | low noise modular contactor | 4NO | 3 | **1 900.50** |
| **ERD225SDC*** | 25A | 24 VDC | low noise modular contactor | 2NO | 1 | **622.65** |
| **ESD425SDC*** | 25A | 24 VDC | low noise modular contactor | 4NO | 2 | **1 092.00** |
| **ESD440S** | 40A | 24 VDC | low noise modular contactor | 4NO | 3 | **1 627.50** |
| **ESD463S** | 63A | 24 VDC | low noise modular contactor | 4NO | 3 | **1 900.50** |
| * *With manual override control* | | | | | | |
| **Contactor accessories** | | | | | | |
| **Auxiliary contact for all above contactors** | | | | | | |
| *Auxiliaries are not compatible with low-noise contactors **ERC225S, ERD225SDC*** | | | | | | |
| **ESC080** | Ith 6A | – | clip-on auxiliary contact | 1NO + 1NC | 0.5 | **443.10** |
| *Avoid overheating when installed side by side, insert a heat dissipation module **LZ060** between contactors* | | | | | | |
| **LZ060** | heat dissipation insert for mounting between contactors | | | | 0.5 | **12.81** |
| **Modular latching / step relays** | | | | | | |
| • Pulsing the relay changes the contact status until pulsed again<br>• Max. pulse duration: 60 seconds<br>• With manual override facility | | | | | | |
| **EPN515** | 16A | 230 VAC | modular stepping relay | 1NO + 1NC | 1 | **479.85** |
| **EPN503** | 16A | 48 VAC/24 VDC | modular stepping relay | 1NO + 1NC | 1 | **571.20** |
| **EPN518** | 16A | 24 VAC/12 VDC | modular stepping relay | 1NO + 1NC | 1 | **477.75** |
| **EPN519** | 16A | 12 VAC | modular stepping relay | 1NO + 1NC | 1 | **477.75** |
| **EPN521** | 16A | 12 VAC | modular stepping relay | 2NO | 1 | **479.85** |
| **Auxiliary for above stepping relays** | | | | | | |
| **EPN051** | 2A | – | clip-on auxiliary contact | 1NO + 1NC | 0.5 | **412.65** |
| **EPN053** | 2A | converts maintained contact into a pulsed one | | 1 C/over | 0.5 | **410.55** |


EHN011

## Modular time switches

Time switches are used to control lighting, pumps, heating, household appliances, and many other applications according to pre-defined programming, to improve comfort and save energy.

**General features:**

- Supply voltage: 230 VAC
- Output: AC1 10A 230V ***(EGN100)*** / 16A 230V ***(EGN103/EGN200/EGN400)*** / 16A 250V ***(EHNxxx)***
- Mounting: Modular DIN-rail
- Manual override possible

*For higher current ratings it is recommended to use time switches in conjunction with contactors*


EHN110

| type | time range | min. setting | reserve | contact config. | description | width in 17.5 mm | price |
|---|---|---|---|---|---|---|---|
| **Analogue time switches** | | | *(electro-mechanical)* | | | | |
| **Slimline 1 module wide** *(17.5 mm)* | | | | | | | |
| **EHN010** | 24 hr | 15 min | no | 1 NO | time switch | 1 | **924.00** |
| **EHN011** | 24 hr | 15 min | 120 hrs | 1 NO | time switch | 1 | **850.50** |
| **Standard 3 module wide** - *clock hands indicate real time* | | | | | | | |
| **EHN110** | 24 hr | 15 min | no | 1 c/over | time switch | 3 | **819.00** |
| **EHN111** | 24 hr | 15 min | 120 hrs | 1 c/over | time switch | 3 | **1 470.00** |
| **EHN171** | 7 day | 2 hrs | 120 hrs | 1 c/over | time switch | 3 | **2 058.00** |
| **Digital time switches** | | | | | | | |


EGN103 EGN003

**Basic version** *(weekly time switch)*

For less complex switching tasks, the time switch is a single channel digital clock with daily or weekly electronic programming that automatically controls different loads.

- Programmable by day or group of days
- 56 programmable steps
- ON or OFF control
- Indicates date and time *(pre-programmed at factory)*
- Programmable via front keypad or via Bluetooth with the **EGN003** *(even without supply)*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **EGN103** | 7 day | 1 min | 5 years | 1 c/over | time switch | 2 | **2 352.00** |
| **EGN003** | Programming Bluetooth key for **EGN103** | | | | | | **1 900.50** |


EGN100

**Advanced versions** *(multi-function time switches)*

Combine all functions of a modern time switch and feature daily, weekly and yearly programmable cycles for the automatic control of different loads.

- Built-in astronomical clock
- 1, 2 or 4 channel options available
- 100/200/400 programmable steps *(version dependent)*
- ON, OFF or Pulse *(1-60s)* control
- Programmable wired input for variance or forcing
- Long power reserve with accuracy +-90s/year
- Programmable via Bluetooth or via front keypad ***(EGN200/400)***

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **EGN100** | week/annual | 1 sec | 10 years | 1 c/over | time switch | 1 | **4 347.00** |
| **EGN200** | week/annual | 1 sec | 10 years | 2 c/over | time switch | 2 | **4 830.00** |
| **EGN400** | week/annual | 1 sec | 10 years | 4 c/over | time switch | 4 | **6 783.00** |


EGN200

**Modular electronic timers**

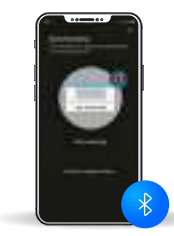
Delay timer devices are used to control a variety of processes where the requirement is for switching circuits on, off or delaying the on or off switching for a pre-set period of time.

- Multi-time range: 0.05s - 100h
- Multi-voltage: 24-240V AC/DC
- 8A 230V changeover output

| | | | | |
|---|---|---|---|---|
| **EZD100** | On-delay multi-range *(modular timer)* | electronic timer | 1 | **1 690.50** |
| **EZF100** | Off-delay multi-range *(modular timer)* | electronic timer | 1 | **1 932.00** |
| **EZM100** | Multi-function on-delay / off-delay / interval / repeat | electronic timer | 1 | **1 690.50** |


EZM100

**Bluetooth programing**



**Easy programming via Hager Mood app.**

01 Synchronise the program with the timer
02 Create programs
03 Select the timer

Scan to watch our tutorials

Download the free Hager Mood from

Download on the App Store

GET IT ON Google Play



Above ZAR prices do not include VAT. E&OE


ECP180D


ECP300C

## Energy meters (kWh meters) *(modular DIN-rail mounting)*

The 4 quadrants pulse energy meters measure the active and reactive energy used in an electrical installation.

Capable of managing dual tariffs, the meters are equipped with LCD backlight and 3 push-button keys to read Energies, V, I, PF, F, P, Q and to configure some parameters.

- Accuracy: 1%
- Pulse output
- Backlit LCD
- "Total" counter and "Partial" *(resettable)* counter
- Class 1 according to IEC 62 053-21 and EN 50470
- LED indication blinks according to consumption (1000/kWh)

| type | current | operation | description | width | price |
|---|---|---|---|---|---|
| **Single-phase kWh meter 80A** | | | *(direct reading)* | | |
| **ECP180D** | 80A | direct | single-phase kWh meter | 2 | **4 704.00** |
| **Three-phase kWh meters 80/125A** | | | *(direct reading)* | | |
| **ECP380D** | 80A | direct | three-phase kWh meter | 4 | **6 153.00** |
| **ECP310D** | 125A | direct | three-phase kWh meter | 6 | **7 812.00** |
| **Three-phase kWh meters up to 6000A** | | | *(connection via CT)* | | |
| **ECP300C** | 6000A | CT / 5A | three-phase kWh meter | 4 | **5 754.00** |

*For CTs, see page **E-20...25***

SPDs Type 1 Type 2

New

## Surge protection devices (SPDs) Class 1 and 2 *(modular DIN-rail mounting)*

For the protection of low-voltage equipment against transient voltages and current surges from atmospheric origins *(lightning)* as well as transients produced by switching characteristics such as switching of distribution networks, transformers, motors, etc.

• Complies with SANS/IEC 61643-11


SPA801


SPA081 *(On request)*

| type | Iimp L-N (10/350us) | In L-N (8/20us) | Imax (8/20us) | Uc max voltage | Up protection voltage | config. | width in 17.5 mm | price |
|---|---|---|---|---|---|---|---|---|
| **Class 1 and class 2 combined surge protection device** *(for TT or TNS-Networks)* | | | | | | | | |
| **SPA801*** | 25kA | 25kA | 50kA | 350V | ≤ 1.5 kV | 3ph + N | 8 | **34 125.00** |
| **SPN802R*** | 25kA | 25kA | 50kA | 350V | ≤ 1.5 kV | 3ph + N | 8 | **12 600.00** |

The combined surge protection devices offer an all-in-one solution to protect against lightning and surge-voltage in one device.

- Compliance with to EN 61643-11, requirement class type 1+2
- Replaceable plug-in modules
- Integrated fault indicator in the plug-in modules
- SPDs with separate auxiliary contact

## Surge protection devices (SPDs) Class 2 *(modular DIN-rail mounting)*


SPB140D

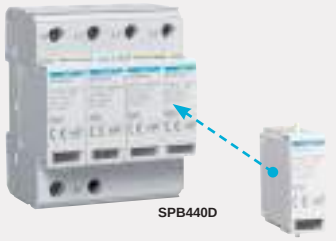
Class 2 surge protection devices are designed to provide reliable protection against transient overvoltages, typically caused by lightning strikes or switching operations in the network.

Suitable for second-level protection in distribution panels where type 1 protectors are installed or areas not exposed to direct lightning strikes and with no external lightning protection system.

- Can be used in any supply system TNC/TNCS/TNS/TT
- Replaceable plug-in modules
- Integrated fault indicator in the plug-in modules

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Imax 40kA** *(8/20µs)* | | | | | | | | |
| **SPB140D** | – | 20kA | 40kA | 275V | ≤ 1.5 kV | 1P | 1 | **1 869.00** |
| **SPB240D** | – | 20kA | 40kA | 275V | ≤ 1.5 kV | 1ph + N | 2 | **4 021.50** |
| **SPB240R*** | – | 20kA | 40kA | 275V | ≤ 1.5 kV | 1ph + N | 2 | **4 546.50** |
| **SPB440D** | – | 20kA | 40kA | 275V | ≤ 1.5 kV | 3ph + N | 4 | **7 423.50** |
| **SPB440R*** | – | 20kA | 40kA | 275V | ≤ 1.5 kV | 3ph + N | 4 | **9 670.50** |

* *With remote signalling contact for monitoring*


SPB440D

SPB040D

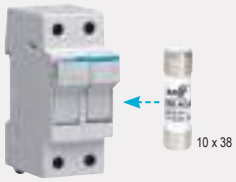
### Replacement cartridges for the above surge protection devices

Replacement cartridges keep your surge protection effective without needing a full device replacement.

| | | | | | | price |
|---|---|---|---|---|---|---|
| **SPB040D** | phase | replacement cartridge | for protectors | SPB140/240/440 | – | **2 530.50** |
| **SPB040N** | neutral | replacement cartridge | for protectors | SPB240/440 | – | **1 753.50** |


ST314


SU213


LSN502


SVN.....


654.0091


101.6414.G


654.0092 +
101.6414.G

## Control transformers *(modular DIN-rail mount)*

- Transformers ensure an electrical separation between primary and secondary circuits

| type | supply voltage | output voltage | power (VA) | description | width in 17.5 mm | price |
|---|---|---|---|---|---|---|
| **ST312** | 230V | 12/24V | 25VA | modular safety transformer | 4 | **988.05** |
| **ST314** | 230V | 12/24V | 40VA | modular safety transformer | 4 | **1 113.00** |
| **ST315** | 230V | 12/24V | 63VA | modular safety transformer | 6 | **1 501.50** |
| **ST303** | 230V | 8/12V | 8VA | modular bell transformer | 2 | **618.45** |
| **ST305** | 230V | 8/12V | 16VA | modular bell transformer | 3 | **1 029.00** |

*Bell transformers are short-circuit protected*

## Audible devices *(modular DIN-rail mount)*

- Bells/buzzers max. continuous duty < 30 minutes

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **SU213** | 230V | – | 6.5VA | 85 dB | modular bell | 1 | **376.95** |
| **SU214** | 8/12 VAC | – | 4.0VA | 78 dB | modular buzzer | 1 | **376.95** |
| **SU215** | 230V | – | 6.5VA | 78 dB | modular buzzer | 1 | **376.95** |

## Fuse holders *(modular DIN-rail mount)*

- For protection and control of circuits against overloads and short circuits
- Short-circuit resistance with 10 x 38 mm fuse-link: 80kA
- For 10 x 38 mm cylindrical fuses *(see page **B-45...50**)*

| | | | | | |
|---|---|---|---|---|---|
| **LSN501** | 32A | 1-pole | modular cylindrical fuse holder | 1 | **84.00** |
| **LSN502** | 32A | 2-pole | modular cylindrical fuse holder | 2 | **208.95** |

## Control and indicating devices *(modular DIN-rail mount)*

### LED indicating lights *(100 000hrs)*

- With integrated label holder

| | | | | | |
|---|---|---|---|---|---|
| **SVN121** | 230VAC | green | modular LED indicating light | 1 | **255.15** |
| **SVN122** | 230 VAC | red | modular LED indicating light | 1 | **255.15** |
| **SVN123** | 230 VAC | amber | modular LED indicating light | 1 | **255.15** |
| **SVN126** | 230 VAC | grn+red | modular LED indicating light | 1 | **358.05** |
| **SVN223** | 230 VAC | red/wht/blu | modular LED p/light for phase indication | 1 | **456.75** |
| **SVN131** | 12 - 48 VAC/DC | green | modular LED indicating light | 1 | **253.05** |
| **SVN132** | 12 - 48 VAC/DC | red | modular LED indicating light | 1 | **255.15** |
| **SVN351** | 1NO + 1NC | – | modular momentary pushbutton | 1 | **358.05** |
| **SVN391** | 1NO + 1NC | grn+red | double pushbutton (grn NO / red NC) | 1 | **355.95** |
| **SVN411** | 1NO | green | modular pushbutton + green pilot light | 1 | **331.80** |

**I -** Plugs & Sockets

SCAME feeling connected

## SCAME DIN modular domestic sockets for distribution boards

Permits the mounting of domestic switches and/or sockets into standard DIN distribution boards to provide an electrical connection for tools, power supplies or recording instruments.

- DIN-rail mounting housing/support for domestic switches or sockets
- Mounts into standard distribution boards with same dimensions and cut-out as MCBs
- Two modular widths: One module *(18 mm)* and two module *(36 mm)*

| type | description | no. of modules | price |
|---|---|---|---|
| **DIN-rail support for Evolution series** | | | |
| **654.0091** | DIN-rail support for Evolution series switches or sockets | 1 | |
| **654.0092** | DIN-rail support for Evolution series switches or sockets | 2 | |

**Evolution series switches and sockets for *(above)* supports**

- Simply clips into DIN-rail mount housing *(above)*

| | | | | | |
|---|---|---|---|---|---|
| **101.6414.G** | 15A | 2P+E | South African std socket for housings | 2 | |
| **101.6403.G** | 16A | 2P+E | European/Italian socket for housings | 1 | |
| **101.6303.G** | 16A | 1-pole | switch for housings (I-O) | 1 | |
| **101.6311.G** | 16A | 2-pole | changeover switch for housings (I-O-II) | 1 | |

*see **Cat I** for pricing.*



Above ZAR prices do not include VAT. E&OE



HJM5DC250/2-200

## DC - Moulded case circuit breakers

**HJM5DC** dedicated DC circuit breaker in a 2 pole (+ / -) version can be applied to DC underground systems, negative or neutral grounding systems and meet environmental requirements of photovoltaic applications.

Application scenarios include DC power distribution, photovoltaic, energy storage, data centres etc.

**General features:**

- Two pole design, compact dimensions with high performance ratings
- Superior insulating performance, clearance and creepage distance meets UL489, IEC 60947-2 standards
- Non-polarity, reverse current and reverse incoming reliably protected
- Zero arcing: True zero arcing avoiding secondary system failure due to arc spray on breaking standards

| type | rated current | no. poles | nominal voltage | breaking capacity 1000V (τ = 5ms) | breaking capacity 1500V (τ = 5ms) | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **DC moulded case circuit breakers** | | | | | | | | | |
| **HJM5DC series features:** | | | | | | | | | |
| - Rated voltage | | | 1000, 1500 VDC | | | | | | |
| - Rated insulation voltage | | | 1500V | | | | | | |
| - Rated impulse withstand voltage | | | 12kV | | | | | | |
| **HJM5DC250/2-125** | 125A | 2-pole | 1000 VDC | 50kA | 15kA | 200 | 81 | 100 | **3 223.50** |
| **HJM5DC250/2-160** | 160A | 2-pole | 1000 VDC | 50kA | 15kA | 200 | 81 | 100 | **3 223.50** |
| **HJM5DC250/2-200** | 200A | 2-pole | 1000 VDC | 50kA | 15kA | 200 | 81 | 100 | **3 223.50** |
| **HJM5DC250/2-250** | 250A | 2-pole | 1000 VDC | 50kA | 15kA | 200 | 81 | 100 | **3 223.50** |
| **HJM5DC250/2-320** | 320A | 2-pole | 1000 VDC | 50kA | 15kA | 200 | 81 | 100 | **3 223.50** |
| **HJM5DC800/2-325** | 325A | 2-pole | 1500 VDC | 35kA | 20kA | 280 | 124 | 135 | **8 106.00** |
| **HJM5DC800/2-400** | 400A | 2-pole | 1500 VDC | 35kA | 20kA | 280 | 124 | 135 | **8 106.00** |
| **HJM5DC800/2-500** | 500A | 2-pole | 1500 VDC | 35kA | 20kA | 280 | 124 | 135 | **8 106.00** |
| **HJM5DC800/2-630** | 630A | 2-pole | 1500 VDC | 35kA | 20kA | 280 | 124 | 135 | **8 106.00** |
| **HJM5DC800/2-800** | 800A | 2-pole | 1500 VDC | 35kA | 20kA | 280 | 124 | 135 | **8 977.50** |



HJM5DC800/2-500

## AC moulded case circuit breakers *(high voltage 1000 VAC)*

In recent years the increasing demand for high service voltage protection devices in industrial plants has prompted the introduction of circuit breakers for use in 800/1000 VAC applications. Hence the introduction of the **HJM5HU** special series for up to 1140 VAC rated operational voltage.

Suitable for use under special environmental conditions in mines, road and railway tunnels, electrical transport, refineries, chemical plants for high performance and general industrial power supply with long supply lines.

**HJM5HU series features:**

| | | |
|---|---|---|
| Rated working voltage 50/60Hz: | Ue | 525, 690, 800, 1000, 1140 VAC |
| Rated insulated voltage: | Ui | 1250V |
| Rated impulse withstand volts: | Uimp | 12 kV |
| Standards: | | GB/T14048.2, IEC/EN60947-2, UL489 |

| type | rated current | no. poles | nominal voltage | breaking capacity 800V | breaking capacity 1000V | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **HJM5HU250/3-125** | 125A | 3-pole | 1000 VAC | 50kA | 15kA | 200 | 81 | 100 | **4 200.00** |
| **HJM5HU250/3-160** | 160A | 3-pole | 1000 VAC | 50kA | 15kA | 200 | 81 | 100 | **4 200.00** |
| **HJM5HU250/3-200** | 200A | 3-pole | 1000 VAC | 50kA | 15kA | 200 | 81 | 100 | **4 200.00** |
| **HJM5HU250/3-250** | 250A | 3-pole | 1000 VAC | 50kA | 15kA | 200 | 81 | 100 | **4 200.00** |
| **HJM5HU250/3-320** | 320A | 3-pole | 1000 VAC | 50kA | 15kA | 200 | 81 | 100 | **4 200.00** |
| *Available in lower rated currents -* | *40, 50, 63, 80, 100A* | *(same frame) on request* | | | | | | | |
| **HJM5HU630/3-630** | 630A | 3-pole | 1000 VAC | 50kA | 15kA | 258 | 150 | 115 | **11 329.50** |
| **HJM5HU800/3-630** | 630A | 3-pole | 1000 VAC | 50kA | 15kA | 280 | 182 | 135 | **12 915.00** |
| **HJM5HU800/3-800** | 800A | 3-pole | 1000 VAC | 50kA | 15kA | 280 | 182 | 135 | **14 175.00** |



HJM5HU800/3-800

## Accessories for above circuit breakers HJM5DC and HJM5HU

| | | | | |
|---|---|---|---|---|
| **HJM5AUX320** | aux | auxiliary + alarm contact for | **HJM5-320** MCCB | **273.00** |
| **HJM5AUX630** | aux | auxiliary + alarm contact for | **HJM5-630** MCCB | **273.00** |
| **HJM5AUX800** | aux | auxiliary + alarm contact for | **HJM5-800** MCCB | **273.00** |
| **HJM5SHT300/*** | shunt | shunt release for | **HJM5-320** MCCB | **556.50** |
| **HJM5SHT630/*** | shunt | shunt release for | **HJM5-630/800** MCCB | **556.50** |

* *Specify voltage required:* ***02*** *= 24VDC,* ***11*** *= 110VAC,* ***23*** *= 230VAC,*
*For 230 VAC shunt, see ordering example* **HJM5SHT300/*23***

# Moulded case circuit breakers - Selection chart

Hager moulded case circuit breakers conform to IEC/EN 60947-2 standards and to all major international standards and performance categories.

- Calibrated at 50ºC
- Load break switches
- Thermal magnetic and electronic release
- Quick, easy and safe mounting of accessories
- Safety for low voltage electrical circuit protector
- Suitable for co-ordinated installations in all applications
- Wide range of rated current ratings and breaking capacities

Cascading with MCBs (see cascading chart ***Annex-5***)



| Frame | | | x160 | | | x250 | | |
|---|---|---|---|---|---|---|---|---|
| Product | | | Switch | MCCB | | Switch | MCCB | |
| Reference | | | HCA | HHA | HNA | HCB | HHB | HNB |
| Number of poles | | [No.] | 3/4 | 3 | 3/4 | 3/4 | 3 | 3/4 |
| **Electrical characteristics** | | | | | | | | |
| Rated current | In | [A] | | 160 | | | 250 | |
| Current rated range | | [A] | 125 - 160 | 16 - 160 | 25 - 160 | 250 | 200 - 250 | 250 |
| Rated service voltage (AC) | Ue | [V] | | 220 - 415 | | | 220 - 415 | |
| Frequency | f | [Hz] | | 50/60 | | | 50/60 | |
| Rated insulation voltage | Ui | [V] | | 690 | | | 800 | |
| Rated impulse withstand voltage | Uimp | [kV] | | 8 | | | 8 | |
| Suitability for insulation | | | | Yes | | | Yes | |
| Rated ultimate short-circuit-breaking capacity | (Icu) | | | | | | | |
| (AC) 50-60 Hz 220/230 V | Icu | [kA] | – | 35 | 85 | – | 35 | 85 |
| **(AC) 50-60 Hz 380/415 V** | **Icu** | **[kA]** | **–** | **25** | **40** | **–** | **25** | **40** |
| (AC) 50-60 Hz 480/500/525 V | Icu | [kA] | – | 7.5 | 12.5 | – | – | 10 |
| (AC) 50-60 Hz 660/690 V | Icu | [kA] | – | 4 | 6 | – | – | 4 |
| (DC) 250 V - 2-poles in series | Icu | [kA] | – | 20 | 25 | – | 25 | 25 |
| Rated service short-circuit-breaking capacity, | (Ics) | | | | | | | |
| (AC) 50-60 Hz 220/230 V | Ics | [kA] | – | 25 | 40 | – | 25 | 40 |
| **(AC) 50-60 Hz 380/415 V** | **Ics** | **[kA]** | **–** | **20** | **20** | **–** | **20** | **20** |
| (AC) 50-60 Hz 480/500/525 V | Ics | [kA] | – | 4 | 7.5 | – | – | 7.5 |
| (AC) 50-60 Hz 660/690 V | Ics | [kA] | – | – | 3 | – | – | 2 |
| (DC) 250 V - 2-poles in series | Ics | [kA] | – | 10 | 13 | – | 13 | 13 |
| Rated short-circuit making capacity | Icm | [kA] | 2.8 | – | – | 6 | – | – |
| Rated short-time withstand current for 1s | Icw | [kA] | 2 | – | – | 3 | – | – |
| Category of use (EN 60947-2) | | | – | A | | – | A | |
| Trip unit | | | – | TM | | – | TM | |
| Calibration temperature | | | – | 50°C | | – | 50°C | |
| Derating | 40°C | | – | 100% | | – | 100% | |
| | 50°C | | – | 100% | | – | 100% | |
| | 55°C | | – | 95% | | – | 94% | |
| | 60°C | | – | 93% | | – | 91% | |
| | 65°C | | – | 90% | | – | 88% | |
| Electric endurance in the number of cycles | | | | 10 000 | | | 10 000 | |
| Mechanical endurance in number of operations | | | | 20 000 | | | 20 000 | |
| Operating temperature | | | | -25 to +70°C | | | -25 to +70°C | |
| Storage temperature | | | | -35 to +70°C | | | -35 to +70°C | |
| Power loss (at In for 3P) | | [W] | | 39 | | | 60 | |
| Reference standard | | | IEC 60947-3 | IEC 60947-2 | IEC 60947-2 | IEC 60947-3 | IEC 60947-2 | IEC 60947-2 |
| Releases: switch | | | ok | – | – | ok | – | – |
| Releases: TM (thermomagnetic) | | | – | ok | ok | – | ok | ok |
| T fixed, M fixed | | | – | ok | – | – | ok | – |
| T adjustable, M fixed | | | – | – | ok | – | – | – |
| T adjustable, M adjustable | | | – | – | – | – | – | ok |
| Thermal adjustment value | | | – | – | 0.63 to 1 x In | – | – | 0.63 - 0.8 - 1 x In |
| Magnetic adjustment value | | | – | – | – | – | – | 5-7-9-11 x In |
| Releases: LSnI (electronic) Non-adjustable magnetic | | | – | – | – | – | – | – |
| Releases: LSI (electronic) | | | – | – | – | – | – | – |
| Long delay | | | – | – | – | – | – | – |
| Short delay | | | – | – | – | – | – | – |
| Time delay | | | – | – | – | – | – | – |
| **Connection** | | | | | | | | |
| Standard terminal type | | | | cage | | | lugs | |
| Terminal width | | mm | | 13 | | | 25 | |
| Terminal shields | | | | optional | | | optional | |
| Cage terminal | | | | integrated | | | ok | |
| Extended connections | | | | optional | | | optional | |
| Rear connections | | | | no | | | optional | |
| **Dimensions** | | | | | | | | |
| Height | | mm | | 130 | | | 165 | |
| Width | 3P | mm | | 75 | | | 105 | |
| | 4P | mm | | 100 | | | 140 | |
| Depth | | mm | | 68 | | | 68 | |
| **Weight** | 3P | **kg** | | 0.715 | | | 1.3 | |
| | 4P | **kg** | | 0.95 | | | 1.6 | |

* *Without links/with straight links*



Above ZAR prices do not include VAT. E&OE



| x630 | | P630 | | | h400e | h800e | h1000 | | | h1600 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MCCB | | Switch | MCCB | | ECONO MCCB | | Switch | MCCB | | Switch | MCCB | |
| HMJ | HEJ | HCW | HMW | HEW | HND | HNE | HCE | HNE | HEE | HCF | HNF | HEF |
| 3/4 | | 3/4 | | | 3/4 | | 3/4 | | | 3/4 | | |
| | | | | | | | | | | | | |
| 630 | | 630 | | | 400 | 800 | 1000 | | | 1600 | | |
| 320 - 630 | | 400 - 630 | | | 320 - 400 | 500 - 800 | 800 - 1000 | | | 1250 - 1600 | | |
| 220 - 690 | | 220 - 690 | | | 415 | | 220 - 415 | | | 220 - 415 | | |
| 50/60 | | 50/60 | | | 50 | | 50/60 | | | 50/60 | | |
| 800 | | 800 | | | 690 | | 800 | | | 800 | | |
| 8 | | 8 | | | 8 | | 8 | | | 8 | | |
| Yes | | Yes | | | Yes | | Yes | | | Yes | | |
| | | | | | | | | | | | | |
| 85 | 100 | – | 85 | 100 | – | – | – | 85 (800A), 75 (1000A) | 100 | – | 100 | 100 |
| **50** | **70** | **–** | **50** | **70** | **50** | **50** | **–** | **50** | **70** | **–** | **50** | **70** |
| – | – | – | – | – | – | – | – | 30 | 30 | – | 45 | 65 |
| – | – | – | 12 | 12 | – | – | – | 20 | 20 | – | 25 | 45 |
| 6 | 8 | – | – | – | – | – | – | – | – | – | – | – |
| | | | | | | | | | | | | |
| 85 | 100 | – | 85 | 100 | – | – | – | 85 (800A), 75 (1000A) | 100 (800A), 75 (1000A) | – | 75 | 75 |
| **50** | **70** | **–** | **50** | **70** | **36** | **36** | **–** | **50** | **50** | **–** | **50** | **50** |
| – | – | – | – | – | – | – | – | 30 | 30 | – | 45 | 50 |
| – | – | – | 12 | 12 | – | – | – | 20 | 20 | – | 25 | 34 |
| 6 | 8 | – | – | – | – | – | – | – | – | – | – | – |
| – | – | 7.5/13 | – | – | – | – | 20 | – | – | 45 | – | – |
| – | – | 5/7.6 | – | – | – | – | 10 (0.3s) | – | – | 20 (0.3s) | – | – |
| A | | – | A | | A | | – | B (800A), A (1000A) | | – | B | |
| TM | | – | Electronic | | TM | | – | Electronic | | – | Electronic | |
| 30°C (630A), 50°C (≤500A) | | – | 50°C | | 40°C | | – | 50°C | | – | 50°C | |
| 100% | | – | 100% | | 100% | 100% | – | 100% | | – | 100% | |
| 95% | | – | 95% | | 92% | 94% | – | 95% | | – | 95% | |
| 90% | | – | 90% | | 88% | 86% | – | 90% | | – | 90% | |
| 80% | | – | 80% | | 83% | 82% | – | 80% | | – | 80% | |
| 80% | | – | 80% | | – | | – | 80% | | – | 80% | |
| 6 000/4 000 | | 6 000/4 000 | | | 2000 | 1500 | 4 500 | | | 4500 | | |
| 15 000 | | 30 000 | | | 4000 | 4000 | 15 000 | | | 15000 | | |
| -25 to +70°C | | -25 to +70°C | | | -5 to +60°C | | -25 to +70°C | | | -25 to +70°C | | |
| -35 to +70°C | | -35 to +70°C | | | -25 to +70°C | | -35 to +70°C | | | -35 to +70°C | | |
| 176.3 | | 175.8 | | | | | 153.6 | | | 187.5 | | |
| IEC 60947-2 | | IEC 60947-3 | IEC 60947-2 | | IEC 60947-2 | | IEC 60947-3 | IEC 60947-2 | | IEC 60947-3 | IEC 60947-2 | |
| – | | ok | – | | – | | ok | – | | ok | – | |
| ok | | – | | | ok | | – | | | – | | |
| – | | – | | | ok | | – | | | – | | |
| – | | – | | | – | | – | | | – | | |
| ok | | – | | | – | | – | | | – | | |
| 0.63 - 0.8 - 1 x In | | – | | | – | | – | | | – | | |
| (400A) 5-6-7-8-9-10 (630)4-5-6-7-8 | | – | | | – | | – | | | – | | |
| – | | – | | | – | | – | | | | | |
| – | | – | ok | | – | | – | ok | | – | ok | |
| – | | – | 0.4 to 1 x Ir | | – | | – | 0.4 to 1 x Ir | | – | 0.4 to 1 x In | |
| – | | – | 1.5 to 10 x Ir | | – | | – | 2.5 to 10 x Ir (800A), 2.5 to 8 x Ir (1000A) | | – | 2.5 to 10 x Ir | |
| – | | – | 0.05 - 0.4s | | – | | – | 0.1 - 0.2s | | – | 0.1 - 0.2s | |
| | | | | | | | | | | | | |
| lugs | | lugs | | | lugs | | lugs | | | lugs | | |
| 32 | | 32 | | | – | | 45 | | | 45 | | |
| optional | | optional | | | – | | optional | | | optional | | |
| optional | | optional | | | – | | – | | | – | | |
| optional | | optional | | | integrated | | integrated | | | integrated | | |
| optional | | optional | | | optional | | optional | | | – | | |
| | | | | | | | | | | | | |
| 260 | | 260 | | | 257 | 275 | 273/433* | | | 370/570* | | |
| 140 | | 140 | | | 140 | 210 | 210 | | | 210 | | |
| 185 | | 185 | | | 184 | 280 | 280 | | | 280 | | |
| 150 | | 150 | | | 155 | 155 | 99.5 | | | 140 | | |
| 5.8 | | 4.8 | 5.8 | | 4.3 | 6.6 | 11 | | | 27 | | |
| 7.6 | | 6.4 | 7.6 | | 5.2 | 8.9 | 14.8 | | | 31 | | |


HHA125Z


HND400P


HNB250U


HMJ400DR


HEJ630DE

- Mechanical “test” button on the front
- Integrated padlock facility on toggle
- Cascading with MCBs *(see chart **Annex-5**)*
- Lockable thermal/magnetic settings
- Standards: SANS / IEC 60947-2

**"Clip-in" accessories** *(see MCCB accessories)*
- Auxiliary contacts
- Alarm contacts
- Shunt trip device
- Undervoltage release

| type | thermal current | rated kA 415V (Icu) | poles | description | frame | price |
|---|---|---|---|---|---|---|
| **Fixed-type thermal / magnetic trip 25 kA** | | | | | | |
| **Fixed:** Thermal 1 x In / magnetic >10 x In | | | | | | |
| **HHA016Z** | 16A | 25 kA | 3-pole | moulded case CB | x160 | **2 541.00** |
| **HHA020Z** | 20A | 25 kA | 3-pole | moulded case CB | x160 | **2 541.00** |
| **HHA025Z** | 25A | 25 kA | 3-pole | moulded case CB | x160 | **2 541.00** |
| **HHA032Z** | 32A | 25 kA | 3-pole | moulded case CB | x160 | **2 541.00** |
| **HHA040Z** | 40A | 25 kA | 3-pole | moulded case CB | x160 | **2 541.00** |
| **HHA050Z** | 50A | 25 kA | 3-pole | moulded case CB | x160 | **2 541.00** |
| **HHA063Z** | 63A | 25 kA | 3-pole | moulded case CB | x160 | **2 541.00** |
| **HHA080Z** | 80A | 25 kA | 3-pole | moulded case CB | x160 | **2 541.00** |
| **HHA100Z** | 100A | 25 kA | 3-pole | moulded case CB | x160 | **2 541.00** |
| **HHA125Z** | 125A | 25 kA | 3-pole | moulded case CB | x160 | **2 698.50** |
| **HHA160Z** | 160A | 25 kA | 3-pole | moulded case CB | x160 | **3 286.50** |
| **HHB200Z** | 200A | 25 kA | 3-pole | moulded case CB | x250 | **5 554.50** |
| **HHB250Z** | 250A | 25 kA | 3-pole | moulded case CB | x250 | **5 554.50** |
| **H3e series** economical, cost-efficient | | | | | | |
| • Not compatible with Quadro enclosure system | | | | | | |
| **Fixed:** Thermal 1.05 to 1.3 x In / magnetic >10 x In | | | | | | |
| **HND320P** | 320A | 50 kA | 3-pole | moulded case CB | h400e | **8 599.50** |
| **HND400P** | 400A | 50 kA | 3-pole | moulded case CB | h400e | **8 599.50** |
| **HNE500P** | 500A | 50 kA | 3-pole | moulded case CB | h800e | **13 545.00** |
| **HNE630P** | 630A | 50 kA | 3-pole | moulded case CB | h800e | **13 860.00** |
| **HNE800P** | 800A | 50 kA | 3-pole | moulded case CB | h800e | **14 175.00** |
| *4 pole available on request* | | | | | | |
| **Adjustable thermal / magnetic trip 40/50 kA** | | | | | | |
| • Window indicating the presence of: Auxiliary/alarm contacts, shunt trip, UV release | | | | | | |
| **TM:** Adjustable thermal 0.63 - 0.8 - 1 x In / fixed magnetic 5-10 x In (320-400A) and 4-8 x In (630A) | | | | | | |
| **HNA025U** | 16 - 25A | 40kA | 3-pole | moulded case CB | x160 | **2 824.50** |
| **HNA040U** | 25 - 40A | 40kA | 3-pole | moulded case CB | x160 | **2 782.50** |
| **HNA063U** | 40 - 63A | 40kA | 3-pole | moulded case CB | x160 | **2 782.50** |
| **HNA100U** | 63 - 100A | 40kA | 3-pole | moulded case CB | x160 | **2 782.50** |
| **HNA125U** | 80 - 125A | 40kA | 3-pole | moulded case CB | x160 | **2 782.50** |
| **HNA160U** | 101 - 160A | 40kA | 3-pole | moulded case CB | x160 | **3 255.00** |
| **HNA026U** | 16 - 25A | 40kA | 4-pole | moulded case CB | x160 | **3 748.50** |
| **HNA041U** | 25 - 40A | 40kA | 4-pole | moulded case CB | x160 | **3 748.50** |
| **HNA064U** | 40 - 63A | 40kA | 4-pole | moulded case CB | x160 | **3 748.50** |
| **HNA101U** | 63 - 100A | 40kA | 4-pole | moulded case CB | x160 | **3 748.50** |
| **HNA126U** | 80 - 125A | 40kA | 4-pole | moulded case CB | x160 | **3 748.50** |
| **HNA161U** | 101 - 160A | 40kA | 4-pole | moulded case CB | x160 | **4 546.50** |
| **TM:** Adjustable thermal 0.63 - 0.8 - 1 x In / adjustable magnetic 5-7-9-11 x In | | | | | | |
| **HNB250U** | 160 - 250A | 40kA | 3-pole | moulded case CB | x250 | **7 644.00** |
| **HNB251U** | 160 - 250A | 40kA | 4-pole | moulded case CB | x250 | **9 492.00** |
| **TM:** Adjustable thermal 0.63 - 0.8 - 1 x In / adjustable magnetic 6-12 x In | | | | | | |
| **HMJ320DR** | 202 - 320A | 50kA | 3-pole | moulded case CB | x630 | **12 495.00** |
| **HMJ400DR** | 252 - 400A | 50kA | 3-pole | moulded case CB | x630 | **12 600.00** |
| **HMJ630DE** | 397 - 630A | 50kA | 3-pole | moulded case CB | x630 | **14 910.00** |
| **HMJ321DR** | 202 - 320A | 50kA | 4-pole | moulded case CB | x630 | **16 695.00** |
| **HMJ401DR** | 252 - 400A | 50kA | 4-pole | moulded case CB | x630 | **16 905.00** |
| **HMJ631DE** | 397 - 630A | 50kA | 4-pole | moulded case CB | x630 | **19 425.00** |
| **Adjustable thermal / magnetic trip 70 kA** | | | | | | |
| **HEJ320DR** | 202 - 320A | 70kA | 3-pole | moulded case CB | x630 | **13 860.00** |
| **HEJ400DR** | 252 - 400A | 70kA | 3-pole | moulded case CB | x630 | **14 280.00** |
| **HEJ630DE** | 397 - 630A | 70kA | 3-pole | moulded case CB | x630 | **16 485.00** |
| **HEJ321DR** | 202 - 320A | 70kA | 4-pole | moulded case CB | x630 | **17 745.00** |
| **HEJ401DR** | 252 - 400A | 70kA | 4-pole | moulded case CB | x630 | **18 585.00** |
| **HEJ631DE** | 397 - 630A | 70kA | 4-pole | moulded case CB | x630 | **21 315.00** |
| *Frame size x/P630 with direct connection* | | | | | | |



Above ZAR prices do not include VAT. E&OE


HNE970H


HEW630JR


HCW630AR


HCF990H

- Mechanical “test” button on the front
- Integrated padlock facility on toggle
- Cascading with MCBs *(see chart **Annex-5**)*
- Lockable thermal/magnetic settings
- Standards: SANS / IEC 60947-2

**"Clip-in" accessories** *(see MCCB accessories)*
- Auxiliary contacts
- Alarm contacts
- Shunt trip device
- Undervoltage release

| type | thermal current | rated kA 415V (Icu) | poles | description | frame | price |
|---|---|---|---|---|---|---|
| **Adjustable electronic release (LSI) 50 kA** | | | | | | |
| **LSI:** P630: Ir = (0.4...1 x In) x (0.91...1) / Isd = OFF / Ir x 1.5...10 / td = 0.05...0.4s<br>h1000: Ir = (0.4...1 x In) / Isd = Ir x 2.5...10 (800A) / Ir x 2.5...8 (1000A) / td = 0.1...0.2s<br>h1600: Ir = (0.4...1 x In) / Isd = Ir x 2.5...10 / td = 0.1...0.2s | | | | | | |
| **HMW400JR** | 146- 400A | 50 kA | 3-pole | moulded case CB | P630 | **19 635.00** |
| **HMW630JR** | 230 - 630A | 50 kA | 3-pole | moulded case CB | P630 | **20 580.00** |
| **HNE800H** | 320 - 800A | 50 kA | 3-pole | moulded case CB | h1000 | **28 455.00** |
| **HNE970H** | 400 - 1000A | 50 kA | 3-pole | moulded case CB | h1000 | **45 045.00** |
| **HNF980H** | 500 -1250A | 50 kA | 3-pole | moulded case CB | h1600 | **53 445.00** |
| **HNF990H** | 640 - 1600A | 50 kA | 3-pole | moulded case CB | h1600 | **68 145.00** |
| **HMW401JR** | 146- 400A | 50 kA | 4-pole | moulded case CB | P630 | **25 410.00** |
| **HMW631JR** | 230 - 630A | 50 kA | 4-pole | moulded case CB | P630 | **28 980.00** |
| **HNE801H** | 320 - 800A | 50 kA | 4-pole | moulded case CB | h1000 | **42 105.00** |
| **HNE971H** | 400 - 1000A | 50 kA | 4-pole | moulded case CB | h1000 | **57 960.00** |
| **HNF981H** | 500 - 1250A | 50 kA | 4-pole | moulded case CB | h1600 | **72 135.00** |
| **HNF991H** | 640 - 1600A | 50 kA | 4-pole | moulded case CB | h1600 | **91 875.00** |
| **Adjustable electronic release (LSI) 70 kA** | | | | | | |
| **HEW400JR** | 146 - 400A | 70 kA | 3-pole | moulded case CB | P630 | **22 995.00** |
| **HEW630JR** | 230 - 630A | 70 kA | 3-pole | moulded case CB | P630 | **24 990.00** |
| **HEE800H** | 320 - 800A | 70 kA | 3-pole | moulded case CB | h1000 | **30 240.00** |
| **HEE970H** | 400 - 1000A | 70 kA | 3-pole | moulded case CB | h1000 | **48 090.00** |
| **HEF980H** | 500 - 1250A | 70 kA | 3-pole | moulded case CB | h1600 | **59 535.00** |
| **HEF990H** | 640 - 1600A | 70 kA | 3-pole | moulded case CB | h1600 | **83 160.00** |
| **HEW401JR** | 146 - 400A | 70 kA | 4-pole | moulded case CB | P630 | **27 720.00** |
| **HEW631JR** | 230 - 630A | 70 kA | 4-pole | moulded case CB | P630 | **30 870.00** |
| **HEE801H** | 320 - 800A | 70 kA | 4-pole | moulded case CB | h1000 | **40 740.00** |
| **HEE971H** | 400 - 1000A | 70 kA | 4-pole | moulded case CB | h1000 | **64 995.00** |
| **HEF981H** | 500 - 1250A | 70 kA | 4-pole | moulded case CB | h1600 | **80 325.00** |
| **HEF991H** | 640 - 1600A | 70 kA | 4-pole | moulded case CB | h1600 | **112 350.00** |
| **Load break switches** | *(switch disconnectors / isolators)* | | | | | |
| **HCA125Z** | 125A | – | 3-pole | load break switch | x160 | **1 533.00** |
| **HCA160Z** | 160A | – | 3-pole | load break switch | x160 | **1 596.00** |
| **HCB250Z** | 250A | – | 3-pole | load break switch | x250 | **3 979.50** |
| **HCW400AR** | 400A | – | 3-pole | load break switch | P630 | **10 353.00** |
| **HCW630AR** | 630A | – | 3-pole | load break switch | P630 | **13 440.00** |
| **HCE800H** | 800A | – | 3-pole | load break switch | h1000 | **23 625.00** |
| **HCE970H** | 1000A | – | 3-pole | load break switch | h1000 | **35 910.00** |
| **HCF980H** | 1250A | – | 3-pole | load break switch | h1600 | **52 500.00** |
| **HCF990H** | 1600A | – | 3-pole | load break switch | h1600 | **60 375.00** |
| **HCA126Z** | 125A | – | 4-pole | load break switch | x160 | **2 005.50** |
| **HCA161Z** | 160A | – | 4-pole | load break switch | x160 | **2 152.50** |
| **HCB251Z** | 250A | – | 4-pole | load break switch | x250 | **4 546.50** |
| **HCW401AR** | 400A | – | 4-pole | load break switch | P630 | **12 915.00** |
| **HCW631AR** | 630A | – | 4-pole | load break switch | P630 | **17 535.00** |
| **HCE801H** | 800A | – | 4-pole | load break switch | h1000 | **31 920.00** |
| **HCE971H** | 1000A | – | 4-pole | load break switch | h1000 | **50 715.00** |
| **HCF981H** | 1250A | – | 4-pole | load break switch | h1600 | **70 875.00** |
| **HCF991H** | 1600A | – | 4-pole | load break switch | h1600 | **81 480.00** |

*Frame size x/P630 with direct connection*

## MCCB accessories


Auxiliaries


Undervoltage


Rotary handles


Motor operators

| MCCB Accessories Chart | | | Auxiliary contacts | | Alarm contacts | Shunt trip | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 1NO+1NC | 2NO+2NC | 1NO+1NC | 24V DC | 110V AC | 230V AC | 400V AC |
| Frame size | x160 | HHA / HNA | HXA021H | – | HXA024H | HXA001H | HXA003H | HXA004H | HXA005H |
| | x250 | HHB / HNB | HXA021H | – | HXA024H | HXA001H | HXA003H | HXA004H | HXA005H |
| | x630 H3 | HMJ / HEJ / HMW / HEW | HXA021H | – | HXA024H | HXA001H | HXA003H | HXA004H | HXA005H |
| | P630 H3+ | HMJ / HEJ / HMW / HEW | HXA021H | – | HXA024H | HXA001H | HXA003H | HXA004H | HXA005H |
| | h1000 | HNE | HXC021H | – | HXC024H | HXC001H | HXC003H | HXC004H | HXC005H |
| | h1600 | HNF | HXC021H | – | HXC024H | HXF001H | HXF003H | HXF004H | HXF005H |
| | h400e | HNDxxxP | – | HXD022P | HXD024P | HXD006P | – | HXD004P | HXD005P |
| | h800e | HNExxxP | – | HXE022P | HXE024P | HXE006P | – | HXE004P | HXE005P |


HXA021H HXA024H HXC024H


HXC014H


HXC004H


HXA030H


HXA031H

| type | voltage | | | description | | frame | price |
|---|---|---|---|---|---|---|---|
| **Accessories for MCCBs and load break switches** | | | | | | | |
| **Auxiliary contacts** | | | | | | | |
| **HXA021H** | 1NO + 1NC | auxiliary | contact | 1NO+1NC for circuit breakers | | x160-x/P630 | **318.15** |
| **HXC021H** | 1NO + 1NC | auxiliary | contact | 1NO+1NC for circuit breakers | | h1000/h1600 | **1 071.00** |
| **HXD022P** | 2NO + 2NC | auxiliary | contact | 2NO+2NC for circuit breakers | | h400e | **1 323.00** |
| **HXE022P** | 2NO + 2NC | auxiliary | contact | 2NO+2NC for circuit breakers | | h800e | **1 617.00** |
| **HXA024H** | 1NO + 1NC | alarm | contact | 1NO+1NC for circuit breakers | | x160-x/P630 | **448.35** |
| **HXC024H** | 1NO + 1NC | alarm | contact | 1NO+1NC for circuit breakers | | h1000/h1600 | **1 071.00** |
| **HXD024P** | 1NO + 1NC | alarm | contact | 1NO+1NC for circuit breakers | | h400e | **658.35** |
| **HXE024P** | 1NO + 1NC | alarm | contact | 1NO+1NC for circuit breakers | | h800e | **849.45** |
| **Shunt trip units (SH)** | | | | | | | |
| **HXA00*H** | shunt | (SH) | | shunt trip device for circuit breakers | | x160-x/P630 | **1 134.00** |
| **HXC00*H** | shunt | (SH) | | shunt trip device for circuit breakers | | h1000 | **1 123.50** |
| **HXF00*H** | shunt | (SH) | | shunt trip device for circuit breakers | | h1600 | **1 974.00** |
| * ***1*** *= 24 VDC,* ***3*** *= 110 VAC,* ***4*** *= 230 VAC,* ***5*** *= 400 VAC* | | | | | | | |
| **HXD00*P** | shunt | (SH) | | shunt trip device for circuit breakers | | h400e | **1 554.00** |
| **HXE00*P** | shunt | (SH) | | shunt trip device for circuit breakers | | h800e | **1 774.50** |
| * ***6*** *= 24 VDC,* ***4*** *= 230 VAC,* ***5*** *= 400 VAC* | | | | | | | |
| **Undervoltage release (UV)** | | | | | | | |
| **HXA014H** | 230 VAC | (UV) | | undervolt release for circuit breakers | | x160-x/P630 | **1 312.50** |
| **HXA015H** | 380 VAC | (UV) | | undervolt release for circuit breakers | | x160-x/P630 | **1 480.50** |
| **HXD014P** | 230 VAC | (UV) | | undervolt release for circuit breakers | | h400e | **1 753.50** |
| **HXD015P** | 380 VAC | (UV) | | undervolt release for circuit breakers | | h400e | **1 753.50** |
| **HXE014P** | 230 VAC | (UV) | | undervolt release for circuit breakers | | h800e | **1 911.00** |
| **HXE015P** | 380 VAC | (UV) | | undervolt release for circuit breakers | | h800e | **1 963.50** |
| **HXE014H** | 230 VAC | (UV) | | undervolt release for circuit breakers | | h1000/1600 | **1 911.00** |
| **HXE015H** | 380 VAC | (UV) | | undervoltage release for circuit breakers | | h1000/1600 | **2 079.00** |
| **Direct rotary handles** | | | | | | | |
| • Direct mounting<br>• Padlockable in “off” position | | | | | | | |
| **HXA030H** | direct mount | | | front mount rotary handle for circuit breakers | | x160 | **1 984.50** |
| **HXB030H** | direct mount | | | front mount rotary handle for circuit breakers | | x250 | **1 984.50** |
| **HXW030H** | direct mount | | | front mount rotary handle for circuit breakers | | x630/P630 | **1 879.50** |
| **HXE030H** | direct mount | | | front mount rotary handle for circuit breakers | | h1000 | **3 244.50** |
| **HXF030H** | direct mount | | | front mount rotary handle for circuit breakers | | h1600 | **4 462.50** |
| **Extended rotary handles** | | | | | | | |
| • Vari-depth door interlocking | | | | | | | |
| **HXA031H** | vary-depth | 200 mm | | door interlocking rotary handle and shaft | | x160 | **2 625.00** |
| **HXB031H** | vary-depth | 200 mm | | door interlocking rotary handle and shaft | | x250 | **2 625.00** |
| **HXW031H** | vary-depth | | | door interlocking rotary handle and shaft | | x630/P630 | **4 021.50** |
| **HXD031P** | vary-depth | | | door interlocking rotary handle and shaft | | h400e | **1 753.50** |
| **HXE031P** | vary-depth | | | door interlocking rotary handle and shaft | | h800e | **2 194.50** |
| **HXE031H** | vary-depth | | | door interlocking rotary handle and shaft | | h1000 | **11 550.00** |
| **HXF031H** | vary-depth | | | door interlocking rotary handle and shaft | | h1600 | **14 280.00** |



Above ZAR prices do not include VAT. E&OE

| Undervoltage | | Rotary handles | | Motor operators | | Terminals and mounting | | | |
|---|---|---|---|---|---|---|---|---|---|
| 230V AC | 440V AC | Direct | Vary-depth | Auto reset 230 VAC | NO Auto reset 230 VAC | Adaptors | Shrouds 3P | Shrouds 4P | Phase barriers |
| HXA014H | HXA015H | HXA030H | HXA031H | – | – | HYA033H | HYA027H | HYA028H | HYA019H |
| HXA014H | HXA015H | HXB030H | HXB031H | HXB042H | – | HYB033H | HYB021H | HYB022H | HYB019H |
| HXA014H | HXA015H | HXW030H | HXW031H | HXW042H | HXW044H | – | HYW023H | HYW024H | HYW019H |
| HXA014H | HXA015H | HXW030H | HXW031H | HXW042H | HXW044H | – | HYW023H | HYW024H | HYW019H |
| HXE014H | HXE015H | HXE030H | HXE031H | HXE042H | – | – | HYE021H | HYE022H | HYD019H |
| HXE014H | HXE015H | HXF030H | HXF031H | HXF042H | – | – | – | – | HYD019H |
| HXD014P | HXD015P | – | HXD031P | HXD042P | – | – | – | – | – |
| HXE014P | HXE015P | – | HXE031P | HXE042P | – | – | – | – | – |



HXB042H



HYA033H



HYA014H



HYA027H



A48-M10/31

| type | voltage | description | frame | price |
|---|---|---|---|---|
| **Motor operators for MCCBs** | | | | |
| **HXB042H** | 230 VAC | motor operator for remote operation of MCCB | x250 | **14 280.00** |
| **HXW042H** | 110 - 230 VAC | motor operator for remote operation of MCCB | x630/P630 | **20 055.00** |
| **HXW044H*** | 110 - 230 VAC | motor operator for remote operation of MCCB | x630/P630 | **20 055.00** |
| **HXE042H** | 230 VAC | motor operator for remote operation of MCCB | h1000 | **32 235.00** |
| **HXF042H** | 230 VAC | motor operator for remote operation of MCCB | h1600 | **32 550.00** |
| **HXD042P** | 230 VAC | motor operator for remote operation of MCCB | h400e | **8 232.00** |
| **HXE042P** | 230 VAC | motor operator for remote operation of MCCB | h800e | **9 324.00** |
| * *Non auto reset* | | | | |
| **Terminals and mounting accessories** | | | | |
| **Adaptors** | | | | |
| **HYA033H** | adaptor | DIN-rail mounting adaptor | x160 | **165.90** |
| **HYB033H** | adaptor | DIN-rail mounting adaptor | x250 | **411.60** |
| **HYA036H** | DIN-rail raiser | MCBs to match MCCBs on DIN-rail | (3 pcs) | **263.55** |
| **Terminals** | | | | |
| **HYB001H** | set of 3 | 150 mm² collar terminals for cables | x250 | **3 507.00** |
| **HYW001H** | set of 3 | 300 mm² collar terminals for cables | x630/P630 | **3 192.00** |
| **HYA014H** | 3-pole | spreader link extended terminals | x160 | **413.70** |
| **HYB011H** | 3-pole | spreader link extended terminals | x250 | **517.65** |
| **HYW014H** | 3-pole | spreader link extended terminals | x630/P630 | **2 173.50** |
| **HYA015H** | 4-pole | spreader link extended terminals | x160 | **465.15** |
| **HYB012H** | 4-pole | spreader link extended terminals | x250/P250 | **740.25** |
| **HYW015H** | 4-pole | spreader link extended terminals | x630/P630 | **2 887.50** |
| **Shrouds** | | | | |
| **HYA027H** | 3-pole | terminal shrouds | x160 | **788.55** |
| **HYB021H** | 3-pole | extended terminal shrouds | x250 | **788.55** |
| **HYW023H** | 3-pole | extended terminal shrouds | x630/P630 | **925.05** |
| **HYE021H** | 3-pole | extended terminal shrouds | h1000 | **2 457.00** |
| **HYA028H** | 4-pole | terminal shrouds | x160 | **295.05** |
| **HYB022H** | 4-pole | terminal shrouds | x250 | **411.60** |
| **HYW024H** | 4-pole | terminal shrouds | x630/P630 | **1 025.85** |
| **HYE022H** | 4-pole | terminal shrouds | h1000 | **3 328.50** |
| **Phase barriers** | | | | |
| **HYA019H** | set of 3 | spare interphase barriers | x160 | **321.30** |
| **HYB019H** | set of 3 | spare interphase barriers | x250 | **362.25** |
| **HYW019H** | set of 3 | spare interphase barriers | x630/P630 | **237.30** |
| **HYD019H** | set of 3 | spare interphase barriers | h1000/h1600 | **373.80** |

## Special *"contained palm"* cable lugs for MCCBs

AM range of cable lugs by Cembre are designed to obtain the most efficient electrical conductivity and mechanical strength to resist vibration and pull out.

| type | cable size | lug width | hole Ø | description | for MCCB | price (ea) |
|---|---|---|---|---|---|---|
| **A24B-M8/19** | 120 mm² | 19.0 mm | M8 | contained palm cable lug (ea) | x250 | **189.00** |
| **A30B-M8/19** | 150 mm² | 19.0 mm | M8 | contained palm cable lug (ea) | x250 | **233.10** |
| **A37B-M10/24.5** | 185 mm² | 24.5 mm | M10 | contained palm cable lug (ea) | 250/400/630 | **258.30** |
| **A48-M10/31** | 240 mm² | 31.0 mm | M10 | contained palm cable lug (ea) | 400/630 | **338.10** |

# Say hello to hw+

Explore the new innovative, easy-to-install ACB range from Hager.



## A new era in protection

Introducing Hager's new hw+ range of compact and reliable Air Circuit Breakers and Switch Disconnectors.

- Ideal for residential, commercial and industrial applications, the range offers robust protection against overloads, short circuits and ground faults
- Flexible connection options and a comprehensive set of accessories ensure seamless integration into your electrical system

Experience **smart, safe**, and **simple** power protection with Hager

## Features

- Easy commissioning via software
- Easy and safe mounting of accessories
- Plug & play rating plug
- Simple locking and interlocking
- Output alarm contacts
- Warnings and trip alarms
- Secure & easy-to-use trip units
- Compact dimensions



hager

Scan the QR code to download the brochure



HW1


HW2


HW3

**hw+ air circuit breakers and switch disconnectors**

| Frame | | | HW1 | | HW2 | | HW4 | |
|---|---|---|---|---|---|---|---|---|
| Product | | | ACB | switch | ACB | switch | ACB | switch |
| Version | | | fixed / draw-out | | fixed / draw-out | | fixed / draw-out | |
| Number of poles | | | 3 / 4 | | 3 / 4 | | 3 / 4 | |
| Rated current @ 50 deg C | | In | 1250-1600A | | 2500A | | 3200-4000A | |
| Rated operational voltage | | Ue | 690 VAC | | 690 VAC | | 690 VAC | |
| Rated insulation voltage | | Ui | 1000 VAC | | 1000 VAC | | 1000 VAC | |
| Rated impulse withstand voltage | | Uimp | 12 kV | | 12 kV | | 12 kV | |
| Standards compliance | | | **IEC 60947-2** | **IEC 60947-3** | **IEC 60947-2** | **IEC 60947-3** | **IEC 60947-2** | **IEC 60947-3** |
| Selectivity category according to IEC 60947-2 | | | B | – | B | – | B | – |
| Pollution degree according to IEC 60947-1 | | | 3 | | 3 | | 3 | |
| Utilization category according to IEC 60947-3 | | | – | AC-23A | – | AC-23A | – | AC-23A |
| Rated ultimate short-circuit breaking capacity: | 380-415 VAC | Icu | 66 kA | – | 66 kA | – | 85 kA | – |
| | 440 VAC | | 66 kA | – | 66 kA | – | 85 kA | – |
| | 500-525 VAC | | 42 kA | – | 55 kA | – | 75 kA | – |
| | 690 VAC | | 42 kA | – | 55 kA | – | 75 kA | – |
| Rated making capacity: | 380-415 VAC | Icm | 145 kA | 121 kA | 145 kA | 145 kA | 187 kA | 187 kA |
| | 440 VAC | | 145 kA | 121 kA | 145 kA | 145 kA | 187 kA | 187 kA |
| | 500-525 VAC | | 88 kA | 88 kA | 121 kA | 145 kA | 165 kA | 187 kA |
| | 690 VAC | | 88 kA | 88 kA | 121 kA | 145 kA | 165 kA | 187 kA |
| Short-time withstand current rating capacity 1s | 400 VAC | Icw | 55 kA | | 66 kA | | 85 kA | |
| Break time between tripping order and arc extinction | | | < 25 ms | – | < 25 ms | – | < 25 ms | – |
| Closing time | | | < 50 ms | – | < 50 ms | – | < 50 ms | – |
| Mechanical durability | cycles x 1000 | | 12.5 | | 12.5 | | 10 | – |
| Electrical endurance at In | cycles x 1000 | | 8 | 6 | 8 | | 6 | – |
| Tripping unit | | | sentinal electronic LSIG | – | sentinal electronic LSIG | – | sentinal electronic LSIG | – |
| Connection: | Fixed | Front* | yes | | – | | – | |
| | | Rear | yes | | yes | | yes | |
| | Draw-out | Front* | yes | | – | | – | |
| | | Rear | yes | | yes | | yes | |
| Dimensions H(mm) x W(mm) x D(mm): | Fixed | 3-pole | 313 x 276 x 227 | | 416 x 385 x 373 | | 416 x 478 x 373 | |
| | | 4-pole | 313 x 346 x 227 | | 416 x 480 x 373 | | 416 x 604 x 373 | |
| | Draw-out | 3-pole | 322 x 284 x 328 | | 450 x 400 x 465 | | 450 x 493 x 465 | |
| | | 4-pole | 322 x 349 x 328 | | 450 x 495 x 465 | | 450 x 619 x 465 | |

* *Front connection for **HW1** fixed / draw-out ACB optional*

**Sentinal Electronic LSIG tripping unit**

hw+ air circuit breakers are equipped with a LSIG sentinel electronic trip unit used to protect cable lines and equipment against overloads, short circuits and earth faults.

Dynamic LCD and settings dials accessible from the front of the hw+ circuit breakers, permitting precise indication and adjustment of protection settings.

**LTD Long Time Delay protection** ①

Overload protection, fine setting of Ir (A) is done using two dials Ir1 and Ir2, the time delay tr (s) can be set via a dial from 0.5 to 25 s.

**STD Short Time Delay Protection** ②

Short-circuit protection, Isd (x Ir) current adjusted using a dial from 1 to 10 times the protection of the Ir or can be deactivated (OFF).

The time delay tsd (s) adjustable via a dial from 50 to 600 ms with the option of including an inverse time curve ($I^2t$ OFF or ON).

**INST Instantaneous protection** ③

Instantaneous protection against short-circuits, Ii (x In) can be set using a dial from 1.5 to 15 times rated current value In or can be deactivated (OFF).

**GF earth fault protection** ④

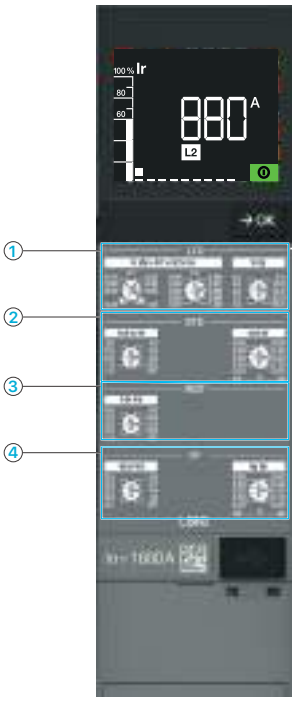
Phase-to-earth fault protection, Ig (x In) is set using a dial from 0.1 to 1 times the rated current In or can be deactivated (OFF).

The time delay tg (s) adjustable via a dial from 50 to 600 ms with the option of including an inverse time curve ($I^2t$ OFF or ON).

**Neutral protection N**

Factory-installed on 4-pole circuit breakers, it is necessary if the neutral conductor cross section is less than that of the phases or is heavily loaded.

It uses the LTD, STD and INST protection parameters.





**Air circuit breakers** *(fixed)*

- Terminals easily converted from horizontal to vertical orientation
- Compact dimensions
- Quick and easy mounting of accessories
- 3 frame sizes: **HW1** 1250 - 1600A
  **HW2** 2500A
  **HW4** 3200 - 4000A

**Fixed circuit breakers are supplied standard with the following:**

- Auxiliary contacts *(4 C/O) / HW4 (6C/O)*
- Fault indication contact *(not on switch-disconnectors)*
- RTC (ready to close) contact for "spring loaded" indication
- Door mounting frame/flange
- OCR - LSIG microprocessor protection and control unit *(with colour LCD)*

New



HW1E312FB



HW2W325FS

| type | thermal adjustment (A) | breaking capacity 415V (rms) | poles | mount | description | frame size | price |
|---|---|---|---|---|---|---|---|
| **Fixed-type air circuit breaker** | | | | | | | |
| **Three-pole air circuit breakers** | | | | | | | |
| **HW1E312FB** | 455 - 1250A | 66kA | 3-pole | fixed | air circuit breaker | HW1 | **73 500.00** |
| **HW1E316FB** | 583 - 1600A | 66kA | 3-pole | fixed | air circuit breaker | HW1 | **76 545.00** |
| **HW2E325FB** | 910 - 2500A | 66kA | 3-pole | fixed | air circuit breaker | HW2 | **103 635.00** |
| **HW4S332FB** | 1165 - 3200A | 85kA | 3-pole | fixed | air circuit breaker | HW4 | **121 800.00** |
| **HW4S340FB** | 1456 - 4000A | 85kA | 3-pole | fixed | air circuit breaker | HW4 | **142 800.00** |
| **Four-pole air circuit breakers** | | | | | | | |
| **HW1E412FB** | 455 - 1000A | 66kA | 4-pole | fixed | air circuit breaker | HW1 | **87 675.00** |
| **HW1E416FB** | 583 - 1600A | 66kA | 4-pole | fixed | air circuit breaker | HW1 | **95 970.00** |
| **HW2E425FB** | 910 - 2500A | 66kA | 4-pole | fixed | air circuit breaker | HW2 | **128 100.00** |
| **HW4S432FB** | 1165 - 3200A | 85kA | 4-pole | fixed | air circuit breaker | HW4 | **142 800.00** |
| **HW4S440FB** | 1456 - 4000A | 85kA | 4-pole | fixed | air circuit breaker | HW4 | **174 300.00** |

| **Switch-disconnectors** | Utilization category according to IEC 60947-3 | | | | | | |
|---|---|---|---|---|---|---|---|
| type | rated current (A) | short-time withstand Icw (1s) | poles | mount | description | frame size | price |
| **Three-pole switch-disconnectors** | | | | | | | |
| **HW1W312FS** | 1250A | 55kA | 3-pole | fixed | switch-disconnector | HW1 | **55 650.00** |
| **HW1W316FS** | 1600A | 55kA | 3-pole | fixed | switch-disconnector | HW1 | **58 905.00** |
| **HW2W325FS** | 2500A | 66kA | 3-pole | fixed | switch-disconnector | HW2 | **87 675.00** |
| **HW4W332FS** | 3200A | 85kA | 3-pole | fixed | switch-disconnector | HW4 | **98 595.00** |
| **HW4W340FS** | 4000A | 85kA | 3-pole | fixed | switch-disconnector | HW4 | **120 750.00** |
| **Four-pole switch-disconnectors** | | | | | | | |
| **HW1W412FS** | 1250A | 55kA | 4-pole | fixed | switch-disconnector | HW1 | **65 310.00** |
| **HW1W416FS** | 1600A | 55kA | 4-pole | fixed | switch-disconnector | HW1 | **73 605.00** |
| **HW2W425FS** | 2500A | 66kA | 4-pole | fixed | switch-disconnector | HW2 | **106 050.00** |
| **HW4W432FS** | 3200A | 85kA | 4-pole | fixed | switch-disconnector | HW4 | **120 750.00** |
| **HW4W440FS** | 4000A | 85kA | 4-pole | fixed | switch-disconnector | HW4 | **152 250.00** |

## **Draw-out type** 3-pole circuit breaker outside its chassis:

1. Terminal blocks TB
2. Lifting handle
3. Front cover
4. Electronic trip unit
5. Charging handle




## **Terminal** connections:






Above ZAR prices do not include VAT. E&OE

**Air circuit breakers** *(Draw-out)*

- Terminals easily converted from horizontal to vertical orientation
- Compact dimensions
- Quick and easy mounting of accessories
- 3 frame sizes: **HW1** 1250 - 1600A
  **HW2** 2500A
  **HW4** 3200 - 4000A

**Draw-out circuit breakers are supplied with the following:**

- Auxiliary contacts *(4 C/O) / HW4 (6C/O)*
- Fault indication contact *(not on switch-disconnectors)*
- RTC *(ready to close)* contact for "spring loaded" indication
- OCR - LSIG microprocessor protection and control unit *(with colour LCD)*
- Panel door ingress seal *(flange for compartment door)*
- Cradle/chassis of draw-out circuit breaker
- Operation *(racking)* crank handle
- Safety shutters *(padlockable top and bottom)*



HW2E325DB

| type | thermal adjustment (A) | breaking capacity 415V (rms) | poles | mount | description | frame size | price |
|---|---|---|---|---|---|---|---|
| **Draw-out air circuit breaker** | | | | | | | |
| **Three-pole air circuit breakers** | | | | | | | |
| **HW1E312DB** | 455 - 1250A | 66kA | 3-pole | draw-out | air circuit breaker | HW1 | **97 860.00** |
| **HW1E316DB** | 583 - 1600A | 66kA | 3-pole | draw-out | air circuit breaker | HW1 | **101 115.00** |
| **HW2E325DB** | 910 - 2500A | 66kA | 3-pole | draw-out | air circuit breaker | HW2 | **140 700.00** |
| **HW4S332DB** | 1165 - 3200A | 85kA | 3-pole | draw-out | air circuit breaker | HW4 | **157 500.00** |
| **HW4S340DB** | 1456 - 4000A | 85kA | 3-pole | draw-out | air circuit breaker | HW4 | **183 750.00** |
| **Four-pole** | | | | | | | |
| **HW1E412DB** | 455 - 1250A | 66kA | 4-pole | draw-out | air circuit breaker | HW1 | **118 650.00** |
| **HW1E416DB** | 583 - 1600A | 66kA | 4-pole | draw-out | air circuit breaker | HW1 | **120 750.00** |
| **HW2E425DB** | 910 - 2500A | 66kA | 4-pole | draw-out | air circuit breaker | HW2 | **164 850.00** |
| **HW4S432DB** | 1165 - 3200A | 85kA | 4-pole | draw-out | air circuit breaker | HW4 | **204 750.00** |
| **HW4S440DB** | 1456 - 4000A | 85kA | 4-pole | draw-out | air circuit breaker | HW4 | **239 400.00** |



HW2E325DB

**Switch-disconnectors** Utilization category according to IEC 60947-3

| type | rated current (A) | short-time withstand Icw (1s) | poles | mount | description | frame size | price |
|---|---|---|---|---|---|---|---|
| **Three-pole switch-disconnectors** | | | | | | | |
| **HW1W312DS** | 1250A | 55kA | 3-pole | draw-out | switch-disconnector | HW1 | **75 495.00** |
| **HW1W316DS** | 1600A | 55kA | 3-pole | draw-out | switch-disconnector | HW1 | **78 750.00** |
| **HW2W325DS** | 2500A | 66kA | 3-pole | draw-out | switch-disconnector | HW2 | **118 650.00** |
| **HW4W332DS** | 3200A | 85kA | 3-pole | draw-out | switch-disconnector | HW4 | **135 450.00** |
| **HW4W340DS** | 4000A | 85kA | 3-pole | draw-out | switch-disconnector | HW4 | **161 700.00** |
| **Four-pole** | | | | | | | |
| **HW1W412DS** | 1250A | 55kA | 4-pole | draw-out | switch-disconnector | HW1 | **95 970.00** |
| **HW1W416DS** | 1600A | 55kA | 4-pole | draw-out | switch-disconnector | HW1 | **97 860.00** |
| **HW2W425DS** | 2500A | 66kA | 4-pole | draw-out | switch-disconnector | HW2 | **142 800.00** |
| **HW4W432DS** | 3200A | 85kA | 4-pole | draw-out | switch-disconnector | HW4 | **182 700.00** |
| **HW4W440DS** | 4000A | 85kA | 4-pole | draw-out | switch-disconnector | HW4 | **216 300.00** |

## ACB draw-out version

**Chasis** *(fixed part)*



• The chassis (fixed part) is installed in the enclosure

+

**Body** *(moving part)*



• The body (moving part) is mounted inside the chassis

=

**ACB**



• Once installed. Body can be moved to any of the 3 available positions: Connected / Test / Disconnected

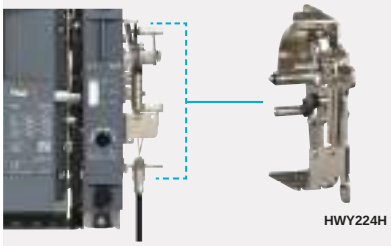

HWX024HSA


HWX030HSA


HWX014HSA


HWX040HSA


HWY952HSA


HWY224H


HWY218H

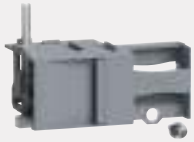
## Air circuit breaker (ACB) accessories

- Quick and easy mounting of all accessories
- **SH, CC, UVT, MO, AX** - *require* ***HWY950HSA*** *terminal block (below)*

| type | ref. | description | supply voltage | for ACB | price |
|---|---|---|---|---|---|
| **Shunt trip** *(opening release)* | | | *to remotely open the circuit breaker* | | |
| **HWX020HSA** | SH | shunt opening release | 24-30V AC/DC | all ACB | **2 016.00** |
| **HWX022HSA** | SH | shunt opening release | 100-130V AC/DC | all ACB | **1 680.00** |
| **HWX023HSA** | SH | shunt opening release | 200-250V AC/DC | all ACB | **1 680.00** |
| **HWX024HSA** | SH | shunt opening release | 380-480V AC | all ACB | **1 680.00** |
| **Shunt closing release** | | | *to remotely close the circuit breaker* | | |
| **HWX025HSA** | CC | shunt closing release | 24-30V AC/DC | all ACB | **2 016.00** |
| **HWX027HSA** | CC | shunt closing release | 100-130V AC/DC | all ACB | **1 680.00** |
| **HWX028HSA** | CC | shunt closing release | 200-250V AC/DC | all ACB | **1 680.00** |
| **HWX029HSA** | CC | shunt closing release | 380-480V AC | all ACB | **1 680.00** |
| **Under voltage release** | | | *to remotely open the circuit breaker* | | |
| **HWX030HSA** | UVT | under voltage release | 24-30V AC/DC | all ACB | **2 341.50** |
| **HWX032HSA** | UVT | under voltage release | 100-130V AC/DC | all ACB | **2 016.00** |
| **HWX033HSA** | UVT | under voltage release | 200-250V AC/DC | all ACB | **2 016.00** |
| **HWX034HSA** | UVT | under voltage release | 380-480V AC | all ACB | **2 016.00** |
| **Motor operators** | | | *to automatically recharge the closing spring* | | |
| **HWX004HSA** | MO | for charging of closing spring | 200-250V AC | HW1 | **5 355.00** |
| **HWX005HSA** | MO | for charging of closing spring | 380-400V AC | HW1 | **5 355.00** |
| **HWX014HSA** | MO | for charging of closing spring | 200-250V AC | HW2/4 | **5 691.00** |
| **HWX015HSA** | MO | for charging of closing spring | 380-400V AC | HW2/4 | **5 691.00** |
| **HWX701HSA** | MO | for charging of closing spring | 24V DC | HW1 | **6 027.00** |
| **HWX711HSA** | MO | for charging of closing spring | 24V DC | HW2/4 | **6 363.00** |
| **Auxiliary contacts** | | | *for remote signalling of "open" or "closed" status of ACB* | | |
| **HWX040HSA** | AX | auxiliary contact for ACB | 1 CO | HW1 | **2 016.00** |
| **HWX042HSA** | AX | auxiliary contact for ACB | 1 CO | HW2/4 | **2 016.00** |
| **Output alarm contacts module** | | | *integrates into the ACB without external accessories* | | |
| The **OAC** output module has 5 alarm output contacts assigned to the following events:<br>- LTD tripping<br>- Overload pre-alarm<br>- Tripping due to a critical system alarm<br>- STD / INST / MCR tripping<br>- GF tripping | | | | | |
| **HWX090HSA*** | OAC | output alarm contacts module | 1 CO | all ACB | **10 038.00** |
| * *Requires* **HWY952HSA** *terminal block (below)* | | | | | |
| **Terminal block** | | | *connection terminal for terminating accessories in the ACB* | | |
| **HWY950HSA** | TB | connection terminal block | type A 6/3 | all ACB | **735.00** |
| **HWY952HSA** | TB | connection terminal block | type C 2x 6/3 | all ACB | **1 050.00** |
| **Mechanical interlock** | | | *to mechanically interlock two circuit breakers* | | |
| **HWY224H*** | MI | mechanical interlock for | fixed | HW1 | **4 683.00** |
| **HWY226H*** | MI | mechanical interlock for | fixed | HW2/4 | **8 032.50** |
| **HWY225H*** | MI | mechanical interlock for | draw-out | HW1 | **6 027.00** |
| **HWY227H*** | MI | mechanical interlock for | draw-out | HW2/4 | **10 038.00** |
| * *One required for each circuit breaker* | | | | | |
| **Cable set - for interlocks** | | | *1 x set = 2x cables (only one set required for two ACB)* | | |
| **HWY218H** | MI | cable set for mech. interlocks | 1.5 meter | all ACB | **2 677.50** |
| **HWY228H** | MI | cable set for mech. interlocks | 3 meter | all ACB | **4 021.50** |
| **Door frame** *(spare)* | | | *supplied standard with all ACB* | | |
| - Protects the protruding front face of the ACB and the cut edge of the panel door<br>- Includes clamps at the back enabling quick, tool-free installation | | | | | |
| **HWY280H** | DF | door frame for fixed ACB | fixed | HW1 | **1 344.00** |
| **HWY281H** | DF | door frame for draw-out ACB | draw-out | HW1 | **1 344.00** |
| **HWY284H** | DF | door frame for fixed ACB | fixed | HW2 | **1 680.00** |
| **HWY285H** | DF | door frame for draw-out ACB | draw-out | HW2 | **1 680.00** |
| **HWY288H** | DF | door frame for fixed ACB | fixed | HW4 | **1 680.00** |
| **HWY289H** | DF | door frame for draw-out ACB | draw-out | HW4 | **1 680.00** |



Above ZAR prices do not include VAT. E&OE


HWY265HSA


HWY261HSA


HWY089HSA


HWY041HSA


HWY240HSA

## Air circuit breaker (ACB) accessories

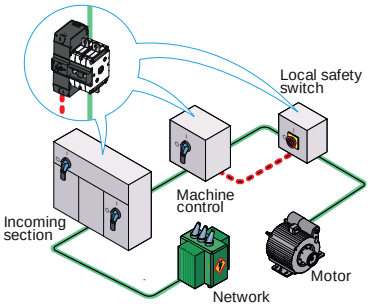
- Quick and easy mounting of all accessories

| type | ref. | description | poles | for ACB | price |
|---|---|---|---|---|---|
| **Locking device adaptor** | | *for locking circuit breaker in "OFF" position* | | | |
| **HWY269HSA** | OLP | adaptor for using padlocks | 3/4-pole | HW1 | **1 680.00** |
| **HWY265HSA** | OLP | adaptor for using padlocks | 3/4-pole | HW2/4 | **1 680.00** |
| **HWY260HSA** | OLK | adaptor for using key locks | 3/4-pole | HW1 | **1 680.00** |
| **HWY261HSA** | OLK | adaptor for using key locks | 3/4-pole | HW2/4 | **1 680.00** |
| *Keylocks and padlocks to be purchased separately* | | | | | |
| **HWY701** | – | Ronis type key lock - type 1 | K1 - L1/L4 | all ACB | **928.20** |
| **HWY702** | – | Ronis type key lock - type 2 | K2 - L2/L4/L5 | all ACB | **1 323.00** |
| **HWY703** | – | Ronis type key lock - type 3 | K3 - L3/L5 | all ACB | **1 323.00** |
| **HWY704** | – | Ronis type key lock - type 4 | K4 - L4 | all ACB | **1 407.00** |
| **HWY705** | – | Ronis type key lock - type 5 | K5 - L5 | all ACB | **1 407.00** |
| **Arc chute cover** | | *for fixed circuit breakers with front facing connections* | | | |
| **HWY958H** | | chamber cover for fixed | 3-pole | HW1 | **3 349.50** |
| **HWY959H** | | chamber cover for fixed | 4-pole | HW1 | **3 349.50** |
| **Pushbutton cover** | | *to lock out access to the circuit breaker push buttons* | | | |
| **HWY089HSA** | PBC | pushbutton cover | 3/4-pole | HW1 | **1 680.00** |
| **HWY090HSA** | PBC | pushbutton cover | 3/4-pole | HW2/4 | **1 785.00** |
| **Accessories for draw-out breakers** | | *for draw-out version ACB* | | | |
| **Position contact** | | *indicates one of the three positions of ACB within the chassis* | | | |
| **HWX050HSA** | PS | position contact for | draw-out | ACB | **1 344.00** |
| **Racking interlock** | | *prevents insertion of racking handle when enclosure door is open* | | | |
| **HWY238H** | RI | door racking interlock for | draw-out | HW1 | **535.50** |
| **HWY239H** | RI | door racking interlock for | draw-out | HW2/4 | **535.50** |
| **Connection accessories** | | *for air circuit breakers* | | | |
| All circuit breakers are supplied standard with rear horizontal terminals that can easily be converted to vertical orientation. Connection kits *(below)* permit conversion to other forms of termination such as Spreader, Front connection or for Vertical connection. | | | | | |
| **Spreader links for circuit breaker** | | *top (or) bottom* | | | |
| **HWY001H** | SP | spreader link kit | 3-pole | HW1 | **10 038.00** |
| **HWY002H** | SP | spreader link kit | 4-pole | HW1 | **13 440.00** |
| **Front connection kit for circuit breaker** | | *top (or) bottom* | | | |
| **HWY040HSA** | FC | front connection for fixed | 3-pole | HW1 | **6 688.50** |
| **HWY041HSA** | FC | front connection for fixed | 4-pole | HW1 | **10 038.00** |
| **HWY044HSA** | FC | front connection for draw-out | 3-pole | HW1 | **10 038.00** |
| **HWY045HSA** | FC | front connection for draw-out | 4-pole | HW1 | **13 440.00** |
| **Vertical connector conversion kit** | | *top (or) bottom* | | | |
| **HWY005H** | VCA | vertical connector kit | 3-pole | HW1 | **13 440.00** |
| **HWY006H** | VCA | vertical connector kit | 4-pole | HW1 | **16 800.00** |
| **Interphase barrier set** - *highly recommended for voltages above 500V* | | | | | |
| **HWY240HSA** | IB | ph barriers for fixed/draw-out | 3-pole | HW1 | **3 349.50** |
| **HWY241HSA** | IB | ph barriers for fixed/draw-out | 4-pole | HW1 | **5 019.00** |
| **HWY246HSA** | IB | phase barriers for fixed | 3-pole | HW2/4 | **4 021.50** |
| **HWY247HSA** | IB | phase barriers for fixed | 4-pole | HW2/4 | **6 027.00** |
| **HWY248HSA** | IB | phase barriers for draw-out | 3-pole | HW2/4 | **4 021.50** |
| **HWY249HSA** | IB | phase barriers for draw-out | 4-pole | HW2/4 | **6 027.00** |





Scan the QR Code ▶
for **How To Tutorial** videos for the new HW+ ACB range




## SIRCO M and MV manually operated switches

**SIRCO** modular switches make and break under load conditions and provide safety isolation for any low voltage circuit, particularly for machine control circuits.

Within a single product, **SIRCO M** offers front or side operation. The highly functional design enables the switch to be easily transformed from a load break switch to a changeover switch, offering a highly innovative modular solution for numerous applications.

**General features:**

- Modular DIN-rail mounting *(fits into standard distribution board 45 mm cut-out)*
- External front *(or side)* operating handle and shaft *(to be ordered separately-see below)*
- Severe load duty categories (AC-22 and AC-23)
- Conformity to standards: IEC 60947-3


2200 3005

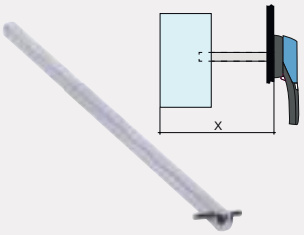

2200 3011

| type | AC-22 A 415V (A) | AC-23 A 400V (kW) | No. poles | frame size | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **SIRCO M series - Load break switches** | | | | | **16 - 125A** | | | | |
| **2200 3000** | 16A | 7.5 kW | 3 | M1 | load break switch | 68 | 45 | 75 | **400.05** |
| **2200 3002** | 25A | 11.0 kW | 3 | M1 | load break switch | 68 | 45 | 75 | **458.85** |
| **2200 3003** | 32A | 15.0 kW | 3 | M1 | load break switch | 68 | 45 | 75 | **516.60** |
| **2200 3004** | 40A | 18.5 kW | 3 | M1 | load break switch | 68 | 45 | 75 | **528.15** |
| **2200 3005** | 63A | 22.0 kW | 3 | M1 | load break switch | 68 | 45 | 75 | **711.90** |
| **2200 3006** | 63A | 30.0 kW | 3 | M2 | load break switch | 76 | 53 | 75 | **991.20** |
| **2200 3008** | 80A | 37.0 kW | 3 | M2 | load break switch | 76 | 53 | 75 | **1 176.00** |
| **2200 3010** | 100A | 45.0 kW | 3 | M3 | load break switch | 125 | 78 | 75 | **1 344.00** |
| **2200 3011** | 125A | 55.0 kW | 3 | M3 | load break switch | 125 | 78 | 75 | **1 627.50** |
| **SIRCO MV series - Load break switches** | | | 160A | | *(visual double break contacts)* | | | | |
| **2200 3016** | 160A | 75.0 kW | 3 | MV | load break switch | 125 | 109 | 75 | **3 318.00** |
| **2200 4016** | 160A | 75.0 kW | 4 | MV | load break switch | 125 | 135 | 75 | **4 000.50** |


2200 3016


1474 1111


1413 2111



1407 0520


2299 5012


2299 0011

## Operating handles and shafts *for above switches* — IP65

- External front operated, door interlocking, padlockable in "off" position *(up to 3 padlocks)*
- Defeatable interlocking mechanism

| type | handle size | colour | description | for switch frame | (A) | price |
|---|---|---|---|---|---|---|
| **Handles for switches** - *external operation* | | | | | | |
| **1473 1111** | S00 | black | external operating handle for switches | M1 - 2 | 16 - 80A | **208.95** |
| **1474 1111** | S00 | red/yellow | external operating handle for switches | M1 - 2 | 16 - 80A | **219.45** |
| **1483 1111** | S0 | black | external operating handle for switches | M3 | 100 - 125A | **299.25** |
| **1484 1111** | S0 | red/yellow | external operating handle for switches | M3 | 100 - 125A | **299.25** |
| **1493 0111** | S0 | black | external operating handle for switches | MV | 160A | **344.40** |
| **1413 2111** | S1 | black | external operating handle for switches | MV | 160A | **492.45** |
| **141D 2911** | S1 | black | as above *(with metal padlocking mech.)* | MV | 160A | **896.70** |
| **Extension shafts for switches** | | | | | | |
| **1407 0520** | S000/S00/S0 | 200 mm | □ 5 extension shaft for switch | M1 - 3 | 16 - 125A | **112.35** |
| **1407 0532** | S000/S00/S0 | 320 mm | □ 5 extension shaft for switch | M1 - 3 | 16 - 125A | **131.25** |
| **1409 0632** | S00/S0 | 320 mm | □ 6 extension shaft for switch | MV | 160A | **168.00** |
| **1401 0632** | S1 | 320 mm | □ 6 extension shaft for switch | MV | 160A | **552.30** |
| **1419 0000** | guide | *(permits engaging of misaligned shaft with handle)* | | | S000/S00/S0 | **118.65** |
| **1429 0000** | guide | *(permits engaging of misaligned shaft with handle)* | | | S1 | **162.75** |
| **Direct mount handles** | | | *(mounts directly onto front of switch - no shaft required)* | | | |
| **2299 5012** | M00 | blue | direct switch mount handle | M - 2 | 16 - 80A | **28.77** |
| **2299 5032** | M01 | blue | direct switch mount handle | M3 | 100 - 125A | **88.20** |
| **2299 5042** | M0b | blue | direct switch mount handle | MV | 160A | **130.20** |

## Auxiliary contacts *for M/MV switches*

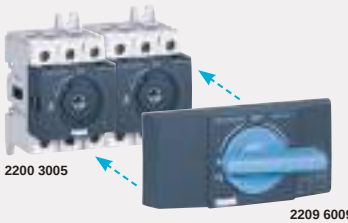
| | | | | | | |
|---|---|---|---|---|---|---|
| **2299 0001** | 1NO + 1NC | M type | side mount auxiliary contact | M/MV | 16 - 160A | **339.15** |
| **2299 0011** | 2NO | M type | side mount auxiliary contact | M/MV | 16 - 160A | **339.15** |
| **3999 0701** | 1NO | U type | internal mounting auxiliary contact | MV | 160A | **271.95** |
| **3999 0702** | 1NC | U type | internal mounting auxiliary contact | MV | 160A | **271.95** |

***Example:*** *To build up 63A 3-pole changeover with direct handle*
Combine 2 x **2200 3005** and 1 x **2209 6009**

***Alternatively:*** *Refer to page **B-36** for pre-assembled units*



Above ZAR prices do not include VAT. E&OE















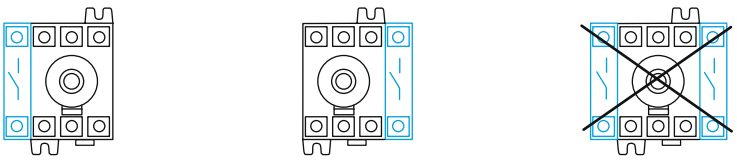

**Conversion kits for Sirco M switches** *(mechanical interlock / parallel attachment)*

**Sirco M** switches can be converted to 3 or 4-pole changeover switches with conversion kits. A mechanical interlock module simply clips onto two identical 3-pole switches to provide a changeover facility.

- 4th poles clip onto 3-pole switches for 4-pole applications

| type | info | no. of poles | description | for switch frame | (A) | price |
|---|---|---|---|---|---|---|
| **Changeover mechanism** | | | *(mechanically interlocks two switches)* | | | |
| Supplied with direct mounting operating handle. Handle and shaft to be ordered separately for externally mounted applications. | | | | | | |
| **2209 6009** | I-O-II | | changeover mechanism between two switches | M1 - 2 | 16 - 80A | **664.65** |
| **2209 6011** | I-O-II | | changeover mechanism between two switches | M3 | 100 - 125A | **1 302.00** |
| **Handles and shafts for changeover switches** | | | | | | |
| **1473 1113** | S00 | I-O-II | for above changeover switches | M1 - 2 | 16 - 80A | **280.35** |
| **1473 0113** | S00 | I-O-II | for above changeover switches | M3 | 100 - 125A | **370.65** |
| **1407 0532** | S00 | 320 mm | □ 5 extension shaft for switch | M1 - 2 | 16 - 80A | **131.25** |
| **1409 0632** | S00 | 320 mm | □ 6 extension shaft for switch | M3 | 100 - 125A | **168.00** |
| **Bridging kit for changeover switches** | | | | | | |
| **2299 3005** | bridge | 3-pole | bridging kit for ch/over switches | M1 | 16 - 40A | **958.65** |
| **2299 4005** | bridge | 4-pole | bridging kit for ch/over switches | M1 | 16 - 40A | **1 134.00** |
| **2299 3009** | bridge | 3-pole | bridging kit for ch/over switches | M2 | 63 - 80A | **1 606.50** |
| **2299 4009** | bridge | 4-pole | bridging kit for ch/over switches | M2 | 63 - 80A | **1 932.00** |
| **Parallel attachments** | | | | | | |
| A mechanical module simply clips onto two identical 3/4-pole switches to provide a 6/8 pole switch that switches simultaneously. | | | | | | |
| **2269 6009** | I-O | 6/8-pole | conversion kit between two switches | M1 - 2 | 16 - 80A | **665.70** |
| **2269 6011** | I-O | 6/8-pole | conversion kit between two switches | M3 | 100 - 125A | **1 312.50** |
| **Handles and shafts for above parallel attachments** *(IP65)* | | | | | | |
| **1473 1111** | S00 | I-O | ext. operating handle for switches | M1 - 2 | 16 - 80A | **208.95** |
| **1473 0111** | S0 | I-O | ext. operating handle for switches | M3 | 100 - 125A | **334.95** |
| **1407 0532** | S000/S00/S0 | 320 mm | □ 5 extension shaft for switch | M1 - 2 | 16 - 80A | **131.25** |
| **1409 0632** | S00/S0 | 320 mm | □ 6 extension shaft for switch | M3 | 125A | **168.00** |
| *Handle and shaft to be ordered separately for externally mounted applications* | | | | | | |
| **Attachable 4th pole module** | | | | | | |
| • Clips onto either side of 3-pole switches | | | | | | |
| **2200 1004** | 40A | 1-pole | attachable 4th pole module | M1 | 16 - 40A | **197.40** |
| **2200 1005** | 63A | 1-pole | attachable 4th pole module | M1 | 63A | **250.95** |
| **2200 1008** | 80A | 1-pole | attachable 4th pole module | M2 | 63 - 80A | **342.30** |
| **2200 1011** | 125A | 1-pole | attachable 4th pole module | M3 | 100 - 125A | **534.45** |
| **Door mount kit** | | | | | | |
| • For direct door or side panel mounting of Sirco M switches<br>• Compatible with 3/4-pole switches with S00 type handles only | | | | | | |
| **2299 3409** | | | door mounting kit *(direct door mounting of switch)* | M1 - 2 | 16 - 80A | **186.90** |
| **2299 3609** | | | door mounting kit *(direct door mounting of switch)* | M3 | 100 - 125A | **1 480.50** |
| **Terminal shrouds** | | | | | | |
| • Top *(or)* bottom terminal protection *(two required for total protection)* | | | | | | |
| **2294 1005** | shroud | 1-pole | t/parent terminal protection shroud | M1 | 16 - 63A | **58.80** |
| **2294 3005** | shroud | 3-pole | t/parent terminal protection shroud | M1 | 16 - 63A | **123.90** |
| **2294 1009** | shroud | 1-pole | t/parent terminal protection shroud | M2 | 63 - 80A | **79.80** |
| **2294 3009** | shroud | 3-pole | t/parent terminal protection shroud | M2 | 63 - 80A | **183.75** |
| **2294 1011** | shroud | 1-pole | t/parent terminal protection shroud | M3 | 100 - 125A | **88.20** |
| **2294 3016** | shroud | 3-pole | t/parent terminal protection shroud | M3/MV | 100 - 160A | **227.85** |
| **2294 4016** | shroud | 4-pole | t/parent terminal protection shroud | MV | 160A | **283.50** |

## Additional 4th pole configuration




26AC 3025
+
1423 2111

## SIRCO series - Manually operated switches

SIRCO switches make and break under load conditions and provide safety isolation for any low voltage circuit.

- External front operating handle and shaft *(to be ordered separately - see below)*
- Severe load duty categories (AC-22 and AC-23)
- Position indicator located on the sliding bar mechanism, ensures visibility in all circumstances
- High thermal and dynamic withstand
- High electrical and mechanical endurance
- Conformity to standards: IEC/EN 60947-3 / IS13947-3 / KEMA / RINA


26AC 3025

### SIRCO AC series - Load break switches 125 - 3200A

SIRCO double break per pole achieved through its sliding bar contact system offers very high durability and short-circuit withstand.

#### 3-pole switches

| type | AC-22 A 415V (A) | AC-23 A 400V | No. poles | frame size | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **2600 3014** | 125A | 63 kW | 3 | B3 | load break switch | 135 | 140 | 115 | **1 585.50** |
| **2600 3017** | 160A | 80 kW | 3 | B3 | load break switch | 135 | 140 | 115 | **1 816.50** |
| **26AC 3020** | 200A | 110 kW | 3 | B4 | load break switch | 160 | 180 | 115 | **3 780.00** |
| **26AC 3025** | 250A | 110 kW | 3 | B4 | load break switch | 160 | 180 | 115 | **3 969.00** |
| **26AC 3031** | 315A | 160 kW | 3 | B4 | load break switch | 160 | 180 | 115 | **4 683.00** |
| **26AC 3040** | 400A | 220 kW | 3 | B5 | load break switch | 235 | 230 | 165 | **7 140.00** |
| **26AC 3050** | 500A | 295 kW | 3 | B5 | load break switch | 235 | 230 | 165 | **9 061.50** |
| **26AC 3063** | 630A | 375 kW | 3 | B5 | load break switch | 260 | 230 | 165 | **9 775.50** |
| **26AC 3080** | 800A | 475 kW | 3 | B6 | load break switch | 321 | 280 | 166 | **12 495.00** |
| **26AC 3100** | 1000A | 600 kW | 3 | B6 | load break switch | 321 | 280 | 166 | **21 210.00** |
| **26AC 3121** | 1250A | 750 kW | 3 | B7 | load break switch | 288 | 372 | 166 | **24 885.00** |
| **26AC 3160** | 1600A | 600 kW | 3 | B7 | load break switch | 288 | 372 | 166 | **31 710.00** |
| **2600 3200** | 2000A | 710 kW | 3 | B8 | load break switch | 380 | 372 | 226 | **46 515.00** |
| **2600 3250** | 2500A | 900 kW | 3 | B8 | load break switch | 380 | 372 | 226 | **55 755.00** |
| **2600 3320** | 3200A | 900 kW | 3 | B8 | load break switch | 380 | 372 | 226 | **77 175.00** |

#### 4-pole switches

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **26AC 4025** | 250A | 132 kW | 4 | B4 | load break switch | 160 | 230 | 115 | **5 386.50** |
| **26AC 4040** | 400A | 220 kW | 4 | B5 | load break switch | 235 | 290 | 160 | **9 177.00** |
| **26AC 4063** | 630A | 280 kW | 4 | B5 | load break switch | 260 | 290 | 160 | **12 390.00** |
| **26AC 4080** | 800A | 450 kW | 4 | B6 | load break switch | 321 | 360 | 166 | **18 480.00** |
| **26AC 4121** | 1250A | 710 kW | 4 | B7 | load break switch | 288 | 492 | 166 | **36 015.00** |

*Larger sizes (up to 5000A) available on request*


1423 2111

### Operating handles and shafts *for above switches* IP65

| type | handle | colour | description | frame | (A) | price |
|---|---|---|---|---|---|---|
| **External front operated door interlocking, padlockable in "off" position** *(3 padlocks)* | | | | | | |
| **1423 2111** | S2 | black | pistol grip ext. operating handle | B3 - 5 | 125 - 630A | **500.85** |
| **1443 3111** | S4 | black | "T" grip ext. operating handle | B6 - 7 | 800 - 1600A | **1 438.50** |
| **1453 8111** | S5 | black | "T" grip ext. operating handle | B8 | 2000 - 3200A | **4 777.50** |
| **142D 2911** | S2 | black | as above *(with metal padlock mech.)* | B3 - 5 | 125 - 630A | **891.45** |
| **144D 3911** | S4 | black | as above *(with metal padlock mech.)* | B6 - 7 | 800 - 1600A | **1 995.00** |
| **1400 1032** | S2 | 320 mm | □ 10 extension shaft | B3 - 5 | 125 - 630A | **255.15** |
| **1400 1050** | S2 | 500 mm | □ 10 extension shaft | B3 - 5 | 125 - 630A | **504.00** |
| **1401 1532** | S4 | 320 mm | □ 15 extension shaft | B6 - 7 | 800 - 1600A | **534.45** |
| **1401 1540** | S4 | 400 mm | □ 15 extension shaft | B6 - 7 | 800 - 1600A | **1 014.30** |
| **2799 3018** | S5 | 320 mm | □ 30 extension shaft | B8 | 2000 - 3200A | **1 375.50** |
| **1429 0000** | guide | *(permits engaging of misaligned shaft with handle)* | | | S2/S4/S5 | **162.75** |
| **Direct mount handles** *(mounts directly onto front of switch)* | | | | | | |
| **2699 5042** | B1 | black | direct switch mount handle | B3 | 125 - 160A | **393.75** |
| **1112 1111** | J1 | black | direct switch mount handle | B4 - 5 | 200 - 630A | **442.05** |
| **1142 1111** | J4 | black | direct switch mount handle | B6 - 8 | 800 - 3200A | **1 564.50** |
| **2799 7042** | S5 | black | direct switch mount handle | B8 | 2000 - 3200A | **2 383.50** |
| **Auxiliary contacts** *for switches* | | | | | | |
| **2699 0031** | 1 C/Over | aux | auxiliary contact and support | B3 - 8 | 125 - 3200A | **237.30** |
| **2699 0032** | 1 C/Over | aux | additional auxiliary contact | B3 - 8 | 125 - 3200A | **598.50** |
| **Inter-phase barriers** | *(essential for use at 690VAC or in a polluted or dusty atmosphere)* | | | | | |
| **2998 0033** | barriers | – | phase barriers for switches *(2pcs)* | B3 | 125-160A | **396.90** |
| **2998 0023** | barriers | – | phase barriers for switches *(2pcs)* | B4 | 200- 315A | **473.55** |
| **2998 0013** | barriers | – | phase barriers for switches *(2pcs)* | B5 | 315 - 630A | **547.05** |


B1 S4 S5


1400 1032


2699 0031



Above ZAR prices do not include VAT. E&OE


21PV 3722
+
2119 1012

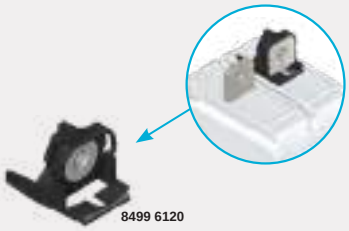

26PV 2016
+
1112 1111


86P2 2100


2119 3312


1423 2111


2119 0001


8499 6120

## Load break switches for DC and PV applications

Can also be used for emergency power switching applications. INOSYS load break switches incorporate patented technology providing a breaking capacity of 1500 VDC in just 2-poles.

| type | rated current | poles/ config. | nominal voltage | utilization cat. DC-21B | utilization cat. PV2 | frame size | description | price |
|---|---|---|---|---|---|---|---|---|
| **SIRCO MC PV series - PV load break switches** | | | | | | **DC-21B** | | |
| **21PV 3722** | 25A | 2P+, 1P- | 1000 VDC | • | – | MC | DC load-break switch | **1 617.00** |
| **21PV 4754** | 40A | 2P+, 2P- | 1000 VDC | • | – | MC | DC load-break switch | **2 142.00** |
| **SIRCO PV series - PV load break switches** | | | | | | **DC-21B** | | |
| **26PV 2010** | 100A | 1P+, 1P- | 1000 VDC | • | – | B4 | DC load-break switch | **3 066.00** |
| **26PV 2016** | 160A | 1P+, 1P- | 1000 VDC | • | – | B4 | DC load-break switch | **3 402.00** |
| **26PV 2025** | 250A | 1P+, 1P- | 1000 VDC | • | – | B4 | DC load-break switch | **3 958.50** |
| **26PV 2031** | 315A | 1P+, 1P- | 1000 VDC | • | – | B4 | DC load-break switch | **4 483.50** |
| **26PV 4040** | 400A | 2P+, 2P- | 1000 VDC | • | – | B4 | DC load-break switch | **6 226.50** |

## INOSYS LBS series - PV load break switches — DC-21B and DC-PV2

**INOSYS LBS DC** a range of manually controlled load break switches can also be used for emergency power switching applications. INOSYS load break switches incorporate patented technology providing a breaking capacity of 750 VDC per pole and 1500 VDC in just 2-poles, significantly limiting power dissipation, in an exceptionally compact device.

**INOSYS** range meets or exceeds industry standards and certifications, ensuring compliance with all electrical safety regulations and guidelines.

Scan to watch

- High performance power switching in a compact frame
- Safe & reliable operation
- Designed for harsh environments
- No derating up to 55°C, functional from -40 to +70°C
- Conformity to standards: IEC 60947-3, DC-21B & DC-PV2
- Direct position indication on the bar and visible contact with containment of the electrical arc
- Switching is independent on the speed of operation, ensuring safe operation under all conditions

| type | rated current | poles/ config. | nominal voltage | utilization cat. DC-21B | utilization cat. PV2 | frame size | description | price |
|---|---|---|---|---|---|---|---|---|
| **Single switch poles - on either side of operating mechanism** | | | | | | | | |
| **86P1 1017** | 160A | 1P+, 1P- | 1500 VDC | • | • | F2 | DC load-break switch | **5 691.00** |
| **86P1 1026** | 250A | 1P+, 1P- | 1500 VDC | • | • | F2 | DC load-break switch | **7 171.50** |
| **86P1 1032** | 315A | 1P+, 1P- | 1500 VDC | • | • | F2 | DC load-break switch | **8 568.00** |
| **86P1 1041** | 400A | 1P+, 1P- | 1500 VDC | • | • | F3 | DC load-break switch | **12 075.00** |
| **86P1 1064** | 630A | 1P+, 1P- | 1500 VDC | • | • | F3 | DC load-break switch | **17 115.00** |
| **Double switch poles - on either side of operating mechanism** | | | | | | | | |
| **86P2 2081** | 800A | 2P+, 2P- | 1500 VDC | • | • | F3 | DC load-break switch | **18 795.00** |
| **86P2 2100** | 1000A | 2P+, 2P- | 1500 VDC | • | • | F3 | DC load-break switch | **21 420.00** |
| **86P2 2125** | 1250A | 2P+, 2P- | 1500 VDC | • | – | F3 | DC load-break switch | **30 660.00** |
| **86P2 2160** | 1600A | 2P+, 2P- | 1500 VDC | • | – | F3 | DC load-break switch | **39 480.00** |

*Bridge pieces to couple up poles in series* **8409 1600** *supplied separately (see below)*

## Accessories - *for above switches*

| | | | | | frame size | (A) | |
|---|---|---|---|---|---|---|---|
| **Handles and shafts** *for above switches - external operation* | | | | | | | |
| **2119 3312** | MC1 | black | | external operating handle | MC | 25 - 40A | **634.20** |
| **1423 2111** | S2 | black | | door interlock/padlockable in OFF | B4 | 160 - 315A | **500.85** |
| **742F 2111** | S2 | black | | door interlock/padlockable in OFF | F2 | 160 - 630A | **736.05** |
| **14AF 2111** | S2L | black | | door interlock/padlockable in OFF | F3 | 800 - 1600A | **582.75** |
| **2107 0516** | MC1 | 165 mm | □5 | extension shaft | MC | 25 - 40A | **277.20** |
| **1400 1032** | S2 | 320 mm | □10 | extension shaft | B4/F2 - 3 | 160 - 1600A | **255.15** |
| **Direct mount handles** *(mounts directly onto front of switch - no shaft required)* | | | | | | | |
| **2119 1012** | MC01 | blue | | direct switch mounting handle for | MC | 25 - 40A | **348.60** |
| **1112 1111** | J1 | black | | direct switch mount handle for | B4 | 160-315A | **442.05** |
| **8499 5022** | E2 | black | | direct switch mounting handle for | F2 | 160 - 630A | **285.60** |
| **8499 5032** | E3 | black | | direct switch mounting handle for | F3 | 800 - 1600A | **325.50** |
| **Auxiliary contacts for switches** | | | | | | | |
| **2119 0001** | aux. | 1NO+1NC | | auxiliary contact block for | MC | 25 - 40A | **762.30** |
| **2699 0031** | aux. | 1CO | | auxiliary contact block for | B4 | 160 - 315A | **237.30** |
| **8499 0001** | aux. | 1NO+1NC | | auxiliary contact block for | F2 - 3 | 160 - 1600A | **653.10** |
| **Terminal accessories** | | | | | | | |
| **8499 6120** | nut | support | | retaining captive nut for switch | F2 | *(12 pack)* | **1 218.00** |
| **8499 6130** | nut | support | | retaining captive nut for switch | F3 | *(12 pack)* | **2 404.50** |
| **8409 1600** | bridge | bar | | to couple poles for switch *(2 pcs)* | F3 | 800 - 1600A | **4 021.50** |


2115 3401


2115 3403


ESW3080M


32LC 3163

**Enclosed isolator switches** *(manually operated)*

Socomec **COMO** series enclosed isolators are supplied in robust, heavy-duty ABS enclosures.

- Red/yellow handle, interlocked with front cover in ON position, padlockable *(3 padlocks)* in OFF position

| type | AC-23A ≤ 400V | AC-23A ≤ 525V | poles | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Enclosed isolator switches** *(manually operated)* | | | | ABS enclosure | | | **IP65** | |
| **2115 3401** | 20A | 7.5 kW | 3 | enclosed load-break switch | 90 | 64 | 58 | **604.80** |
| **2115 3403** | 32A | 11.0 kW | 3 | enclosed load-break switch | 152 | 100 | 81 | **780.15** |
| **2115 3404** | 40A | 18.5 kW | 3 | enclosed load-break switch | 152 | 100 | 81 | **807.45** |
| **2115 3406** | 63A | 22.0 kW | 3 | enclosed load-break switch | 152 | 100 | 81 | **1 354.50** |
| **2115 4401** | 20A | 7.5 kW | 4 | enclosed load-break switch | 90 | 64 | 58 | **651.00** |
| **2115 4404** | 40A | 18.5 kW | 4 | enclosed load-break switch | 152 | 100 | 81 | **937.65** |
| **2115 4406** | 63A | 22.0 kW | 4 | enclosed load-break switch | 152 | 100 | 81 | **1 491.00** |
| **Auxiliary contacts** *(for above)* **enclosed switches** | | | | | | | | |
| **2113 4001** | NO + NC | auxiliary | | contact for enclosed switches | | | 32 - 50A | **231.00** |
| **2113 4002** | 2 NO | auxiliary | | contact for enclosed switches | | | 33 - 50A | **324.45** |
| **Sheet metal enclosure** | | | | Colour: BS/EN06 E53 *(electric orange)* | | | **IP65** | |

- IP65 sheet metal enclosed load-break switches
- Door interlocking in "ON" position, padlockable *(3 padlocks)* in "OFF" position

**3-pole switches**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **ESW3004M** | 40A | 18.5 kW | 3 | enclosed load-break switch | 350 | 250 | 170 | **2 856.00** |
| **ESW3006M** | 63A | 30 kW | 3 | enclosed load-break switch | 350 | 250 | 170 | **3 024.00** |
| **ESW3012M** | 125A | 63 kW | 3 | enclosed load-break switch | 350 | 250 | 170 | **4 000.50** |
| **ESW3016M** | 160A | 80 kW | 3 | enclosed load-break switch | 350 | 250 | 170 | **5 785.50** |
| **ESW3025M** | 250A | 132 kW | 3 | enclosed load-break switch | 550 | 400 | 220 | **7 633.50** |
| **ESW3040M** | 400A | 220 kW | 3 | enclosed load-break switch | 550 | 400 | 220 | **10 815.00** |
| **ESW3063M** | 630A | 280 kW | 3 | enclosed load-break switch | 550 | 400 | 220 | **11 655.00** |
| **ESW3080M** | 800A | 450 kW | 3 | enclosed load-break switch | 950 | 700 | 270 | **21 630.00** |
| **ESW3100M** | 1000A | 560 kW | 3 | enclosed load-break switch | 950 | 700 | 270 | **29 715.00** |
| **ESW3125M** | 1250A | 710 kW | 3 | enclosed load-break switch | 950 | 700 | 270 | **32 340.00** |

*Larger sizes available on request*

**4-pole switches -** 4th pole can be attached to above 40/63/125A switches *(see below)*

| | | | | | |
|---|---|---|---|---|---|
| **2200 1004** | 40A | 1-pole | attachable 4th pole module | M1 | 40A | **197.40** |
| **2200 1008** | 80A | 1-pole | attachable 4th pole module | M2 | 63A | **342.30** |
| **2200 1011** | 125A | 1-pole | attachable 4th pole module | M3 | 125A | **342.30** |

**Safety enclosures** Steel enclosures 50 - 630A **IP65**

Safety enclosed switches provide emergency stop and safety breaking for any low voltage electric circuit. They break "ON" and "OFF" load and provide safety isolation, for mechanical maintenance and safety isolation in the vicinity of any low-voltage final circuit.

**General features:**

- Made of Zinc galvanised sheet metal enclosure *(2 mm thick)* with chrome-plated Zamak hinges
- Bottom mounted gland plate and 2 internal + 1 external earthing connection
- Metallic side-mounted operating handle *(red colour)* padlockable in "OFF" position *(3 padlocks)*
- Equipped with a double locking system *(door can also be padlocked closed in the "OFF" position)*
- Visible breaking facility provided through a triplex window *(made of 2 layer 3mm thick safety glass)*
- Mechanical flag indicator *(visible through triplex window)* for indication of switch position status
- 2 sets of terminated auxiliary contacts NO + NC mounted on the double locking system internally
- Supplied with 2 hooded pushbuttons on right side of enclosure: *(green 1NO / red 2NC contacts)*
- Compliance with standards: IEC 603947-3

**Advantages:**

- Operator safety
- Quick and easy implementation
- Operating continuity
- Inductive load breaking (AC23)

**The solution for:**

- Iron, steel and mining industry
- Cement plants
- Paper / Saw mills
- Hydraulic power packs

| type | motor rating 400 VAC | 525 VAC | current rating | No. poles | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **Safety enclosures** | | | | | Colour: RAL 9001 and RAL 7032 | | | | |
| **32LC 3105** | 15 kW | 9 kW | 50A | 3 | K1 safety encl. switch | 300 | 200 | 150 | **30 450.00** |
| **32LC 3108** | 25 kW | 15 kW | 80A | 3 | K1 safety encl. switch | 300 | 200 | 150 | **31 290.00** |
| **32LC 3120** | 110 kW | 63 kW | 200A | 3 | K1 safety encl. switch | 400 | 300 | 200 | **68 250.00** |
| **32LC 3140** | 160 kW | 157 kW | 400A | 3 | K1 safety encl. switch | 700 | 400 | 250 | **83 160.00** |
| **32LC 3163** | 270 kW | 250 kW | 630A | 3 | K1 safety encl. switch | 900 | 500 | 300 | **137 550.00** |
| **32LC 3608** | 15 kW | 25 kW | 80A | 3 | K2 safety encl. switch | 300 | 400 | 200 | **35 805.00** |



Above ZAR prices do not include VAT. E&OE


2230 3004EM


4430 4012


41AC 3063


1443 3113


1132 1111

## SIRCO series - Changeover switches

SIRCO manual changeover switches provide switching, source inversion and changeover under load for two power circuits with safety isolation double breaking per pole.

- Severe load duty categories (AC-23 AND AC-33)
- Conformity to Standards: IEC/EN 60947-3, IEC 60947-6-1, IS13947-3, UL, KEMA, RINA
- External front operating handle and shaft *(to be ordered separately)*

| type | AC-23 A 415V (A) | no. of poles | frame size | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **SIRCO M - Changeover switches** | | | | **16A - 125A** | | | | |
| • Modular DIN-rail mounting *(fits into standard distribution board with 45 mm cut-out)* | | | | | | | | |
| • Supplied with internal direct mount handle for external mount handle, *(see accessories below)* | | | | | | | | |
| **2230 3001EM** | 16A | 3-pole | M1 | modular changeover switch | 68 | 98 | 89 | **1 459.50** |
| **2230 3002EM** | 25A | 3-pole | M1 | modular changeover switch | 68 | 98 | 89 | **1 575.00** |
| **2230 3004EM** | 40A | 3-pole | M1 | modular changeover switch | 68 | 98 | 89 | **1 711.50** |
| **2230 3006EM** | 63A | 3-pole | M1 | modular changeover switch | 76 | 105 | 89 | **2 079.00** |
| **2230 3008EM** | 80A | 3-pole | M2 | modular changeover switch | 76 | 105 | 89 | **2 992.50** |
| **2230 3010EM** | 100A | 3-pole | M3 | modular changeover switch | 125 | 159 | 100 | **3 958.50** |
| **2230 3011EM** | 125A | 3-pole | M3 | modular changeover switch | 125 | 159 | 100 | **4 525.50** |
| *4th pole can be added to above switches (see page **B-32**)* | | | | | | | | |
| **Accessories for changeover switches** | | | | | | | | |
| **1473 1113** | S00 | I-O-II | | external for ch/over switches | M1 - 2 | 16 - 80A | | **280.35** |
| **1473 0113** | S00 | I-O-II | | external for ch/over switches | M3 | 100 - 125A | | **370.65** |
| **1407 0532** | shaft | 320 mm | □ 5 | external shaft for switch | M1 - 2 | 16 - 80A | | **131.25** |
| **1409 0632** | shaft | 320 mm | □ 6 | external shaft for switch | M3 | 100 - 125A | | **168.00** |
| **2299 3005** | bridge | 3-pole | | bridging kit for ch/over switches | M1 | 16 - 40A | | **958.65** |
| **2299 4005** | bridge | 4-pole | | bridging kit for ch/over switches | M1 | 16 - 40A | | **1 134.00** |
| **2299 3009** | bridge | 3-pole | | bridging kit for ch/over switches | M2 | 63 - 80A | | **1 606.50** |
| **2299 4009** | bridge | 4-pole | | bridging kit for ch/over switches | M2 | 63 - 80A | | **1 932.00** |
| **SIRCO VM1 - Changeover switches** | | | | **100A - 125A** | | | | |
| • DIN-rail, chassis or modular panel mounting | | | | | | | | |
| • Double visible breaking | | | | | | | | |
| **4430 4010** | 100A | 4-pole | | modular changeover switch | 95 | 215 | 97 | **5 386.50** |
| **4430 4012** | 125A | 4-pole | | modular changeover switch | 95 | 215 | 97 | **6 510.00** |
| **4499 4006** | bridge | 4 pole | | insulated 4P bridging bar set | for VM1 switches | | | **2 436.00** |
| **4439 5012** | handle | I-O-II | | direct switch mount handle | for VM1 switches | | | **446.25** |
| **1413 2113** | handle | I-O-II | | external door interlock handle | for VM1 switches | | | **738.15** |
| **1402 0832** | shaft | 320 mm | | extension shaft | for VM1 switches | | | **575.40** |
| **SIRCOVER - Manual changeover switches** | | | | **125A - 3200A** | | | | |
| • High thermal and dynamic withstand, high electrical and mechanical endurance | | | | | | | | |
| • Severe utilization categories (AC-22 and AC-23) | | | | | | | | |
| • Handles and shafts *(to be ordered separately-see below)* | | | | | | | | |
| **41AC 3016** | 160A | 3-pole | B3 | manual changeover switch | 135 | 221 | 173 | **9 544.50** |
| **41AC 3020** | 200A | 3-pole | B3 | manual changeover switch | 135 | 221 | 173 | **11 130.00** |
| **41AC 3025** | 250A | 3-pole | B4 | manual changeover switch | 160 | 262 | 173 | **13 125.00** |
| **41AC 3040** | 400A | 3-pole | B4 | manual changeover switch | 170 | 262 | 173 | **21 000.00** |
| **41AC 3063** | 630A | 3-pole | B5 | manual changeover switch | 260 | 319 | 225 | **27 615.00** |
| **41AC 3080** | 800A | 3-pole | B6 | manual changeover switch | 321 | 386 | 298 | **39 270.00** |
| **41AC 3100** | 1000A | 3-pole | B6 | manual changeover switch | 321 | 386 | 298 | **45 675.00** |
| **41AC 3120** | 1250A | 3-pole | B6 | manual changeover switch | 330 | 386 | 298 | **49 875.00** |
| **41AC 3160** | 1600A | 3-pole | B7 | manual changeover switch | 228 | 478 | 298 | **92 190.00** |
| **41AC 4016** | 160A | 4-pole | B3 | manual changeover switch | 135 | 251 | 173 | **12 915.00** |
| **41AC 4025** | 250A | 4-pole | B4 | manual changeover switch | 160 | 312 | 173 | **18 480.00** |
| **41AC 4040** | 400A | 4-pole | B4 | manual changeover switch | 170 | 312 | 173 | **32 445.00** |
| **41AC 4063** | 630A | 4-pole | B5 | manual changeover switch | 260 | 379 | 225 | **36 015.00** |
| **41AC 4080** | 800A | 4-pole | B6 | manual changeover switch | 320 | 466 | 298 | **57 435.00** |
| **41AC 4120** | 1250A | 4-pole | B6 | manual changeover switch | 330 | 466 | 298 | **70 455.00** |
| **41AC 4160** | 1600A | 4-pole | B7 | manual changeover switch | 288 | 598 | 298 | **131 250.00** |
| *Larger sizes up to 3200A available on request* | | | | | | | | |
| **Operating handles and shafts for above changeover switches** | | | | | | | | |
| **1423 2113** | S2 | black | | I-O-II ext. operating handle | B3-5 | 160 - 630A | | **1 046.85** |
| **1443 3113** | S4 | black | | I-O-II ext. operating handle | B6-7 | 800 - 1600A | | **2 667.00** |
| **1400 1032** | S2 | 320 mm | | □ 10 ext. shaft for switch | B3-5 | 160 - 630A | | **255.15** |
| **1401 1532** | S4 | 320 mm | | □ 15 ext. shaft for switch | B6-7 | 800 - 1600A | | **534.45** |
| **1122 1111** | J2 | black | | direct switch mounting handle | B3-5 | 160 - 630A | | **485.10** |
| **1132 1111** | J3 | black | | direct switch mounting handle | B6-5 | 800 - 1600A | | **1 564.50** |



41AC 7063



1433 3113



2799 3018



4109...



2694 4051

## SIRCOVER series - Manual bypass switches

SIRCOVER Bypass are a combination of three interlocked switches enabling the use with 3+6 or 4+8 poles from 160A to 1600A.

**General features:**

- Severe load duty categories (AC-23 AND AC-33)
- Conformity to Standards: IEC/EN 60947-3, IEC 60947-6-1, IS13947-3, UL, KEMA, RINA
- External IP65 front operating handle and shaft *(to be ordered separately)*

| type | AC-23 A 415V (A) | No. poles | frame size | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **SIRCOVER series - Manual bypass switches** | | | | | **160-1600A** | | | |
| **3-pole manual bypass** | | | | | | | | |
| **41AC 7016** | 160A | 3-pole | B3 | man. operated bypass switch | 15 | 221 | 268 | **18 585.00** |
| **41AC 7020** | 200A | 3-pole | B3 | man. operated bypass switch | 135 | 221 | 268 | **23 730.00** |
| **41AC 7025** | 250A | 3-pole | B4 | man. operated bypass switch | 160 | 262 | 268 | **28 035.00** |
| **41AC 7040** | 400A | 3-pole | B4 | man. operated bypass switch | 170 | 262 | 268 | **39 375.00** |
| **41AC 7063** | 630A | 3-pole | B5 | man. operated bypass switch | 260 | 319 | 387 | **51 555.00** |
| **41AC 7080** | 800A | 3-pole | B6 | man. operated bypass switch | 320 | 386 | 508 | **71 400.00** |
| **41AC 7120** | 1250A | 3-pole | B6 | man. operated bypass switch | 320 | 386 | 508 | **120 750.00** |
| **41AC 7160** | 1600A | 3-pole | B7 | man. operated bypass switch | 288 | 478 | 508 | **159 600.00** |
| **4 pole manual bypass switches** | | | | | | | | |
| **41AC 9016** | 160A | 4-pole | B3 | man. operated bypass switch | 135 | 251 | 268 | **21 735.00** |
| **41AC 9025** | 250A | 4-pole | B4 | man. operated bypass switch | 160 | 312 | 268 | **29 610.00** |
| **41AC 9040** | 400A | 4-pole | B4 | man. operated bypass switch | 170 | 312 | 268 | **42 210.00** |
| **41AC 9063** | 630A | 4-pole | B5 | man. operated bypass switch | 260 | 379 | 387 | **63 735.00** |
| **41AC 9080** | 800A | 4-pole | B6 | man. operated bypass switch | 320 | 466 | 508 | **95 235.00** |
| **41AC 9120** | 1250A | 4-pole | B6 | man. operated bypass switch | 320 | 466 | 508 | **155 400.00** |
| **41AC 9160** | 1600A | 4-pole | B7 | man. operated bypass switch | 288 | 598 | 508 | **172 200.00** |
| **Handles and shafts for bypass switches -** *(door interlocking padlockable in "O" position)* | | | | | | | | |
| **1423 2113** | S2 | black | I-O-II | ext. operating handle | B3 | 160 - 200A | | **1 046.85** |
| **1433 3113** | S3 | black | I-O-II | ext. operating handle | B4-5 | 250 - 630A | | **2 110.50** |
| **4199 7146** | V2 | black | I-O-II | ext. operating handle | B6-7 | 800 - 1600A | | **7 633.50** |
| **1400 1032** | S2 | 320 mm | □ 10 | extension shaft for switch | B3 | 160 - 200A | | **255.15** |
| **1401 1532** | S3 | 320 mm | □ 15 | extension shaft for switch | B4-5 | 250 - 630A | | **534.45** |
| **2799 3018** | V2 | 320 mm | □ 30 | extension shaft for switch | B6-7 | 800 - 1600A | | **1 375.50** |
| **1429 0000** | guide | *(permits engaging of misaligned shaft with handle)* | | | | S2/S3 | | **162.75** |
| **1122 1111** | J2 | black | | direct switch mounting handle | B3 | 160 - 200A | | **485.10** |
| **1132 1111** | J3 | black | | direct switch mounting handle | B4-5 | 250 - 630A | | **1 564.50** |
| **1142 1111** | J4 | black | | direct switch mounting handle | B6-7 | 800 - 1600A | | **1 564.50** |

## Accessories *for all changeover and bypass switches*

| type | poles | description | frame size | (A) | price |
|---|---|---|---|---|---|
| **Auxiliary contacts for switches** | | | | | |
| **4109 0021** | 1 C/Over | aux | auxiliary contact for switches | *(all sizes)* | **511.35** |
| **Bridging bar sets for changeover and bypass switches** | | | | | |
| • For creating a common connection between source I & II, on top or bottom side of the SIRCOVER | | | | | |
| • For SIRCOVER bypass, two sets of bridging bars are required | | | | | |
| **4109 0019** | bridge | 1-pole | bridging bar for ch/over switches | B3 100/200A | **358.05** |
| **4109 0025** | bridge | 1-pole | bridging bar for ch/over switches | B4 250A | **411.60** |
| **4109 0039** | bridge | 1-pole | bridging bar for ch/over switches | B4 400A | **514.50** |
| **4109 0063** | bridge | 1-pole | bridging bar for ch/over switches | B5 630A | **1 016.40** |
| **4109 0080** | bridge | 1-pole | bridging bar for ch/over switches | B6 800/1000A | **1 491.00** |
| **4109 0120** | bridge | 1-pole | bridging bar for ch/over switches | B6 1250A | **2 415.00** |
| **4109 0160** | bridge | 1-pole | bridging bar for ch/over switches | B7 1600A | **3 349.50** |
| *For 3-pole device order 3 bridging bars, for a 4-pole device order 4 bridging bars* | | | | | |
| *For optimal performance, it is recommended to use original bridging bars from Socomec* | | | | | |
| **Terminal shrouds** *for changeover and bypass switches* | | | | | |
| **2694 3014** | shroud | 3-pole | t/parent terminal protection shroud | B3 160/200A | **617.40** |
| **2694 3021** | shroud | 3-pole | t/parent terminal protection shroud | B4 250/400A | **697.20** |
| **2694 3051** | shroud | 3-pole | t/parent terminal protection shroud | B5 630A | **1 040.55** |
| **2694 4014** | shroud | 4-pole | t/parent terminal protection shroud | B3 160/200A | **752.85** |
| **2694 4021** | shroud | 4-pole | t/parent terminal protection shroud | B4 250/400A | **948.15** |
| **2694 4051** | shroud | 4-pole | t/parent terminal protection shroud | B5 630A | **1 396.50** |
| **1509 3080** | screen | 3-pole | t/parent terminal protection screen | B6 800/1250A | **2 068.50** |
| **1509 4080** | screen | 4-pole | t/parent terminal protection screen | B6 800/1250A | **2 383.50** |
| **1509 3160** | screen | 3-pole | t/parent terminal protection screen | B7 1600A | **2 541.00** |
| **1509 4160** | screen | 4-pole | t/parent terminal protection screen | B7 1600A | **2 919.00** |



Above ZAR prices do not include VAT. E&OE


EC03009P


ECO...

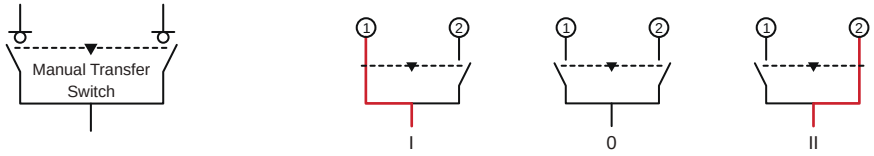
## Enclosed manual changeover switches *(IP65)*

| type | AC-31 B 415V (A) | enclosure | no. poles | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **SIRCO-M - Changeover switches** | | | | | | | | |
| **Polycarbonate housing** *(IP65)* | | | | | | | | |
| • Supplied with internal direct mount handle | | | | | | | | |
| • Distribution board style enclosure with transparent door | | | | | | | | |
| **ECO3002P** | 25A | polycarb | 3-pole | enclosed ch/over switch | 210 | 237 | 114 | **2 320.50** |
| **ECO3004P** | 40A | polycarb | 3-pole | enclosed ch/over switch | 210 | 237 | 114 | **2 457.00** |
| **ECO3006P** | 63A | polycarb | 3-pole | enclosed ch/over switch | 210 | 237 | 114 | **2 824.50** |
| **ECO3009P** | 100A | polycarb | 3-pole | enclosed ch/over switch | 302 | 310 | 151 | **5 040.00** |
| **ECO3012P** | 125A | polycarb | 3-pole | enclosed ch/over switch | 302 | 310 | 151 | **5 565.00** |
| **Sheet metal enclosed** *(IP65)* | | | | | | | | |
| • With external door interlocking padlockable handle | | | | | | | | |
| **ECO3004M** | 40A | metal | 3-pole | enclosed ch/over switch | 350 | 250 | 170 | **4 546.50** |
| **ECO3006M** | 63A | metal | 3-pole | enclosed ch/over switch | 350 | 250 | 170 | **4 903.50** |
| **ECO3009M** | 100A | metal | 3-pole | enclosed ch/over switch | 350 | 250 | 170 | **6 478.50** |
| **ECO3012M** | 125A | metal | 3-pole | enclosed ch/over switch | 350 | 250 | 170 | **7 990.50** |
| *4 pole switches can be made by adding clip-on 4th poles (see page **B-32**)* | | | | | | | | |
| **SIRCOVER - Changeover switches** | | | | | | | | |
| • With external door interlocking padlockable handle | | | | | | | | |
| • Supplied complete with bridge bars *(output side)* | | | | | | | | |
| • Sheet metal enclosed | | | | | | | | |
| **ECO3016M** | 160A | metal | 3-pole | enclosed ch/over switch | 550 | 400 | 220 | **14 910.00** |
| **ECO3025M** | 250A | metal | 3-pole | enclosed ch/over switch | 550 | 400 | 220 | **18 585.00** |
| **ECO3040M** | 400A | metal | 3-pole | enclosed ch/over switch | 850 | 600 | 270 | **29 400.00** |
| **ECO3063M** | 630A | metal | 3-pole | enclosed ch/over switch | 850 | 600 | 270 | **38 010.00** |
| **ECO3080M** | 800A | metal | 3-pole | enclosed ch/over switch | 900 | 600 | 450 | **59 955.00** |
| **ECO3125M** | 1250A | metal | 3-pole | enclosed ch/over switch | 900 | 600 | 450 | **73 500.00** |
| **ECO3160M** | 1600A | metal | 3-pole | enclosed ch/over switch | 900 | 600 | 450 | **118 650.00** |
| **ECO4016M** | 160A | metal | 4-pole | enclosed ch/over switch | 550 | 400 | 220 | **18 585.00** |
| **ECO4025M** | 250A | metal | 4-pole | enclosed ch/over switch | 550 | 400 | 220 | **25 200.00** |
| **ECO4040M** | 400A | metal | 4-pole | enclosed ch/over switch | 850 | 600 | 270 | **41 265.00** |
| **ECO4063M** | 630A | metal | 4-pole | enclosed ch/over switch | 850 | 600 | 270 | **47 460.00** |
| **ECO4080M** | 800A | metal | 4-pole | enclosed ch/over switch | 900 | 600 | 450 | **79 590.00** |
| **ECO4125M** | 1250A | metal | 4-pole | enclosed ch/over switch | 900 | 600 | 450 | **96 495.00** |
| **ECO4160M** | 1600A | metal | 4-pole | enclosed ch/over switch | 900 | 600 | 450 | **172 200.00** |

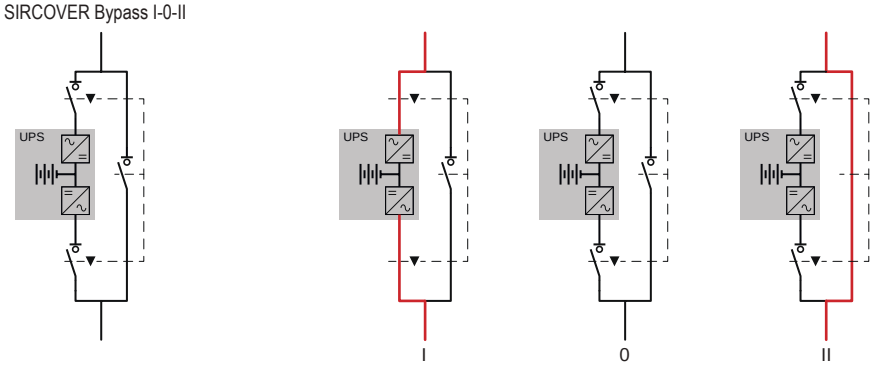
For enclosed automatic changeover panels, see page **B-43**

## Operating principle

SIRCOVER Changeover I-0-II




SIRCOVER Bypass I-0-II





9505 4008



9513 4008



9509 4013



9594 4012

## ATyS S - Motorised changeover switches *(4-pole)*

ATyS S is 4-pole remotely operated transfer switch with positive break indication, enabling the on-load transfer of two three-phase supplies via remote volt-free contacts, an external automatic controller, pulse logic, or a switch.

For use in low voltage power supply systems where a brief interruption of the load supply is acceptable during transfer.

Fully integrated cost-effective solution to switch between main and an alternative power supply for loads of up to 125A: <90kVA /3 phase 415 VAC.

**General features:**

- Two switches mounted back to back, motorised *(easily replaceable motors)*
- Fail-safe mechanical interlock
- Padlockable in the “OFF” position
- Manual override facility *(handle supplied)*
- Wide-band AC control voltage ±30%
- Can be configured for “impulse” or “contactor” logic
- Energy-efficient power consumption is minimal and only required during transfer operation
- Fully independent position auxiliary contacts one for each position ( I / O / II )

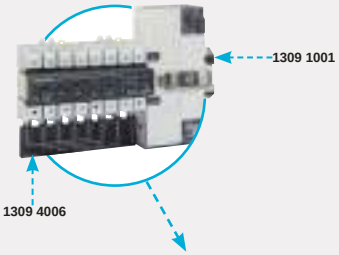
AC 32B IEC 60947-6-1, GB 14048-11 *(transfer switch standards)*
AC 22A IEC60947-3 *(load break switch standard)*

| type | AC-31 B 415V (A) | poles | supply voltage | description | price |
|---|---|---|---|---|---|
| **ATyS S - Motorised changeover switches** | | | *(H) 144 x (W) 198 x (D) 181 mm* | | |
| **230 VAC power supply** | | | | | |
| **9503 4004** | 40A | 4-pole | 230 VAC | motorised changeover switch | **8 421.00** |
| **9503 4006** | 63A | 4-pole | 230 VAC | motorised changeover switch | **8 872.50** |
| **9503 4008** | 80A | 4-pole | 230 VAC | motorised changeover switch | **11 340.00** |
| **9503 4010** | 100A | 4-pole | 230 VAC | motorised changeover switch | **12 705.00** |
| **9503 4012** | 125A | 4-pole | 230 VAC | motorised changeover switch | **13 755.00** |
| **12 VDC power supply** | | | | | |
| **9505 4006** | 63A | 4-pole | 12 VDC | motorised changeover switch | **5 040.00** |
| **9505 4008** | 80A | 4-pole | 12 VDC | motorised changeover switch | **9 786.00** |
| **9505 4010** | 100A | 4-pole | 12 VDC | motorised changeover switch | **12 915.00** |
| **9505 4012** | 125A | 4-pole | 12 VDC | motorised changeover switch | **13 230.00** |
| **24/48 VDC power supply** | | | | | |
| **9506 4004** | 40A | 4-pole | 24/48 VDC | motorised changeover switch | **7 266.00** |
| **9506 4006** | 63A | 4-pole | 24/48 VDC | motorised changeover switch | **7 980.00** |
| **9506 4008** | 80A | 4-pole | 24/48 VDC | motorised changeover switch | **11 235.00** |
| **9506 4010** | 100A | 4-pole | 24/48 VDC | motorised changeover switch | **11 235.00** |
| **9506 4012** | 125A | 4-pole | 24/48 VDC | motorised changeover switch | **12 390.00** |
| **ATyS d S - Dual power supply** *(2 x 230 VAC)* | | | | | |
| Incorporates supply redundancy without the need for additional wiring by integrating a double supply *(2 independent supplies)* directly within the product. | | | | | |
| **9513 4004** | 40A | 4-pole | 2 x 230 VAC | motorised changeover switch | **9 229.50** |
| **9513 4006** | 63A | 4-pole | 2 x 230 VAC | motorised changeover switch | **11 655.00** |
| **9513 4008** | 80A | 4-pole | 2 x 230 VAC | motorised changeover switch | **12 285.00** |
| **9513 4010** | 100A | 4-pole | 2 x 230 VAC | motorised changeover switch | **12 915.00** |
| **9513 4012** | 125A | 4-pole | 2 x 230 VAC | motorised changeover switch | **16 485.00** |
| **Accessories for ATyS S switches** | | | | | |
| **Bridging bars** | | | | | |
| **9509 4013** | bridge | 4-pole | | power terminal bridging bar *(top or bottom)* | **457.80** |
| **Voltage tap** | | | | | |
| **9599 4001** | terminal | | | control voltage tapping kit *(from power terminals)* | **465.15** |
| **Terminal shroud** | | | | | |
| **9594 4012** | shroud | 4-pole | | supply side terminal protection shrouds | **408.45** |
| **9594 9012** | shroud | 4-pole | | load side terminal protection shrouds | **408.45** |
| **Spare motor units** | | | | | |
| **9505 5012** | motor | | 12 VDC | spare motor for above switches | **9 240.00** |
| **9506 5012** | motor | | 24/48 VDC | spare motor for above switches | **8 830.50** |
| **9513 5012** | motor | | 2 x 230 VAC | spare motor for above switches | **12 285.00** |



Above ZAR prices do not include VAT. E&OE


9323 4006





9354 4012


9364 4012


1309 4006


1309 1001

## ATyS M - Motorised changeover switches

ATyS M modular motorised changeover switches with positive break indication enabling on-load changeover switching of two supply sources in automatic or manual mode.

**General features:**

- Modular format to easily mount into standard distribution boards
- Provide rapid switching (< 90ms) excellent dynamic withstand and long life
- Auto or manual operation *(with incorporated Allen key)* padlockable in “O” position
- Supply only active during transfer, unaffected by network voltage fluctuations
- Fully compliant with IEC 60947-6-1 *(standard governing transfer switches)*

| type | AC-31 B 415V (A) | poles | supply voltage | description | price |
|---|---|---|---|---|---|
| **ATyS d M - Motorised changeover switches** | | | | *(H) 245 x (W) 2P 235/4P 340 x (D) 74 mm* | |
| **9323 2006** | 63A | 2-pole | 230 VAC | motorised changeover switch | **15 330.00** |
| **9323 2008** | 80A | 2-pole | 230 VAC | motorised changeover switch | **16 485.00** |
| **9323 4006** | 63A | 4-pole | 230 VAC | motorised changeover switch | **17 955.00** |
| **9323 4008** | 80A | 4-pole | 230 VAC | motorised changeover switch | **18 795.00** |
| **9323 4010** | 100A | 4-pole | 230 VAC | motorised changeover switch | **20 580.00** |
| **9323 4012** | 125A | 4-pole | 230 VAC | motorised changeover switch | **21 630.00** |
| **9323 4016** | 160A | 4-pole | 230 VAC | motorised changeover switch | **25 410.00** |
| **ATyS g M - Automatic changeover switches** | | | | *(H) 245 x (W) 2P 235/4P 340 x (D) 74 mm* | |

The ATyS g M switch monitors the supply from both mains and generator.
On mains failure, the switch provides an output to start generator and once the generator voltage reaches the correct level, switches over to the generator supply until mains is restored, causing the switch to change back to the mains supply and stop the generator.

| | |
|---|---|
| Potentiometers for: | Nominal voltage configuration<br>Voltage and frequency threshold configuration<br>Operating cycle configuration |
| DIP- switches for: | 50 or 60Hz, single or 3-phase<br>Delay in “O” position during I-O transfer cycles |
| LED indication of: | Supply source availability, automatic mode, fault |
| External command inputs: | Manual change of supply from emergency to main source<br>Remote test on-load *(or priority change)*<br>1NO output relay for generator start/stop command |

| | | | | | |
|---|---|---|---|---|---|
| **9353 2006** | 63A | 2-pole | 230 VAC | automatic changeover switch | **23 835.00** |
| **9353 2008** | 80A | 2-pole | 230 VAC | automatic changeover switch | **24 255.00** |
| **9354 4006** | 63A | 4-pole | 230 VAC | automatic changeover switch | **28 665.00** |
| **9354 4008** | 80A | 4-pole | 230 VAC | automatic changeover switch | **28 980.00** |
| **9354 4010** | 100A | 4-pole | 230 VAC | automatic changeover switch | **29 715.00** |
| **9354 4012** | 125A | 4-pole | 230 VAC | automatic changeover switch | **31 920.00** |
| **9354 4016** | 160A | 4-pole | 230 VAC | automatic changeover switch | **36 120.00** |

### ATyS p M - Automatic changeover switch *(digital display and settings)*

As the ATyS g M above, but configurable for network/genset or network/network *(with or without priority)*. Monitoring parameters configured via pushbuttons and a digital display.

- LED indicator: power on, supply status, position of switch, auto/manual/test mode, fault
- 3 configurable inputs and 3 x outputs
- 1 configurable bi-stable output relay for generator start/stop command

| | | | | | |
|---|---|---|---|---|---|
| **9364 4006** | 63A | 4-pole | 230 VAC | automatic changeover switch | **36 960.00** |
| **9364 4008** | 80A | 4-pole | 230 VAC | automatic changeover switch | **41 895.00** |
| **9364 4010** | 100A | 4-pole | 230 VAC | automatic changeover switch | **44 835.00** |
| **9364 4012** | 125A | 4-pole | 230 VAC | automatic changeover switch | **47 670.00** |
| **9364 4016** | 160A | 4-pole | 230 VAC | automatic changeover switch | **49 035.00** |

*Above range with RS-485 communication available on request*

### Accessories for all ATyS M switches

**Bridging bars (plug-in)** *(for incoming or outgoing side of switch)*

- *Provides a common connection between switches I & II on the incoming or outgoing side of the ATyS M without reducing terminal capacity*

| | | | | | |
|---|---|---|---|---|---|
| **1309 2006** | 63 - 125A | 2-pole | plug-in | fully insulated plug-in bridging bar | **1 543.50** |
| **1309 4006** | 63 - 125A | 4-pole | plug-in | fully insulated plug-in bridging bar | **2 551.50** |
| **1309 4016** | 160A | 4-pole | plug-in | fully insulated plug-in bridging bar | **3 853.50** |
| **1399 4006** | tap | 1-pole | | tap-off terminal for power supply | **1 092.00** |
| **2294 4016** | shroud | 2-pole | | terminal protection shroud | **283.50** |
| **1309 1001** | auxiliary | contact | 1NO+1NC | for each position (I-O-II) | **2 320.50** |



9523 3120



9523 4016



9553 4016



## ATyS - Motorised and automatic changeover switches

Three-phase motorised changeover switches with positive break indication, enabling the on-load transfer of two different three-phase supplies.

**General features:**

- Wide-band AC control voltage ± 20%
- Fail-safe mechanical interlock
- Padlockable in the “OFF” position
- Fully independent position auxiliary contacts one for each position ( I / O / II )

### ATyS r - Motorised changeover switches — supply: 230 VAC

Three-phase remotely operated motorised transfer switches, 3 or 4-poles, with positive break indication, enable the on-load transfer of two three-phase power supplies via remote volt-free contacts, from an external automatic controller using pulse logic, or a switch.

**3-pole switches**

| type | AC-31 B 415V (A) | poles | frame size | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **9523 3016** | 160A | 3-pole | B3 | motorised ch/over switch | 135 | 287 | 244 | **19 110.00** |
| **9523 3025** | 250A | 3-pole | B4 | motorised ch/over switch | 160 | 328 | 244 | **21 735.00** |
| **9523 3040** | 400A | 3-pole | B4 | motorised ch/over switch | 170 | 328 | 244 | **34 755.00** |
| **9523 3063** | 630A | 3-pole | B5 | motorised ch/over switch | 260 | 377 | 321 | **37 905.00** |
| **9523 3080** | 800A | 3-pole | B6 | motorised ch/over switch | 370 | 504 | 440 | **58 800.00** |
| **9523 3100** | 1000A | 3-pole | B6 | motorised ch/over switch | 370 | 504 | 440 | **61 320.00** |
| **9523 3120** | 1250A | 3-pole | B6 | motorised ch/over switch | 370 | 504 | 440 | **74 445.00** |
| **9523 3160** | 1600A | 3-pole | B7 | motorised ch/over switch | 380 | 596 | 440 | **104 160.00** |
| **9523 3200** | 2000A | 3-pole | B8 | motorised ch/over switch | 380 | 596 | 569 | **158 550.00** |
| **9523 3250** | 2500A | 3-pole | B8 | motorised ch/over switch | 380 | 596 | 569 | **184 800.00** |
| **9523 3320** | 3200A | 3-pole | B8 | motorised ch/over switch | 380 | 596 | 569 | **254 100.00** |

**4-pole switches**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **9523 4016** | 160A | 4-pole | B3 | motorised ch/over switch | 135 | 317 | 244 | **20 580.00** |
| **9523 4025** | 250A | 4-pole | B4 | motorised ch/over switch | 160 | 395 | 244 | **24 360.00** |
| **9523 4040** | 400A | 4-pole | B4 | motorised ch/over switch | 170 | 395 | 244 | **41 475.00** |
| **9523 4063** | 630A | 4-pole | B5 | motorised ch/over switch | 260 | 454 | 321 | **50 610.00** |
| **9523 4080** | 800A | 4-pole | B6 | motorised ch/over switch | 321 | 584 | 440 | **72 660.00** |
| **9523 4100** | 1000A | 4-pole | B6 | motorised ch/over switch | 321 | 584 | 440 | **76 545.00** |
| **9523 4120** | 1250A | 4-pole | B6 | motorised ch/over switch | 330 | 584 | 440 | **92 820.00** |
| **9523 4160** | 1600A | 4-pole | B7 | motorised ch/over switch | 288 | 716 | 440 | **153 300.00** |
| **9523 4200** | 2000A | 4-pole | B8 | motorised ch/over switch | 380 | 716 | 569 | **191 100.00** |
| **9523 4250** | 2500A | 4-pole | B8 | motorised ch/over switch | 380 | 716 | 569 | **224 700.00** |
| **9523 4320** | 3200A | 4-pole | B8 | motorised ch/over switch | 380 | 716 | 569 | **329 700.00** |

### ATyS g - Automatic changeover switches — supply: 230 VAC

Automatic changeover switches for transformer/generator applications. An integrated controller provides all necessary functions, including monitoring the voltage and frequency of both sources providing on-load changeover switching between two power supply sources.

**General features:**

- Integrated generator on-load and off-load test function
- Integrated dual power supply *(2 independent supplies within the switch)*
- Optional remote monitoring via additional RS485 communication module (**4825 0092**), see ***B-42***

**ATyS g automatic changeover switches**

**3-pole switches**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **9553 3016** | 160A | 3-pole | B3 | automatic ch/over switch | 135 | 287 | 244 | **39 900.00** |
| **9553 3025** | 250A | 3-pole | B4 | automatic ch/over switch | 160 | 328 | 244 | **46 935.00** |
| **9553 3040** | 400A | 3-pole | B4 | automatic ch/over switch | 170 | 328 | 244 | **56 070.00** |
| **9553 3063** | 630A | 3-pole | B5 | automatic ch/over switch | 260 | 377 | 321 | **64 995.00** |
| **9553 3080** | 800A | 3-pole | B6 | automatic ch/over switch | 321 | 504 | 392 | **109 200.00** |
| **9553 3100** | 1000A | 3-pole | B6 | automatic ch/over switch | 321 | 504 | 392 | **116 550.00** |
| **9553 3120** | 1250A | 3-pole | B6 | automatic ch/over switch | 330 | 504 | 392 | **128 100.00** |
| **9553 3160** | 1600A | 3-pole | B7 | automatic ch/over switch | 288 | 596 | 392 | **156 450.00** |

**4-pole switches**

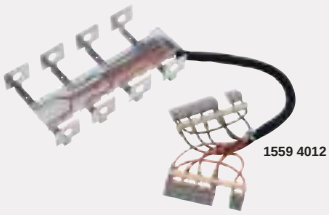
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **9553 4016** | 160A | 4-pole | B3 | automatic ch/over switch | 135 | 317 | 244 | **44 205.00** |
| **9553 4025** | 250A | 4-pole | B4 | automatic ch/over switch | 160 | 395 | 244 | **55 545.00** |
| **9553 4040** | 400A | 4-pole | B4 | automatic ch/over switch | 170 | 395 | 244 | **73 395.00** |
| **9553 4063** | 630A | 4-pole | B5 | automatic ch/over switch | 260 | 454 | 321 | **81 165.00** |
| **9553 4080** | 800A | 4-pole | B6 | automatic ch/over switch | 321 | 584 | 392 | **143 850.00** |
| **9553 4100** | 1000A | 4-pole | B6 | automatic ch/over switch | 321 | 584 | 392 | **156 450.00** |
| **9553 4120** | 1250A | 4-pole | B6 | automatic ch/over switch | 330 | 584 | 392 | **166 950.00** |
| **9553 4160** | 1600A | 4-pole | B7 | automatic ch/over switch | 288 | 716 | 392 | **201 600.00** |

*Larger sizes (up to 3200A) available on request*



Above ZAR prices do not include VAT. E&OE


4109...


1559 4012


9509 5120


2694 4051

## Accessories for ATyS changeover switches

| type | | poles | description | for switch frame | (A) | price |
|---|---|---|---|---|---|---|
| **Bridging bars for switches** | | | | | | |
| • Supplied with all mounting accessories for bridging power terminals on the outgoing side of the switch | | | | | | |
| **4109 0019** | bridge | 1-pole | bridging bar for ch/over switches | B3 | 160A | **358.05** |
| **4109 0025** | bridge | 1-pole | bridging bar for ch/over switches | B4 | 250A | **411.60** |
| **4109 0039** | bridge | 1-pole | bridging bar for ch/over switches | B4 | 400A | **514.50** |
| **4109 0063** | bridge | 1-pole | bridging bar for ch/over switches | B5 | 630A | **1 016.40** |
| **4109 0080** | bridge | 1-pole | bridging bar for ch/over switches | B6 | 800 - 1000A | **1 491.00** |
| **4109 0120** | bridge | 1-pole | bridging bar for ch/over switches | B6 | 1250A | **2 415.00** |
| **4109 0160** | bridge | 1-pole | bridging bar for ch/over switches | B7 | 1600A | **3 349.50** |
| *For 3-pole device order 3 bridging bars, for a 4-pole device order 4 bridging bars* | | | | | | |
| *For optimal performance, it is recommended to use original bridging bars from Socomec* | | | | | | |
| **Voltage sensing and power supply harness** | | | | | | |
| The ATyS g voltage sensing kit is available as an accessory and is designed to tap directly off the power section on Switch I and Switch II terminals without the need to add protection fuses. | | | | | | |
| The sensing kit is designed with optimised cable lengths and utilises silicon conductors held safely in an isolated mechanical support. The kit can be fitted on the top or bottom of the switch. | | | | | | |
| **1559 3012** | harness | 3-pole | voltage sense and p/supply harness | B3 | 160A | **2 520.00** |
| **1559 3025** | harness | 3-pole | voltage sense and p/supply harness | B4 | 250A | **2 950.50** |
| **1559 3040** | harness | 3-pole | voltage sense and p/supply harness | B4 | 400A | **3 339.00** |
| **1559 3063** | harness | 3-pole | voltage sense and p/supply harness | B5 | 630A | **3 570.00** |
| **1559 3080** | harness | 3-pole | voltage sense and p/supply harness | B6 | 800-1000A | **4 315.50** |
| **1559 3120** | harness | 3-pole | voltage sense and p/supply harness | B6 | 1250A | **4 410.00** |
| **1559 3160** | harness | 3-pole | voltage sense and p/supply harness | B7 | 1600A | **4 462.50** |
| **1559 4012** | N-right | 4-pole | voltage sense and p/supply harness | B3 | 160A | **2 635.50** |
| **1559 4025** | N-right | 4-pole | voltage sense and p/supply harness | B4 | 250A | **3 087.00** |
| **1559 4040** | N-right | 4-pole | voltage sense and p/supply harness | B4 | 400A | **3 622.50** |
| **1559 4063** | N-right | 4-pole | voltage sense and p/supply harness | B5 | 630A | **3 822.00** |
| **1559 4080** | N-right | 4-pole | voltage sense and p/supply harness | B6 | 800-1000A | **4 641.00** |
| **1559 4120** | N-right | 4-pole | voltage sense and p/supply harness | B6 | 1250A | **4 672.50** |
| **1559 4160** | N-right | 4-pole | voltage sense and p/supply harness | B6 | 1600A | **4 693.50** |
| **Power supplies** | | | | | | |
| **1599 5112** | | | 24 VDC - 230 VAC power supply to operate switches with DC | | all ATyS r/g/p | **15 435.00** |
| **1599 4001** | | | dual power supply permits remote transfer to any position | | all ATyS r | **3 612.00** |
| **Spare motor units** | | | | | | |
| The motor units of the ATyS r and g are easy to replace in case there is a problem, even when on-load. | | | | | | |
| **9509 5020** | | | spare motor for ATyS switches | B3 | 160A | **17 115.00** |
| **9509 5040** | | | spare motor for ATyS switches | B4 | 250-400A | **19 950.00** |
| **9509 5063** | | | spare motor for ATyS switches | B5 | 630A | **26 355.00** |
| **9509 5120** | | | spare motor for ATyS switches | B6 | 800-1250A | **40 425.00** |
| **9509 5160** | | | spare motor for ATyS switches | B7 | 1600A | **42 945.00** |
| **Auxiliary contacts for switches** | | | | | | |
| • Pre-breaking and signalling of positions I and II | | | | | | |
| **1599 0502** | 1 C/O | aux | auxiliary contact for switches | B3-5 | 160-630A | **2 278.50** |
| **1599 0532** | 1 C/O | aux | auxiliary contact for switches | B6-8 | 800-3200A | **2 562.00** |
| **Terminal shrouds and mounting accessories** | | | | | | |
| **Terminal shrouds** | | | | | | |
| **2694 3014** | shroud | 3-pole | terminal protection shroud | B3 | 160A | **617.40** |
| **2694 3021** | shroud | 3-pole | terminal protection shroud | B4 | 250 - 400A | **697.20** |
| **2694 3051** | shroud | 3-pole | terminal protection shroud | B5 | 630A | **1 040.55** |
| **2694 4014** | shroud | 4-pole | terminal protection shroud | B3 | 160A | **752.85** |
| **2694 4021** | shroud | 4-pole | terminal protection shroud | B4 | 250 - 400A | **948.15** |
| **2694 4051** | shroud | 4-pole | terminal protection shroud | B5 | 630A | **1 396.50** |
| **Door mounting frame** *(to permit access to controller from front panel door)* | | | | | | |
| **1529 0012** | frame | 3/4-pole | door protective frame for ATyS r | B3-5 | 160-630A | **1 002.75** |
| **1529 0080** | frame | 3/4-pole | door protective frame for ATyS r | B6-8 | 800-3200A | **1 144.50** |
| **1539 0012** | frame | 3/4-pole | door protective frame for ATyS g | B3-5 | 160-630A | **1 606.50** |
| **1539 0080** | frame | 3/4-pole | door protective frame for ATyS g | B6-7 | 800-1600A | **1 701.00** |
| **1509 0001** | 10 mm | | mounting spacers *(stackable)* to raise switch | | *(2 per set)* | **523.95** |
| **Communication module** | | | | | | |
| **4825 0092** | | | RS-485 MODBUS communication | | for ATyS g | **1 575.00** |

## Enclosed automatic changeover panels

All the features of the ATyS ranges of switches build into an IP65 enclosure. with all wiring, bridging bars and fuses for ease of installation and time-saving.

### ATyS p M - Enclosed automatic changeover switches 63 - 160A


EAC4006P

**ATyS p M** Automatic Transfer Switching Equipment (ATSE) is designed for use in power systems for the safe transfer of a load supply between a normal and an alternate source.

The changeover is done in open transition and with minimum supply interruption during transfer ensuring full compliance with IEC 60947-6-1 and other international TSE standards.

The ATyS p M is a full load break *(switch type)* derived transfer switching equipment where the main components are proven technology devices, also fulfilling requirements in IEC 60947-3 standards.

**ATyS p M - Transfer switches ensure:**

- Intuitive HMI for emergency / local operation
- Integrated and robust switch disconnection
- Programmable secure motorisation controls interface
- Constant pressure on the contacts non affected by network voltage
- Power control and safety between a normal and an alternate source
- Stable positions (I – 0 – II) non affected by typical vibration and shocks
- ATS configuration through a keypad as well as through EasyConfig programming software

| type | AC-31 B 415V (A) | poles | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **General features:** | | | | | | | |
| • A complete product delivered as a fully assembled and tested solution | | | | | | | |
| • An inherent failsafe mechanical interlock | | | | | | | |
| • Built in padlocking facility *(configurable)* | | | | | | | |
| • Colour: BS/EN06 E53 *(electric orange)* | | | | | | | |
| **EAC4006P** | 63A | 4-pole | enclosed ch/over switch | 550 | 400 | 220 | **46 830.00** |
| **EAC4008P** | 80A | 4-pole | enclosed ch/over switch | 550 | 400 | 220 | **51 975.00** |
| **EAC4010P** | 100A | 4-pole | enclosed ch/over switch | 550 | 400 | 220 | **53 970.00** |
| **EAC4016P** | 160A | 4-pole | enclosed ch/over switch | 550 | 400 | 220 | **60 795.00** |

### ATyS g - Enclosed automatic changeover switches 250 - 1600A


EAC4040G

**ATyS g** Automatic Transfer Switching Equipment (ATSE) is designed for use in power systems for the safe transfer of a load supply between a normal and an alternate source.

The changeover is done in open transition and with minimum supply interruption during transfer ensuring full compliance with IEC 60947-6-1, GB 14048-11 and other international TSE standards as listed.

The ATyS g is a full load break *(switch type)* derived transfer switching equipment where the main components are proven technology devices also fulfilling requirements in IEC 60947-3 standards.

**ATyS g - Motorised source changeover switches:**

- Integrated and robust switch disconnection
- Integrated switch position auxiliary contacts
- Intuitive HMI for emergency / local operation
- Constant pressure on the contacts is not effected by network voltage
- Minimal downtime with the possibility to perform easy maintenance
- Straightforward ATS configuration for easy and fast commissioning
- Power control and safety between a normal and an alternate source
- Stable positions (I – 0 – II) non affected by typical vibration and shocks
- Quick, easy and safe dual “on-load” emergency manual operation *(Manual operation is functional with and without the motorization in place)*

| type | AC-31 B 415V (A) | poles | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **General features:** | | | | | | | |
| • A complete product delivered as a fully assembled and tested solution | | | | | | | |
| • An inherent failsafe mechanical interlock | | | | | | | |
| • Built-in padlocking facility *(configurable)* | | | | | | | |
| • Colour: BS/EN06 E53 *(electric orange)* | | | | | | | |
| **EAC4025G** | 250A | 4-pole | enclosed ch/over switch | 950 | 700 | 330 | **68 565.00** |
| **EAC4040G** | 400A | 4-pole | enclosed ch/over switch | 950 | 700 | 330 | **86 730.00** |
| **EAC4063G** | 630A | 4-pole | enclosed ch/over switch | 1200 | 900 | 600 | **112 350.00** |
| **EAC4080G** | 800A | 4-pole | enclosed ch/over switch | 1200 | 900 | 600 | **176 400.00** |
| **EAC4100G** | 1000A | 4-pole | enclosed ch/over switch | 1200 | 900 | 600 | **189 000.00** |
| **EAC4125G** | 1250A | 4-pole | enclosed ch/over switch | 1200 | 900 | 600 | **203 700.00** |
| **EAC4160G** | 1600A | 4-pole | enclosed ch/over switch | 1200 | 900 | 600 | **241 500.00** |

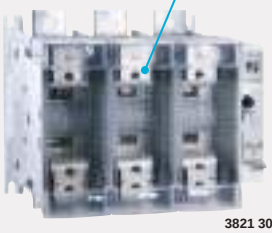


Above ZAR prices do not include VAT. E&OE


3631 3003


3841 3003




3821 3063


1443 3111


1401 0540


3999 0600

## FUSERBLOC - Fuse combination switches

FUSERBLOC are manually operated fuse combination switches. They make and break on load and provide safety isolation and protection against overcurrent in any low-voltage electrical circuit.

**General features:**

- Complete isolation of fuses with double breaking per pole *(top and bottom of fuse)* positive break indication
- "Test" position for testing control circuits without power *(enclosure door can be opened in "test" position)*
- External front operating handle and shaft *(to be ordered separately-see below)*
- IEC/EN 60947-3, IEC/EN 60269-1, IEC/EN 60269-2, VDE 0636-1, VDE 0660-107
- Consult product datasheet for DC utilisation category

| type | AC-22 A 415V (A) | AC-23 A 400V | fuse type | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Fuse combination switches -** *3-pole* | | | | | | | | |
| **NFC cylindrical fuses** | | | | | | | | |
| **3631 3003** | CD32A | 15 kW | 10 x 38 | fuse combination switch | 98 | 96 | 65 | **2 247.00** |
| **3831 3005** | 50A | 25 kW | 14 x 51 | fuse combination switch | 118 | 121 | 100 | **2 824.50** |
| **3831 3011** | 125A | 63 kW | 22 x 58 | fuse combination switch | 162 | 148 | 135 | **4 431.00** |
| **DIN pattern fuses** | | | | | | | | |
| **3831 3006** | 63A | 30 kW | 000 | fuse combination switch | 118 | 136 | 125 | **3 223.50** |
| **3831 3012** | 125A | 63 kW | 00 | fuse combination switch | 162 | 148 | 135 | **4 735.50** |
| **3831 3015** | 160A | 80 kW | 00 | fuse combination switch | 162 | 148 | 135 | **5 302.50** |
| **3831 3024** | 250A | 132 kW | 1 | fuse combination switch | 195 | 234 | 154 | **7 717.50** |
| **3831 3038** | 400A | 220 kW | 2 | fuse combination switch | 240 | 256 | 188 | **10 447.50** |
| **3811 3063** | 630A | 355 kW | 3 | fuse combination switch | 300 | 364 | 265 | **21 210.00** |
| **3811 3080** | 800A | 450 kW | 3 | fuse combination switch | 304 | 364 | 265 | **24 780.00** |
| **3811 3120** | 1250A | 560 kW | 4 | fuse combination switch | 304 | 442 | 289 | **46 830.00** |
| **BS88 pattern fuses** | | | | | | | | |
| **3641 3001** | CD32A | 15 kW | A1 | fuse combination switch | 98 | 96 | 102 | **2 383.50** |
| **3841 3003** | 32A | 15 kW | A1 | fuse combination switch | 118 | 121 | 100 | **2 814.00** |
| **3841 3006** | 63A | 30 kW | A2 - A3 | fuse combination switch | 118 | 136 | 125 | **3 244.50** |
| **3841 3010** | 100A | 51 kW | A4 | fuse combination switch | 162 | 148 | 135 | **3 843.00** |
| **3841 3015** | 160A | 80 kW | A4 | fuse combination switch | 162 | 190 | 145 | **5 607.00** |
| **3841 3021** | 200A | 100 kW | B1-B2 | fuse combination switch | 195 | 234 | 154 | **6 972.00** |
| **3841 3024** | 250A | 132 kW | B1-B2-B3 | fuse combination switch | 195 | 234 | 154 | **7 581.00** |
| **3841 3031** | 315A | 160 kW | B1-B2-B3 | fuse combination switch | 240 | 256 | 188 | **9 912.00** |
| **3841 3038** | 400A | 220 kW | B2-B3-B4 | fuse combination switch | 240 | 256 | 188 | **10 227.00** |
| **3821 3063** | 630A | 355 kW | C1-C2 | fuse combination switch | 300 | 364 | 265 | **21 840.00** |
| **3821 3080** | 800A | 450 kW | C1-C2-C3 | fuse combination switch | 300 | 364 | 265 | **25 410.00** |
| **3821 3120** | 1250A | 560 kW | D1 | fuse combination switch | 300 | 442 | 304 | **45 360.00** |

### Operating handles and shafts for above switches

- External front operated, door interlocking, padlockable *(3 padlocks)* in "OFF" with "TEST" position

| type | handle | colour | | description | for switch | price |
|---|---|---|---|---|---|---|
| **1413 2115** | S1 | black | | pistol grip external operating handle | CD32 - 63A | **446.25** |
| **1423 2115** | S2 | black | | pistol grip external operating handle | 100 - 400A | **554.40** |
| **1433 3111** | S3 | black | | pistol grip external operating handle | 630 - 800A | **1 144.50** |
| **1443 3111** | S4 | black | | "T" grip external operating handle | 1250A | **1 438.50** |
| **1401 0532** | S1 | 320 mm | □ 5 | extension shaft for switch | CD32A | **496.65** |
| **1401 0540** | S1 | 400 mm | □ 5 | extension shaft for switch | CD32A | **549.15** |
| **1400 1020** | S1/S2 | 200 mm | □ 10 | extension shaft for switch | 32 - 400A | **225.75** |
| **1400 1032** | S1/S2 | 320 mm | □ 10 | extension shaft for switch | 32 - 400A | **255.15** |
| **1400 1050** | S1/S2 | 500 mm | □ 10 | extension shaft for switch | 32 - 400A | **504.00** |
| **1400 1232** | S3/S4 | 320 mm | □ 12 | extension shaft for switch | 630 - 1250A | **691.95** |
| **1400 1250** | S3/S4 | 500 mm | □ 12 | extension shaft for switch | 630 - 1250A | **1 344.00** |
| **1429 0000** | guide | | | *(permits engaging of misaligned shaft with handle)* | *(all sizes)* | **162.75** |
| **Auxiliary contacts for switch fuses** | | | | | | |
| **3999 0701** | 1 NO | U type | | auxiliary contact and support for switches | CD32 - 1250A | **271.95** |
| **3999 0702** | 1 NC | U type | | additional auxiliary contact fuse switches | CD32 - 1250A | **271.95** |
| **3999 0710** | holder | | | contact holder for 4 additional auxiliary contacts | CD32A | **780.15** |
| **3999 0600** | holder | | | contact holder for 4 additional auxiliary contacts | 32 - 400A | **1 018.50** |
| **Terminal shrouds** | | | | *(also provides phase separation for switches)* | | |
| **3998 3016** | shroud | 3-pole | | terminal protection shroud for switches | 100 - 160A | **577.50** |
| **3998 3025** | shroud | 3-pole | | terminal protection shroud for switches | 200 - 250A | **765.45** |
| **3898 3040** | shroud | 3-pole | | terminal protection shroud for switches | 315 - 400A | **721.35** |
| **3898 3080** | shroud | 3-pole | | terminal protection shroud for switches | 630 - 800A | **2 079.00** |
| **3898 3120** | shroud | 3-pole | | terminal protection shroud for switches | 1250A | **2 446.50** |



5120025



5120315



PTF/78



PTF/45



PTF/50



PTF/30



PTF/35

## Miniature glass fuses *(20 x 5 mm)*

- Miniature glass fuse-links with low breaking capacity, intended for small currents
- Protect against overloads and short circuits in electronic equipment, household, telecommunications and small transformers or motors
- Available with quick-acting (F) characteristics
- Manufactured according to IEC and EN standards with glass tube and nickel-plated copper alloy contact caps

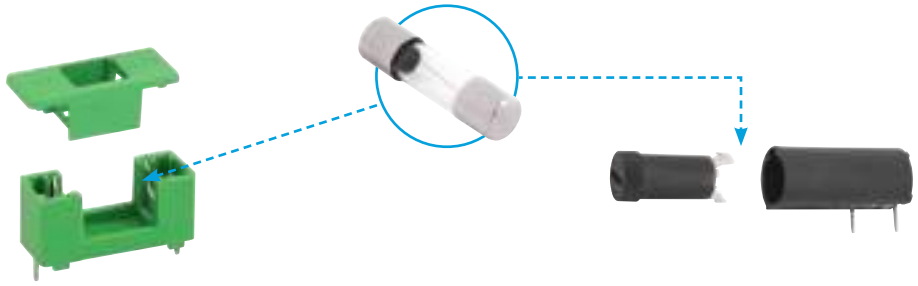
| type | rated current | rated voltage | breaking capacity | description | dimensions (mm) | price Per pack |
|---|---|---|---|---|---|---|
| **Standard glass fuses 20 x 5mm** | | | | | | *(10 pcs)* |
| **5120025** | 0.25A | 250V | 35A | (F) fast acting cylindrical glass fuse | 20 x 5 | **58.80** |
| **5120050** | 0.50A | 250V | 35A | (F) fast acting cylindrical glass fuse | 20 x 5 | **58.80** |
| **5120063** | 0.63A | 250V | 35A | (F) fast acting cylindrical glass fuse | 20 x 5 | **77.70** |
| **5120100** | 1.0A | 250V | 35A | (F) fast acting cylindrical glass fuse | 20 x 5 | **47.25** |
| **5120125** | 1.25A | 250V | 35A | (F) fast acting cylindrical glass fuse | 20 x 5 | **53.55** |
| **5120160** | 1.6A | 250V | 35A | (F) fast acting cylindrical glass fuse | 20 x 5 | **69.30** |
| **5120200** | 2.0A | 250V | 35A | (F) fast acting cylindrical glass fuse | 20 x 5 | **47.25** |
| **5120250** | 2.5A | 250V | 35A | (F) fast acting cylindrical glass fuse | 20 x 5 | **53.55** |
| **5120315** | 3.15A | 250V | 35A | (F) fast acting cylindrical glass fuse | 20 x 5 | **53.55** |
| **5120400** | 4.0A | 250V | 10 x In | (F) fast acting cylindrical glass fuse | 20 x 5 | **47.25** |
| **5120500** | 5.0A | 250V | 10 x In | (F) fast acting cylindrical glass fuse | 20 x 5 | **47.25** |
| **5120630** | 6.3A | 250V | 10 x In | (F) fast acting cylindrical glass fuse | 20 x 5 | **47.25** |
| **5021000** | 10A | 250V | 10 x In | (F) fast acting cylindrical glass fuse | 20 x 5 | **47.25** |
| **5021600** | 16A | 250V | 10 x In | (F) fast acting cylindrical glass fuse | 20 x 5 | **73.50** |

## Fuse holders for 20 x 5 mm glass fuses

- Protection against electric shock: I-II
- Impulse withstand bet. Terminals: > 4.0 kV
- Admissable ambient temperature: -30°C to 85°C
- Pollution degree: 3
- Flame class rating: UL 94 VO

| type | rated current | rated voltage | mounting | description | for fuse (mm) | price each |
|---|---|---|---|---|---|---|
| **PCB mount fuse holders** | | | | | | |
| **PTF/78** | 6.3A | 250V | PCB | PCB mount fuse holder | 20 x 5 | **4.41** |
| **BS232VE** | cover | | | protection cover for above PTF/78 fuse holder | | **1.79** |
| **PTF/45** | 10A | 250V | PCB | PCB vertical mounting fuse holder | 20 x 5 | **17.54** |
| **PTF/50** | 10A | 250V | PCB | PCB horizontal mounting fuse holder | 20 x 5 | **19.11** |
| **Panel mount fuse holder** | | | | | | |
| • Knurled knob access<br>• L 34.2 mm extends 11 mm outside panel | | | | | | |
| **PTF/30** | 10A | 250V | panel | panel mount Ø13 mm fuse holder | 20 x 5 | **24.26** |
| **Panel mount fuse holder** | | | | | | |
| • Flat blade access -<br>• L 37.5 mm extends 5.5 mm outside panel | | | | | | |
| **PTF/35** | 10A | 250V | panel | panel mount Ø12.7 mm fuse holder | 20 x 5 | **26.88** |
| **In-line shock safe fuse holder** | | | | | | |
| **PTF/80A** | 6.3A | 250V | in-line | in-line shock safe fuse holder | 20 x 5 | **20.37** |

### Standard glass fuse + holders





Above ZAR prices do not include VAT. E&OE

CYL 10x38 14x51 22x58

**gG class - Cylindrical fuse-links** Standards: IEC/EN 60269-1, IEC/EN 60269-2

Cylindrical fuse-links with high withstand to internal pressure and thermal shock, permitting very high breaking capacities in a compact fuse design. Melting elements are designed to avoid ageing, thus maintaining their electrical characteristics over time.


4210...


4212...


4220...


4222...

| type | rated current | rated voltage | breaking capacity | class | description | dimension (mm) | price |
|---|---|---|---|---|---|---|---|
| **gG Class cylindrical fuse-links** | | | | | | | |
| General protection of overloads and short circuits, protection of cables, power lines and equipment | | | | | | | |
| **10 x 38 mm cylindrical fuses** | | | | | | | |
| **420000** | 0.5A | 500V | 120kA | gG | cylindrical fuse-link | 10 x 38 | **14.18** |
| **420001** | 1A | 500V | 120kA | gG | cylindrical fuse-link | 10 x 38 | **12.81** |
| **420002** | 2A | 500V | 120kA | gG | cylindrical fuse-link | 10 x 38 | **12.81** |
| **420004** | 4A | 500V | 120kA | gG | cylindrical fuse-link | 10 x 38 | **12.81** |
| **420006** | 6A | 500V | 120kA | gG | cylindrical fuse-link | 10 x 38 | **12.81** |
| **420010** | 10A | 500V | 120kA | gG | cylindrical fuse-link | 10 x 38 | **12.81** |
| **420016** | 16A | 500V | 120kA | gG | cylindrical fuse-link | 10 x 38 | **12.81** |
| **420020** | 20A | 500V | 120kA | gG | cylindrical fuse-link | 10 x 38 | **12.81** |
| **420025** | 25A | 500V | 120kA | gG | cylindrical fuse-link | 10 x 38 | **14.18** |
| **420032** | 32A | 400V | 120kA | gG | cylindrical fuse-link | 10 x 38 | **14.18** |
| **14 x 51 mm cylindrical fuses** | | | | | | | |
| **421010** | 10A | 690V | 80kA | gG | cylindrical fuse-link | 14 x 51 | **23.42** |
| **421016** | 16A | 690V | 80kA | gG | cylindrical fuse-link | 14 x 51 | **23.42** |
| **421020** | 20A | 690V | 80kA | gG | cylindrical fuse-link | 14 x 51 | **23.42** |
| **421025** | 25A | 690V | 80kA | gG | cylindrical fuse-link | 14 x 51 | **23.42** |
| **421032** | 32A | 500V | 120kA | gG | cylindrical fuse-link | 14 x 51 | **23.42** |
| **421040** | 40A | 500V | 120kA | gG | cylindrical fuse-link | 14 x 51 | **24.78** |
| **421050** | 50A | 400V | 120kA | gG | cylindrical fuse-link | 14 x 51 | **25.52** |
| **With striker -** *for use with fuse holder incorporating a micro switch for remote "fuse blown" indication* | | | | | | | |
| **421202** | 2A | 500V | 120kA | gG | fuse-link with striker | 14 x 51 | **74.55** |
| **421204** | 4A | 500V | 120kA | gG | fuse-link with striker | 14 x 51 | **78.75** |
| **421206** | 6A | 500V | 120kA | gG | fuse-link with striker | 14 x 51 | **78.75** |
| **421210** | 10A | 500V | 120kA | gG | fuse-link with striker | 14 x 51 | **78.75** |
| **421216** | 16A | 500V | 120kA | gG | fuse-link with striker | 14 x 51 | **78.75** |
| **421220** | 20A | 500V | 120kA | gG | fuse-link with striker | 14 x 51 | **78.75** |
| **421225** | 25A | 500V | 120kA | gG | fuse-link with striker | 14 x 51 | **78.75** |
| **421232** | 32A | 500V | 120kA | gG | fuse-link with striker | 14 x 51 | **84.00** |
| **421240** | 40A | 500V | 120kA | gG | fuse-link with striker | 14 x 51 | **84.00** |
| **421250** | 50A | 400V | 120kA | gG | fuse-link with striker | 14 x 51 | **84.00** |
| **22 x 58 mm cylindrical fuses** | | | | | | | |
| **422032** | 32A | 690V | 80kA | gG | cylindrical fuse-link | 22 x 58 | **71.40** |
| **422040** | 40A | 690V | 80kA | gG | cylindrical fuse-link | 22 x 58 | **71.40** |
| **422050** | 50A | 690V | 80kA | gG | cylindrical fuse-link | 22 x 58 | **71.40** |
| **422063** | 63A | 690V | 80kA | gG | cylindrical fuse-link | 22 x 58 | **65.10** |
| **422080** | 80A | 500V | 120kA | gG | cylindrical fuse-link | 22 x 58 | **65.10** |
| **422000** | 100A | 500V | 120kA | gG | cylindrical fuse-link | 22 x 58 | **65.10** |
| **422015** | 125A | 500V | 120kA | gG | cylindrical fuse-link | 22 x 58 | **65.10** |
| **With striker -** *for use with fuse holder incorporating a micro switch for remote "fuse blown" indication* | | | | | | | |
| **422232** | 32A | 690V | 80kA | gG | fuse-link with striker | 22 x 58 | **116.55** |
| **422240** | 40A | 690V | 80kA | gG | fuse-link with striker | 22 x 58 | **116.55** |
| **422250** | 50A | 690V | 80kA | gG | fuse-link with striker | 22 x 58 | **121.80** |
| **422263** | 63A | 690V | 80kA | gG | fuse-link with striker | 22 x 58 | **121.80** |
| **422280** | 80A | 500V | 120kA | gG | fuse-link with striker | 22 x 58 | **131.25** |
| **422200** | 100A | 500V | 120kA | gG | fuse-link with striker | 22 x 58 | **131.25** |
| **422215** | 125A | 400V | 120kA | gG | fuse-link with striker | 22 x 58 | **131.25** |

**DC application for DF gG fuse-links** *(L/R = 15ms)*

Fuses are generally suitable for both AC and DC applications, however voltage ratings will differ and therefore have to be taken into consideration.

For higher DC voltage application see photovoltaic fuse-links

| Fuse size | rated current | maximum DC voltage | DC breaking capacity |
|---|---|---|---|
| **10 x 38** | 0.5A…16A | 250 VDC | 15 kA |
| | 20A…32A | 80 VDC | |
| **14 x 51** | 1A…25A | 440 VDC | 15 kA |
| | 32A…40A | 150 VDC | |
| | 50A | 48 VDC | |
| **22 x 58** | 2A…63A | 440 VDC | 15 kA |
| | 80A…100A | 150 VDC | |
| | 125A | 48 VDC | |

CYL 10x38 14x51 22x58 10x85

Cylindrical fuse-links **aM class** are intended for short circuit protection of motors, transformers and other loads with high inrush currents. Protection of switchgear *(contactor, thermal overload)* due to excellent current limiting capability and low $I^2t$ values.

These fuse-links should be associated with a thermal overload protection device as a disconnector. Made of ceramic tube with high withstand internal pressure and thermal shock, offering high breaking capacity in a reduced dimension. Melting elements are silverplated to avoid aging, keeping electric characteristics unchanged.


440...


441...


442...


415040


485705


433...


432...


431...

| type | rated current | rated voltage | breaking capacity | class | description | dimension (mm) | price |
|---|---|---|---|---|---|---|---|
| **aM** *(motor protection)* **fuse-links** | | | | | | | |
| **10 x 38 mm cylindrical fuses** | | | | | | | |
| **440000** | 0.5A | 500V | 120 kA | aM | cylindrical fuse-link | 10 x 38 | **13.44** |
| **440001** | 1A | 500V | 120 kA | aM | cylindrical fuse-link | 10 x 38 | **13.44** |
| **440002** | 2A | 500V | 120 kA | aM | cylindrical fuse-link | 10 x 38 | **13.44** |
| **440004** | 4A | 500V | 120 kA | aM | cylindrical fuse-link | 10 x 38 | **13.44** |
| **440006** | 6A | 500V | 120 kA | aM | cylindrical fuse-link | 10 x 38 | **13.44** |
| **440010** | 10A | 500V | 120 kA | aM | cylindrical fuse-link | 10 x 38 | **13.44** |
| **440016** | 16A | 500V | 120 kA | aM | cylindrical fuse-link | 10 x 38 | **13.44** |
| **440020** | 20A | 400V | 120 kA | aM | cylindrical fuse-link | 10 x 38 | **13.44** |
| **440025** | 25A | 400V | 120 kA | aM | cylindrical fuse-link | 10 x 38 | **13.44** |
| **440032** | 32A | 400V | 120 kA | aM | cylindrical fuse-link | 10 x 38 | **13.44** |
| **14 x 51 mm cylindrical fuses** | | | | | | | |
| **441020** | 20A | 690V | 80 kA | aM | cylindrical fuse-link | 14 x 51 | **28.35** |
| **441025** | 25A | 690V | 80 kA | aM | cylindrical fuse-link | 14 x 51 | **28.35** |
| **441032** | 32A | 500V | 120 kA | aM | cylindrical fuse-link | 14 x 51 | **28.35** |
| **441040** | 40A | 500V | 120 kA | aM | cylindrical fuse-link | 14 x 51 | **26.25** |
| **441050** | 50A | 400V | 120 kA | aM | cylindrical fuse-link | 14 x 51 | **30.45** |
| **22 x 58 mm cylindrical fuses** | | | | | | | |
| **442032** | 32A | 690V | 80 kA | aM | cylindrical fuse-link | 22 x 58 | **50.40** |
| **442040** | 40A | 690V | 80 kA | aM | cylindrical fuse-link | 22 x 58 | **50.40** |
| **442050** | 50A | 690V | 80 kA | aM | cylindrical fuse-link | 22 x 58 | **50.40** |
| **442063** | 63A | 690V | 80 kA | aM | cylindrical fuse-link | 22 x 58 | **56.70** |
| **442080** | 80A | 500V | 120 kA | aM | cylindrical fuse-link | 22 x 58 | **56.70** |
| **442000** | 100A | 500V | 120 kA | aM | cylindrical fuse-link | 22 x 58 | **56.70** |
| **442015** | 125A | 400V | 120 kA | aM | cylindrical fuse-link | 22 x 58 | **56.70** |

**Medium voltage (MV) fuse-links for public lighting 1500 VAC**

Public lighting systems in urban streets, roads, tunnels and motorways experience voltage drop problems and high energy losses leading to the use of high cross section conductors in very long lines.

To avoid this inconvenience, higher voltage supply networks are usually used by means of special transformers designed for this purpose which increase the voltage for transmission, then reducing to adequate levels at the destination.

It is necessary to use fuse links with adequate rated voltages, for protection of these networks on the medium voltage side.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **415010** | 3.15A | 1500V | 20 kA | g | MV cylindrical fuse-link | 10 x 85 | **428.40** |
| **415015** | 4A | 1500V | 20 kA | g | MV cylindrical fuse-link | 10 x 85 | **404.25** |
| **415020** | 5A | 1500V | 20 kA | g | MV cylindrical fuse-link | 10 x 85 | **404.25** |
| **415025** | 6.3A | 1500V | 20 kA | g | MV cylindrical fuse-link | 10 x 85 | **404.25** |
| **415030** | 8A | 1500V | 20 kA | g | MV cylindrical fuse-link | 10 x 85 | **404.25** |
| **415035** | 10A | 1500V | 20 kA | g | MV cylindrical fuse-link | 10 x 85 | **404.25** |
| **415040** | 12A | 1500V | 20 kA | g | MV cylindrical fuse-link | 10 x 85 | **460.95** |

*Longer body fuses (150/180 mm) for higher voltages 2500,3200,5500V available on request*

| **PMLe series MV fuse holder** | 1000 VAC/1500 VDC | *(H) 130 x (W) 24 x (D) 58 mm* | |
|---|---|---|---|
| **10/14 x 85 mm fuse holder** | | | |
| **485705** | 32A | 1500V | 1-pole | industrial MV cylindrical fuseholder | 10/14 x 85 | **148.05** |
| **Accessories for above MV fuse holder** | | | |
| **480005** | pin | body pins for multi-pole assembly of fuse holders | **5.04** |
| **485050** | ties | handle ties for multi-pole assembly of fuse holders | **3.57** |

| **Solid neutral links** *(cylindrical)* | | | | | | | |
|---|---|---|---|---|---|---|---|
| **431000** | 32A | – | – | gG/aM | solid neutral link | 10 x 38 | **11.34** |
| **432000** | 50A | – | – | gG/aM | solid neutral link | 14 x 51 | **19.11** |
| **433000** | 125A | – | – | gG/aM | solid neutral link | 22 x 58 | **32.55** |



Above ZAR prices do not include VAT. E&OE

CYL 10x38 14x51 10x85 14x85 PV

## gPV photovoltaic fuse-links

Made of ceramic tube with high withstand to internal pressure and thermal shock, permitting a high breaking capacity in a reduced physical space.

Contacts are made of silverplated copper and melting elements are of pure silver to avoid aging and maintain electric characteristics over time.

Standards: gPV class according to IEC60269-6


485108


491610


492225


492262


485705


10 x 85


10/14 x 85

| type | rated current | rated voltage | breaking capacity | class | description | dimension (mm) | price |
|---|---|---|---|---|---|---|---|
| **gPV photovoltaic cylindrical fuse-links** | | **600/1000 VDC** | | | | | |
| gPV 10 x 38 and 14 x 51 cylindrical fuse-links have been developed to offer compact, safety and economic protection of photovoltaic modules *(array protection)* with voltages up to 1000 VDC. Provide protection against overloads and short-circuits. | | | | | | | |
| **491601** | 1A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **69.30** |
| **491602** | 2A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **69.30** |
| **491604** | 3A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **69.30** |
| **491605** | 4A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **69.30** |
| **491606** | 5A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **69.30** |
| **491610** | 6A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **69.30** |
| **491615** | 8A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **69.30** |
| **491620** | 10A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **69.30** |
| **491625** | 12A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **69.30** |
| **491630** | 16A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **69.30** |
| **491635** | 20A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **69.30** |
| **491940** | 25A | 600 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **78.75** |
| **491945** | 32A | 600 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 38 | **78.75** |
| Above fuse-links we recommend the utilization of 10 x 38 PV fuse holders **485150/485152/485151** | | | | | | | |
| **491650** | 25A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 14 x 51 | **150.15** |
| **491655** | 32A | 1000 VDC | 30 kA | gPV | photovoltaic fuse-link | 14 x 51 | **164.85** |
| Above fuse fuse-links we recommend the utilization of 14 x 51 PV fuse holders **485250** | | | | | | | |
| *For ambient temperatures higher than 25ºC, a derating in maximum current must be applied* | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **gPV photovoltaic cylindrical fuse-links** | | **1200/1500 VDC** | | | | | |
| gPV 10 x 85 & 10/14 x 85 cylindrical fuse-links from DF Electric have been developed to offer a compact, safety and economic protection of photovoltaic modules *(array protection)* with voltages up to 1500 VDC. | | | | | | | |
| **492202** | 2A | 1500 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 85 | **110.25** |
| **492205** | 4A | 1500 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 85 | **110.25** |
| **492210** | 6A | 1500 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 85 | **110.25** |
| **492215** | 8A | 1500 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 85 | **110.25** |
| **492220** | 10A | 1500 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 85 | **110.25** |
| **492225** | 12A | 1500 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 85 | **110.25** |
| **492230** | 16A | 1500 VDC | 30 kA | gPV | photovoltaic fuse-link | 10 x 85 | **110.25** |
| **492250** | 20A | 1500 VDC | 10 kA | gPV | photovoltaic fuse-link | 10/14 x 85 | **173.25** |
| **492255** | 25A | 1500 VDC | 10 kA | gPV | photovoltaic fuse-link | 10/14 x 85 | **173.25** |
| **492262** | 32A | 1500 VDC | 10 kA | gPV | photovoltaic fuse-link | 10/14 x 85 | **173.25** |
| Above fuse-links we recommend the utilization of **485705** fuse holders | | | | | | | |
| *For ambient temperatures higher than 25ºC, a derating in maximum current must be applied* | | | | | | | |

New

## Fuse holders for Photovoltaic applications 1000/1500 VDC

- Fuse holder for cylindrical fuse-link size 10 x 85 gPV and 14 x 85
- Modern compact design
- Ventilation zones optimized for a improved heat dissipation
- Manufactured with a high quality materials
- Silver plated copper contacts
- Plastic materials with high temperature resistance and self-extinguishable

| type | rated current | for fuse size (mm) | poles | | description | | price |
|---|---|---|---|---|---|---|---|
| **485150** | 32A | 1000 VDC | 1-pole | gPV | photovoltaic fuse holder | 10 x 38 | **76.65** |
| **485152*** | 32A | 1000 VDC | 1-pole | gPV | photovoltaic fuse holder | 10 x 38 | **75.60** |
| **485151** | 32A | 1000 VDC | 2-pole | gPV | photovoltaic fuse holder | 10 x 38 | **158.55** |
| **485250** | 50A | 1000 VDC | 1-pole | gPV | photovoltaic fuse holder | 14 x 51 | **200.55** |
| **485705** | 32A | 1500 VDC | 1-pole | gPV | photovoltaic fuse holder | 10/14 x 85 | **148.05** |

* *Indicator*

CYL 10x38 14x51 22x58

## Semiconductor cylindrical fuse-links

Semi-conductor fuse-links intended to clear short-circuits and have been designed with very low I²t values and reduced arc voltages, guaranteeing optimum protection of semiconductors with exceptional cycling ability.

Typical applications are protection of semiconductors *(diodes, thyristors, triacs, etc)* used in power rectifiers, UPS, converters, motor drives, soft starters, solid state relays, photovoltaic and welding inverters and any application where necessary to protect semiconductor devices.

- Standards: IEC/EN 60269-1, IEC/EN 60269-4, UL248 standard (file Nr. E477155)



492004



492123



492139

| type | rated current | rated voltage | breaking capacity | class | description | dimension (mm) | price |
|---|---|---|---|---|---|---|---|
| **RAPIDPLUS gR high speed fuse-links for semiconductors** | | | | | | | |
| RAPIDPLUS gR fuse-links are capable of clearing all types of overcurrents, overloads and short-circuits, protecting semiconductors, cables and associated switchgear within the installation. | | | | | | | |
| **10 x 38mm gR cylindrical fuses** | | | | | | | |
| **492003** | 4A | 690V | 200 kA | gR | semiconductor fuse-link | 10 x 38 | **86.10** |
| **492004** | 6A | 690V | 200 kA | gR | semiconductor fuse-link | 10 x 38 | **86.10** |
| **492006** | 10A | 690V | 200 kA | gR | semiconductor fuse-link | 10 x 38 | **86.10** |
| **492008** | 16A | 690V | 200 kA | gR | semiconductor fuse-link | 10 x 38 | **86.10** |
| **492009** | 20A | 690V | 200 kA | gR | semiconductor fuse-link | 10 x 38 | **86.10** |
| **492010** | 25A | 690V | 200 kA | gR | semiconductor fuse-link | 10 x 38 | **86.10** |
| **492011** | 32A | 690V | 200 kA | gR | semiconductor fuse-link | 10 x 38 | **86.10** |
| **14 x 51mm gR cylindrical fuses** | | | | | | | |
| **492022** | 32A | 690V | 200 kA | gR | semiconductor fuse-link | 14 x 51 | **274.05** |
| **492023** | 40A | 690V | 200 kA | gR | semiconductor fuse-link | 14 x 51 | **290.85** |
| **492024** | 50A | 690V | 200 kA | gR | semiconductor fuse-link | 14 x 51 | **308.70** |
| **With "striker" -** *for use with fuse holder micro switch for remote "fuse blown" indication* | | | | | | | |
| **492117** | 10A | 690V | 200 kA | gR | SC fuse-link with striker | 14 x 51 | **229.95** |
| **492118** | 12A | 690V | 200 kA | gR | SC fuse-link with striker | 14 x 51 | **239.40** |
| **492119** | 16A | 690V | 200 kA | gR | SC fuse-link with striker | 14 x 51 | **239.40** |
| **492120** | 20A | 690V | 200 kA | gR | SC fuse-link with striker | 14 x 51 | **308.70** |
| **492121** | 25A | 690V | 200 kA | gR | SC fuse-link with striker | 14 x 51 | **308.70** |
| **492122** | 32A | 690V | 200 kA | gR | SC fuse-link with striker | 14 x 51 | **308.70** |
| **492123** | 40A | 690V | 200 kA | gR | SC fuse-link with striker | 14 x 51 | **445.20** |
| **492124** | 50A | 690V | 200 kA | gR | SC fuse-link with striker | 14 x 51 | **478.80** |
| **22 x 58 mm gR cylindrical fuses** | | | | | | | |
| **492037** | 50A | 690V | 200 kA | gR | semiconductor fuse-link | 22 x 58 | **328.65** |
| **492038** | 63A | 690V | 200 kA | gR | semiconductor fuse-link | 22 x 58 | **410.55** |
| **492039** | 80A | 690V | 200 kA | gR | semiconductor fuse-link | 22 x 58 | **649.95** |
| **492040** | 100A | 690V | 200 kA | gR | semiconductor fuse-link | 22 x 58 | **821.10** |
| **With "striker" -** *for use with fuse holder micro switch for remote "fuse blown" indication* | | | | | | | |
| **492137** | 50A | 690V | 200 kA | gR | semiconductor fuse-link | 22 x 58 | **513.45** |
| **492138** | 63A | 690V | 200 kA | gR | semiconductor fuse-link | 22 x 58 | **616.35** |
| **492139** | 80A | 690V | 200 kA | gR | semiconductor fuse-link | 22 x 58 | **786.45** |
| **492140** | 100A | 690V | 200 kA | gR | semiconductor fuse-link | 22 x 58 | **1 025.85** |

## BAC open-type fuse bases *for cylindrical fuses*

Industrial OPEN TYPE fuse bases for cylindrical fuse-links, suitable for semiconductor protection fuselinks with a high dissipated power, facilitate exceptional heat dissipation characteristics. Manufactured with high quality silver plated copper contacts and high temperature self-extinguishing plastic materials.

- DIN-rail or screw fix mounting
- Microswitch accessory for fuses with striker to monitor fusing



451260 + 451275

| type | rated current | rated voltage | poles | description | for fuse size (mm) | price |
|---|---|---|---|---|---|---|
| 10 x 38 mm | | | | (H) 75 x (W)22 x (D) 38 mm | | |
| **451250** | 32A | 690V | 1-pole | open type cylindrical fuse holder | 10 x 38 | **93.45** |
| 14 x 51 mm | | | | (H) 92 x (W)27 x (D) 50 mm | | |
| **451260** | 50A | 690V | 1-pole | open type cylindrical fuse holder | 14 x 51 | **172.20** |
| 22 x 58 mm | | | | (H) 118 x (W)36 x (D) 41 mm | | |
| **451270** | 100A | 690V | 1-pole | open type cylindrical fuse holder | 22 x 58 | **243.60** |
| **"Fuse blown" indication micro switch -** *for 14 x 51 and 22 x 58 mm fuse-links* | | | | | | |
| **451275** | | micro switch | | accessory used with fuses with "striker" | 14 x 51/22 x 58 | **119.70** |



Above ZAR prices do not include VAT. E&OE

CYL 10x38 14x51 22x58

## Semiconductor cylindrical fuse-links

RAPIDPLUS aR fuse-links are intended to clear short-circuits, designed to have very low $I^2t$ values and reduced arc voltages guaranteeing, optimum protection of semiconductors with excellent cycling abilities.

Made of ceramic high internal pressure withstand and thermal shock capabilities with silver-plated copper contacts.

Typical applications include protection of semiconductors *(diodes, thyristors, triacs, etc)* used in power rectifiers, UPS, converters, motor drives, soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where necessary to protect semiconductor devices.

UL certification according to UL248 standard. UL file Nr. E477155


491155


491770


491835

| type | rated current | rated voltage | breaking capacity | class | description | dimension (mm) | price |
|---|---|---|---|---|---|---|---|
| **RAPIDPLUS aR high speed fuse-links for semiconductors** | | | | | | | |
| **10 x 38 mm aR cylindrical fuses** | | | | | | | |
| **491107** | 2A | 690V | 200 kA | aR | semiconductor fuse-link | 10 x 38 | **87.15** |
| **491110** | 3A | 690V | 200 kA | aR | semiconductor fuse-link | 10 x 38 | **87.15** |
| **491113** | 4A | 690V | 200 kA | aR | semiconductor fuse-link | 10 x 38 | **87.15** |
| **491115** | 6A | 690V | 200 kA | aR | semiconductor fuse-link | 10 x 38 | **87.15** |
| **491120** | 8A | 690V | 200 kA | aR | semiconductor fuse-link | 10 x 38 | **87.15** |
| **491125** | 10A | 690V | 200 kA | aR | semiconductor fuse-link | 10 x 38 | **87.15** |
| **491130** | 12A | 690V | 200 kA | aR | semiconductor fuse-link | 10 x 38 | **87.15** |
| **491135** | 16A | 690V | 200 kA | aR | semiconductor fuse-link | 10 x 38 | **87.15** |
| **491140** | 20A | 690V | 200 kA | aR | semiconductor fuse-link | 10 x 38 | **87.15** |
| **491145** | 25A | 690V | 200 kA | aR | semiconductor fuse-link | 10 x 38 | **87.15** |
| **491155** | 32A | 690V | 200 kA | aR | semiconductor fuse-link | 10 x 38 | **87.15** |
| **14 x 51 mm aR cylindrical fuses with "striker"** | | | | | | | |
| *- For use with fuse holder incorporating a micro switch for remote "fuse blown" indication* | | | | | | | |
| **491730** | 8A | 690V | 200 kA | aR | semiconductor fuse-link | 14 x 51 | **300.30** |
| **491735** | 10A | 690V | 200 kA | aR | semiconductor fuse-link | 14 x 51 | **300.30** |
| **491737** | 12A | 690V | 200 kA | aR | semiconductor fuse-link | 14 x 51 | **300.30** |
| **491741** | 16A | 690V | 200 kA | aR | semiconductor fuse-link | 14 x 51 | **290.85** |
| **491745** | 20A | 690V | 200 kA | aR | semiconductor fuse-link | 14 x 51 | **326.55** |
| **491750** | 25A | 690V | 200 kA | aR | semiconductor fuse-link | 14 x 51 | **326.55** |
| **491760** | 32A | 690V | 200 kA | aR | semiconductor fuse-link | 14 x 51 | **326.55** |
| **491765** | 40A | 690V | 200 kA | aR | semiconductor fuse-link | 14 x 51 | **420.00** |
| **491770** | 50A | 690V | 200 kA | aR | semiconductor fuse-link | 14 x 51 | **481.95** |
| **22 x 58 mm aR cylindrical fuses with "striker"** | | | | | | | |
| *- For use with fuse holder incorporating a micro switch for remote "fuse blown" indication* | | | | | | | |
| **491820** | 50A | 690V | 200 kA | aR | semiconductor fuse-link | 22 x 58 | **508.20** |
| **491825** | 63A | 690V | 200 kA | aR | semiconductor fuse-link | 22 x 58 | **562.80** |
| **491830** | 80A | 690V | 200 kA | aR | semiconductor fuse-link | 22 x 58 | **626.85** |
| **491835** | 100A | 690V | 200 kA | aR | semiconductor fuse-link | 22 x 58 | **681.45** |


485108


485120

## PMX series - Modular fuse holders *(for above fuses)*

- Modular, compact fuse holder DIN-rail mountable for cylindrical fuses
- Incorporated, hinged transparent label holder for positive circuit identification
- Optimized ventilation zones for improved heat dissipation
- High temperature resistance, self-extinguishing-halogen free body / silver plated copper contacts
- Standards: IEC/EN 60269-1, IEC/EN 60269-2, IEC/EN 60947-3, CSA C22.2 4248-1, UL4248-1

| type | rated current | for fuse size (mm) | poles | description | width in 17.5 (mm) | price |
|---|---|---|---|---|---|---|
| **10 x 38 mm fuse holders** | | | 690VAC / 750VDC | *(H) 88.8 x (D) 58 mm* | | |
| **485101** | 32A | 10 x 38 | 1-pole | industrial cylindrical fuse holder | 1 | **57.75** |
| **485108** | 32A | 10 x 38 | 1-pole | with 120-690V neon indication | 1 | **126.00** |
| **485120** | 32A | 10 x 38 | 1-pole+N | industrial cylindrical fuse holder | 1 | **118.65** |
| **485104** | 32A | 10 x 38 | 2-pole | industrial cylindrical fuse holder | 2 | **161.70** |
| **485105** | 32A | 10 x 38 | 3-pole | industrial cylindrical fuse holder | 3 | **239.40** |
| **485107** | 32A | 10 x 38 | 4-pole | industrial cylindrical fuse holder | 4 | **319.20** |
| **14 x 51 mm fuse holders** | | | 690 VAC | *(H) 110 x (D) 76 mm* | | |
| **485201** | 50A | 14 x 51 | 1-pole | industrial cylindrical fuse holder | 1.5 | **160.65** |
| **485208** | 50A | 14 x 51 | 1-pole | with 120-690V neon indication | 1.5 | **210.00** |
| **485203** | 50A | 14 x 51 | 1-pole+N | industrial cylindrical fuse holder | 3 | **347.55** |
| **485205** | 50A | 14 x 51 | 3-pole | industrial cylindrical fuse holder | 4.5 | **517.65** |

*For 22 x 58 mm fuse holders, see next page*


485120


485205


485305


485356


480005


485359


485360


483530


483534

## PMX series - Modular fuse holders

- Modular, compact fuse holder DIN-rail mountable for cylindrical fuses
- Incorporated, hinged transparent label holder for positive circuit identification
- Optimized ventilation zones for improved heat dissipation
- High-temperature resistance, self-extinguishing-halogen free body / silver plated copper contacts
- Standards: IEC/EN 60269-1, IEC/EN 60269-2, IEC/EN 60947-3, CSA C22.2 4248-1, UL4248-1

| type | rated current | for fuse size (mm) | poles | description | width in 17.5 (mm) | price |
|---|---|---|---|---|---|---|
| **10 x 38 mm fuse holders** | | | 690 VAC / 750 VDC | *(H) 88.8 x (D) 58 mm* | | |
| **485101** | 32A | 10 x 38 | 1-pole | industrial cylindrical fuse holder | 1 | **57.75** |
| **485108** | 32A | 10 x 38 | 1-pole | with 120-690V neon indication | 1 | **126.00** |
| **485120** | 32A | 10 x 38 | 1-pole+N | industrial cylindrical fuse holder | 1 | **118.65** |
| **485104** | 32A | 10 x 38 | 2-pole | industrial cylindrical fuse holder | 2 | **161.70** |
| **485105** | 32A | 10 x 38 | 3-pole | industrial cylindrical fuse holder | 3 | **239.40** |
| **485107** | 32A | 10 x 38 | 4-pole | industrial cylindrical fuse holder | 4 | **319.20** |
| **Accessories for 10 x 38 mm fuse holders** | | | | | | |
| **480005** | pin | 10 x 38/85 | | body pins for multi-pole assembly of fuse holders | | **5.04** |
| **485050** | ties | 10 x 38/85 | | handle ties for multi-pole assembly of fuse holders | | **3.57** |
| **485051** | lock | 10 x 38/85 | | lock support to padlock fuse holders in "open" position | | **38.96** |
| **485053** | barrier | 10 x 38 | | phase separator accessory for fuse holders | | **9.98** |
| **485054** | neon | 10 x 38 | | fusing neon indicator 120-690V for fuse holders | | **32.55** |
| **14 x 51 mm fuse holders** | | | 690 VAC | *(H) 110 x (D) 76 mm* | | |
| **485201** | 50A | 14 x 51 | 1-pole | industrial cylindrical fuse holder | 1.5 | **160.65** |
| **485208** | 50A | 14 x 51 | 1-pole | with 120-690V neon indication | 1.5 | **210.00** |
| **485203** | 50A | 14 x 51 | 1-pole+N | industrial cylindrical fuse holder | 3 | **347.55** |
| **485205** | 50A | 14 x 51 | 3-pole | industrial cylindrical fuse holder | 4.5 | **517.65** |
| **Accessories for 14 x 51 mm fuse holders** | | | | | | |
| **480005** | pin | 14 x 51 | | body pins for multi-pole assembly of fuse holders | | **5.04** |
| **485356** | ties | 14 x 51 | | handle ties for multi-pole assembly of fuse holders | | **6.41** |
| **485357** | ties | 14 x 51 | | handle ties for micro switch assembly of fuse holders | | **9.98** |
| **485258** | lock | 14 x 51 | | lock support to padlock fuse holders in "open" position | | **25.52** |
| **485259** | micro | 14 x 51 | 1-pole | micro switch for use with "striker" fuses | | **126.00** |
| **485260** | micro | 14 x 51 | 3-pole | micro switch for use with "striker" fuses | | **156.45** |
| **485262** | micro | 14 x 51 | 1-pole | micro sw extension for 2/4 pole requirements | | **51.45** |
| **485264** | neon | 14 x 51 | | fusing neon indicator 120-690V for fuse holders | | **77.70** |
| **22 x 58 mm fuse holders** | | | 690 VAC | *(H) 126.5 x (D) 76.5 mm* | | |
| **485301** | 125A | 22 x 58 | 1-pole | industrial cylindrical fuse holder | 2 | **283.50** |
| **485308** | 125A | 22 x 58 | 1-pole | with 120-690V neon indication | 2 | **417.90** |
| **485303** | 125A | 22 x 58 | 1-pole+N | industrial cylindrical fuse holder | 4 | **630.00** |
| **485305** | 125A | 22 x 58 | 3-pole | industrial cylindrical fuse holder | 6 | **1 005.90** |
| *22 x 58 fuse holders are rated at **125A**, they are marked at **100A** to conform to IEC/EN 60269-2 requirements* | | | | | | |
| **Accessories for 22 x 58 mm fuse holders** | | | | | | |
| **480005** | pin | 22 x 58 | | body pins for multi-pole assembly of fuse holders | | **5.04** |
| **485356** | ties | 22 x 58 | | handle ties for multi-pole assembly of fuse holders | | **6.41** |
| **485357** | ties | 22 x 58 | | handle ties for micro switch assembly of fuse holders | | **9.98** |
| **485358** | lock | 22 x 58 | | lock support to padlock fuse holders in "open" position | | **29.72** |
| **485359** | micro | 22 x 58 | 1-pole | micro switch for use with "striker" fuses | | **133.35** |
| **485360** | micro | 22 x 58 | 3-pole | micro switch for use with "striker" fuses | | **162.75** |
| **485362** | micro | 22 x 58 | 1-pole | micro sw extension for 2/4 pole requirements | | **28.35** |
| **485364** | neon | 22 x 58 | | fusing neon indicator 120-690V for fuse holders | | **67.20** |
| **PMC series - "Compact" modular fuse holders** | | | | *(H) 82.7 x (D) 38.5 mm* | | |
| Compact fuse holder with shallow dimension - for installation in low-profile enclosures | | | | | | |
| **10 x 38 mm compact fuse holder -** *low profile (38.5 mm)* | | | | | | |
| **483530** | 32A | 10 x 38 | 1-pole | compact cylindrical fuse holder | 1 | **73.50** |
| **483534** | 32A | 10 x 38 | 1-pole+N | compact cylindrical fuse holder | 1 | **118.65** |
| **Accessories for compact 10 x 38 mm fuse holder** | | | | | | |
| **483552** | kit | 10 x 38 | | PMC multi-pole assembly kit for fuse holders | | **183.75** |
| **PMLe series - MV fuse holder** | | | 1000 VAC/1500 VDC | *(H) 130 x (W) 24 x (D) 58 mm* | | |
| **10/14 x 85 mm fuse holder** | | | | | | |
| **485705** | 32A | 10 x 85 | 1-pole | industrial cylindrical fuse holder | *(24 mm)* | **148.05** |
| **480005** | pin | 10 x 85 | | body pins for multi-pole assembly of fuse holders | | **5.04** |
| **485050** | ties | 10 x 85 | | handle ties for multi-pole assembly of fuse holders | | **3.57** |



Above ZAR prices do not include VAT. E&OE

NH | NH000 | NH00 | NH1 | NH2 | NH3 | NH4

## NH industrial HRC fuse-links for general applications

Designed to offer robust and reliable protection across a wide spectrum of electrical applications. These fuses are characterised by their high rupturing capacity (HRC) and are rated gG, making them suitable for both overload and short-circuit protection.

**Class gG** for general use with high breaking capacity for protection of cables, power lines and equipment.

**Specification:**

- gG class for use as general protection against overloads and short circuits
- For protection of cables, power lines and equipment
- Fusing indicator on top of fuse-link
- Standards: IEC/EN60269-1, IEC/EN 60269-2, VDE0636, DIN43620


381065


381270

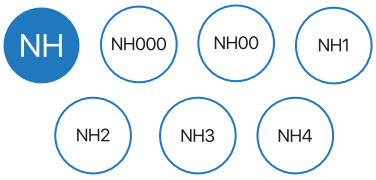

381530


382370

| type | rated current | rated voltage | breaking capacity | class size | fuse | description | price |
|---|---|---|---|---|---|---|---|
| **gG NH HRC fuse-links 500V** | | | *top indicator* | | | | |
| **381010** | 6A | 500V | 120 kA | gG | NH000 | DIN HRC fuse-link | **86.10** |
| **381015** | 10A | 500V | 120 kA | gG | NH000 | DIN HRC fuse-link | **86.10** |
| **381020** | 16A | 500V | 120 kA | gG | NH000 | DIN HRC fuse-link | **86.10** |
| **381025** | 20A | 500V | 120 kA | gG | NH000 | DIN HRC fuse-link | **86.10** |
| **381030** | 25A | 500V | 120 kA | gG | NH000 | DIN HRC fuse-link | **73.50** |
| **381035** | 32A | 500V | 120 kA | gG | NH000 | DIN HRC fuse-link | **73.50** |
| **381045** | 40A | 500V | 120 kA | gG | NH000 | DIN HRC fuse-link | **73.50** |
| **381050** | 50A | 500V | 120 kA | gG | NH000 | DIN HRC fuse-link | **73.50** |
| **381055** | 63A | 500V | 120 kA | gG | NH000 | DIN HRC fuse-link | **73.50** |
| **381060** | 80A | 500V | 120 kA | gG | NH000 | DIN HRC fuse-link | **73.50** |
| **381065** | 100A | 500V | 120 kA | gG | NH000 | DIN HRC fuse-link | **73.50** |
| **381070** | 125A | 500V | 120 kA | gG | NH00 | DIN HRC fuse-link | **109.20** |
| **381075** | 160A | 500V | 120 kA | gG | NH00 | DIN HRC fuse-link | **109.20** |
| **381255** | 160A | 500V | 120 kA | gG | NHC1 | DIN HRC fuse-link | **144.90** |
| **381260** | 200A | 500V | 120 kA | gG | NH1 | DIN HRC fuse-link | **247.80** |
| **381270** | 250A | 500V | 120 kA | gG | NH1 | DIN HRC fuse-link | **247.80** |
| **381280** | 315A | 500V | 120 kA | gG | NH1 | DIN HRC fuse-link | **247.80** |
| **381285** | 355A | 500V | 120 kA | gG | NH1 | DIN HRC fuse-link | **247.80** |
| **381370** | 315A | 500V | 120 kA | gG | NH2 | DIN HRC fuse-link | **465.15** |
| **381375** | 355A | 500V | 120 kA | gG | NH2 | DIN HRC fuse-link | **477.75** |
| **381380** | 400A | 500V | 120 kA | gG | NH2 | DIN HRC fuse-link | **483.00** |
| **381390** | 500A | 500V | 120 kA | gG | NH2 | DIN HRC fuse-link | **615.30** |
| **381465** | 500A | 500V | 120 kA | gG | NH3 | DIN HRC fuse-link | **973.35** |
| **381470** | 630A | 500V | 120 kA | gG | NH3 | DIN HRC fuse-link | **1 019.55** |
| **381475** | 800A | 500V | 120 kA | gG | NH3 | DIN HRC fuse-link | **1 071.00** |
| **381525** | 800A | 500V | 120 kA | gG | NH4 | DIN HRC fuse-link | **2 856.00** |
| **381530** | 1000A | 500V | 120 kA | gG | NH4 | DIN HRC fuse-link | **2 982.00** |
| **381535** | 1250A | 500V | 120 kA | gG | NH4 | DIN HRC fuse-link | **3 717.00** |
| **gG NH HRC fuse-links 690V** | | | *top indicator* | | | | |
| **382010** | 6A | 690V | 80 kA | gG | NH000 | DIN HRC fuse-link | **187.95** |
| **382015** | 10A | 690V | 80 kA | gG | NH000 | DIN HRC fuse-link | **179.55** |
| **382020** | 16A | 690V | 80 kA | gG | NH000 | DIN HRC fuse-link | **179.55** |
| **382025** | 20A | 690V | 80 kA | gG | NH000 | DIN HRC fuse-link | **181.65** |
| **382030** | 25A | 690V | 80 kA | gG | NH000 | DIN HRC fuse-link | **184.80** |
| **382035** | 32A | 690V | 80 kA | gG | NH000 | DIN HRC fuse-link | **184.80** |
| **382045** | 40A | 690V | 80 kA | gG | NH000 | DIN HRC fuse-link | **184.80** |
| **382050** | 50A | 690V | 80 kA | gG | NH00 | DIN HRC fuse-link | **189.00** |
| **382055** | 63A | 690V | 80 kA | gG | NH00 | DIN HRC fuse-link | **189.00** |
| **382060** | 80A | 690V | 80 kA | gG | NH00 | DIN HRC fuse-link | **189.00** |
| **382065** | 100A | 690V | 80 kA | gG | NH00 | DIN HRC fuse-link | **189.00** |
| **382250** | 125A | 690V | 80 kA | gG | NH1 | DIN HRC fuse-link | **339.15** |
| **382255** | 160A | 690V | 80 kA | gG | NH1 | DIN HRC fuse-link | **345.45** |
| **382260** | 200A | 690V | 80 kA | gG | NH1 | DIN HRC fuse-link | **353.85** |
| **382360** | 250A | 690V | 80 kA | gG | NH2 | DIN HRC fuse-link | **525.00** |
| **382370** | 315A | 690V | 80 kA | gG | NH2 | DIN HRC fuse-link | **554.40** |
| **382450** | 355A | 690V | 80 kA | gG | NH3 | DIN HRC fuse-link | **847.35** |
| **382455** | 400A | 690V | 80 kA | gG | NH3 | DIN HRC fuse-link | **858.90** |
| **382465** | 500A | 690V | 80 kA | gG | NH3 | DIN HRC fuse-link | **898.80** |
| **382520** | 630A | 690V | 80 kA | gG | NH4 | DIN HRC fuse-link | **3 465.00** |
| **382525** | 800A | 690V | 80 kA | gG | NH4 | DIN HRC fuse-link | **3 507.00** |

Fuses are generally suitable for both AC and DC applications, however voltage ratings will differ and therefore have to be taken into consideration. *(See **Annex-7**)*

*See accessory page for fuse bases and accessories*




**aM NH - HRC fuse-links** *(motor protection)*

aM class (NH) high-breaking capacity fuse-links are intended for short circuit protection of motors, transformers and other loads with high inrush currents, with rated voltages up to 690 VAC.

Offers excellent protection of switchgear due to the excellent current limiting capability and low $I^2t$ values.

**Specification:**

- Rated voltage: 500/690 VAC
- Breaking capacity: 120/80 kA
- Fusing indicator: Top of fuse-link
- Standards: IEC/EN 60269-1, IEC/EN 60269-2 and VDE43620


384045


384065


384375


385435

| type | rated current | rated voltage | breaking capacity | class size | fuse | description | price |
|---|---|---|---|---|---|---|---|
| **aM Class NH motor protection fuse-links 500/690V** *(top indicator)* | | | | | | | |
| **384010** | 6A | 690V | 80 kA | aM | NH000 | DIN HRC fuse-link | **197.40** |
| **384015** | 10A | 690V | 80 kA | aM | NH000 | DIN HRC fuse-link | **190.05** |
| **384020** | 16A | 690V | 80 kA | aM | NH000 | DIN HRC fuse-link | **190.05** |
| **384025** | 20A | 690V | 80 kA | aM | NH000 | DIN HRC fuse-link | **192.15** |
| **384030** | 25A | 690V | 80 kA | aM | NH000 | DIN HRC fuse-link | **192.15** |
| **384035** | 32A | 690V | 80 kA | aM | NH000 | DIN HRC fuse-link | **192.15** |
| **384045** | 40A | 690V | 80 kA | aM | NH000 | DIN HRC fuse-link | **192.15** |
| **384050** | 50A | 690V | 80 kA | aM | NH00 | DIN HRC fuse-link | **203.70** |
| **384055** | 63A | 690V | 80 kA | aM | NH00 | DIN HRC fuse-link | **203.70** |
| **384060** | 80A | 690V | 80 kA | aM | NH00 | DIN HRC fuse-link | **205.80** |
| **384065** | 100A | 690V | 80 kA | aM | NH00 | DIN HRC fuse-link | **220.50** |
| **383070** | 125A | 500V | 120 kA | aM | NH00 | DIN HRC fuse-link | **218.40** |
| **383075** | 160A | 500V | 120 kA | aM | NH00 | DIN HRC fuse-link | **226.80** |
| **384260** | 200A | 690V | 80 kA | aM | NH1 | DIN HRC fuse-link | **355.95** |
| **383270** | 250A | 500V | 120 kA | aM | NH1 | DIN HRC fuse-link | **374.85** |
| **384370** | 315A | 690V | 80 kA | aM | NH2 | DIN HRC fuse-link | **567.00** |
| **384375** | 355A | 690V | 80 kA | aM | NH2 | DIN HRC fuse-link | **590.10** |
| **383380** | 400A | 500V | 120 kA | aM | NH2 | DIN HRC fuse-link | **571.20** |
| **384465** | 500A | 690V | 80 kA | aM | NH3 | DIN HRC fuse-link | **1 102.50** |
| **383470** | 630A | 500V | 120 kA | aM | NH3 | DIN HRC fuse-link | **1 176.00** |
| **383525** | 800A | 500V | 120 kA | aM | NH4 | DIN HRC fuse-link | **2 961.00** |
| **383530** | 1000A | 500V | 120 kA | aM | NH4 | DIN HRC fuse-link | **3 024.00** |
| **383535** | 1250A | 500V | 120 kA | aM | NH4 | DIN HRC fuse-link | **3 801.00** |

**NH fuse-links for output side of new generation photovoltaic inverters**

Knife-type (NH) fuse-links with high breaking capacity intended for line protection on the output side of new generation photovoltaic string inverters.

Provides protection against overloads and short-circuits with rated voltages up to 800V +10% with a breaking capacity of 80 kA and low power dissipation values.

**Specification:**

- Rated voltage: 800 VAC +10%
- Breaking capacity: 80 kA
- Fusing indicator: Top of fuse-link
- Standards: IEC/EN60269-1, IEC/EN 60269-2

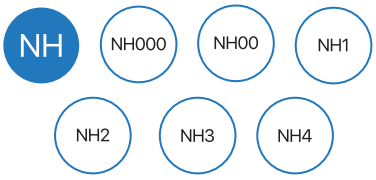
**Gs/gG NH - HRC fuse-links 800V** *(top indicator)*

**NH fuse-links 800V**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **369035** | 32A | 800V | 80 kA | gS | NH00 | DIN HRC fuse-link | **471.45** |
| **369045** | 40A | 800V | 80 kA | gS | NH00 | DIN HRC fuse-link | **471.45** |
| **369050** | 50A | 800V | 80 kA | gS | NH00 | DIN HRC fuse-link | **471.45** |
| **369055** | 63A | 800V | 80 kA | gS | NH00 | DIN HRC fuse-link | **471.45** |
| **369060** | 80A | 800V | 80 kA | gS | NH00 | DIN HRC fuse-link | **471.45** |
| **385245** | 100A | 800V | 80 kA | gG | NH00 | DIN HRC fuse-link | **414.75** |
| **385250** | 125A | 800V | 80 kA | gG | NH1 | DIN HRC fuse-link | **414.75** |
| **385255** | 160A | 800V | 80 kA | gG | NH1 | DIN HRC fuse-link | **414.75** |
| **385425** | 200A | 800V | 80 kA | gG | NH3 | DIN HRC fuse-link | **1 228.50** |
| **385435** | 250A | 800V | 80 kA | gG | NH3 | DIN HRC fuse-link | **1 228.50** |
| **385445** | 315A | 800V | 80 kA | gG | NH3 | DIN HRC fuse-link | **1 228.50** |
| **385450** | 355A | 800V | 80 kA | gG | NH3 | DIN HRC fuse-link | **1 228.50** |
| **385455** | 400A | 800V | 80 kA | gG | NH3 | DIN HRC fuse-link | **1 228.50** |



Above ZAR prices do not include VAT. E&OE




## gPV Class NH Photovoltaic fuse-links - 1000 VDC

**NH gPV** fuse-links for photovoltaic installations have been developed to offer a safety protection solution in sub-array, array or inverter DC input of photovoltaic installations. Providing protection against overloads as well as short circuits with a minimum fusing current of 1.35·In.

- Utilisation category: gPV
- Min. interrupt rating: 1.35 In
- Standards: IEC/EN 60269-1, IEC/EN60269-6, UL248-1, UL248-19, RoHS compliant


373260


370075


370380


357010




340001


341250

| type | rated current | rated voltage | breaking capacity | class size | fuse | description | price |
|---|---|---|---|---|---|---|---|
| **gPV photovoltaic NH fuse-links** | | | | | **1000 VDC** | | |
| **373215** | 32A | 1000 VDC | 30 kA | gPV | NH1 | photovoltaic fuse-link | **1 302.00** |
| **373225** | 40A | 1000 VDC | 30 kA | gPV | NH1 | photovoltaic fuse-link | **1 302.00** |
| **373230** | 50A | 1000 VDC | 30 kA | gPV | NH1 | photovoltaic fuse-link | **1 302.00** |
| **373235** | 63A | 1000 VDC | 30 kA | gPV | NH1 | photovoltaic fuse-link | **1 302.00** |
| **373240** | 80A | 1000 VDC | 30 kA | gPV | NH1 | photovoltaic fuse-link | **1 302.00** |
| **373245** | 100A | 1000 VDC | 30 kA | gPV | NH1 | photovoltaic fuse-link | **1 302.00** |
| **373250** | 125A | 1000 VDC | 30 kA | gPV | NH1 | photovoltaic fuse-link | **1 302.00** |
| **373255** | 160A | 1000 VDC | 30 kA | gPV | NH1 | photovoltaic fuse-link | **1 302.00** |
| **373260** | 200A | 1000 VDC | 30 kA | gPV | NH1 | photovoltaic fuse-link | **1 302.00** |
| **373360** | 250A | 1000 VDC | 30 kA | gPV | NH2 | photovoltaic fuse-link | **2 016.00** |
| **373425** | 200A | 1000 VDC | 30 kA | gPV | NH3 | photovoltaic fuse-link | **2 173.50** |
| **373435** | 250A | 1000 VDC | 30 kA | gPV | NH3 | photovoltaic fuse-link | **2 173.50** |
| **373445** | 315A | 1000 VDC | 30 kA | gPV | NH3 | photovoltaic fuse-link | **2 173.50** |
| **373450** | 355A | 1000 VDC | 30 kA | gPV | NH3 | photovoltaic fuse-link | **2 415.00** |
| **373455** | 400A | 1000 VDC | 30 kA | gPV | NH3 | photovoltaic fuse-link | **2 415.00** |

*Above NH fuses available at 1500V DC (XL-longer body) available on request*

## gBat Class - Battery storage protection NH fuse-links

**NH gBat** fuse-links are specifically designed for the protection of battery systems. Manufactured with similar techniques as semiconductor fuse-links, providing high speed operation and excellent performance under continuous charge/discharge cycles. Capable to clearing all types of overcurrents, overloads and short-circuits, protecting batteries, cables and installation switchgear.

- Utilisation category: gBAT
- Standards: IEC/EN 60269-1, IEC/EN60269-7, UL248-1, RoHS compliant

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **370035** | 32A | 440 VDC | 30 kA | gBat | NH000 | DIN HRC fuse-link | **328.65** |
| **370045** | 40A | 440 VDC | 30 kA | gBat | NH000 | DIN HRC fuse-link | **334.95** |
| **370050** | 50A | 440 VDC | 30 kA | gBat | NH000 | DIN HRC fuse-link | **342.30** |
| **370055** | 63A | 440 VDC | 30 kA | gBat | NH000 | DIN HRC fuse-link | **357.00** |
| **370060** | 80A | 440 VDC | 30 kA | gBat | NH000 | DIN HRC fuse-link | **374.85** |
| **370065** | 100A | 440 VDC | 30 kA | gBat | NH000 | DIN HRC fuse-link | **397.95** |
| **370070** | 125A | 440 VDC | 30 kA | gBat | NH00 | DIN HRC fuse-link | **514.50** |
| **370075** | 160A | 440 VDC | 30 kA | gBat | NH00 | DIN HRC fuse-link | **569.10** |
| **370260** | 200A | 550 VDC | 30 kA | gBat | NH1 | DIN HRC fuse-link | **849.45** |
| **370270** | 250A | 550 VDC | 30 kA | gBat | NH1 | DIN HRC fuse-link | **981.75** |
| **370370** | 315A | 550 VDC | 30 kA | gBat | NH2 | DIN HRC fuse-link | **1 333.50** |
| **370375** | 355A | 550 VDC | 30 kA | gBat | NH2 | DIN HRC fuse-link | **1 585.50** |
| **370380** | 400A | 550 VDC | 30 kA | gBat | NH2 | DIN HRC fuse-link | **1 617.00** |
| **370465** | 500A | 550 VDC | 30 kA | gBat | NH3 | DIN HRC fuse-link | **2 289.00** |
| **370470** | 630A | 550 VDC | 30 kA | gBat | NH3 | DIN HRC fuse-link | **2 520.00** |

## Accessories for NH fuse-links

### Microswitch for NH fuses *(mounts directly onto fuse-links)*

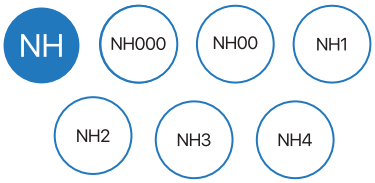
| | | | | |
|---|---|---|---|---|
| **357010** | 5A | 250 VAC | 1-pole | micro switch for all sizes NH fuses | **485.10** |
| **340001** | handle | universal fuse replace/removal handle | | for all sizes NH fuses | **415.80** |

### ST fuse holders for NH PV fuse-links - 1000 VDC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **354172** | 250A | 1000 VDC | 1-pole | gPV | NH1 | photovoltaic fuse base | **456.75** |
| **354175** | 400A | 1000 VDC | 1-pole | gPV | NH2 | photovoltaic fuse base | **924.00** |
| **354180** | 500A | 1000 VDC | 1-pole | gPV | NH3 | photovoltaic fuse base | **1 060.50** |

### Solid NH Neutral Links

| | | | | | | |
|---|---|---|---|---|---|---|
| **341100** | 160A | 690V | 1-pole | NH000/00 | neutral link blades | **150.15** |
| **341250** | 250A | 690V | 1-pole | NH1 | neutral link blades | **229.95** |
| **341400** | 400A | 690V | 1-pole | NH2 | neutral link blades | **273.00** |
| **341630** | 630A | 690V | 1-pole | NH3 | neutral link blades | **346.50** |
| **340125** | 1250A | 690V | 1-pole | NH4 | neutral link blades | **1 281.00** |




## Semiconductor NH fuse-links

Semiconductor fuse-links designed for protection of semiconductors *(diodes, thyristors, triacs, etc)* used in power rectifiers, UPS, converters, motor drives, soft starters, solid state relays, photovoltaic inverters, welding inverters and any application where semiconductor protection is required.

**Specification:**

- Rated voltage: 690 VAC
- Breaking capacity: 100 kA
- Standards: IEC/EN 60269-1, IEC/EN 60269-4, UL248 standard


371270


365070

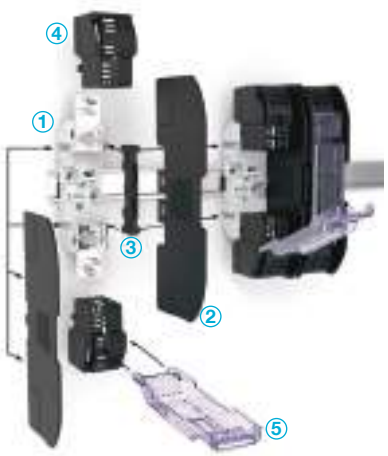

365280


365395

| type | rated current | rated voltage | breaking capacity | class size | fuse | description | price |
|---|---|---|---|---|---|---|---|
| **RAPIDPLUS NH gS -** *high-speed fuse-links for semiconductors* | | | | | | | |
| The NH gS series fuses are the optimal choice for ensuring the safety and reliability of electrical systems that require both semiconductor protection and full circuit coverage. **RAPIDPLUS NH gS** fuse-links are capable of clearing all types of overcurrents, overloads and short-circuits, protecting semiconductors, cables and associated switchgear in the installation. | | | | | | | |
| **371025** | 20A | 690V | 100 kA | gS | NH000 | semiconductor fuse-link | **529.20** |
| **371030** | 25A | 690V | 100 kA | gS | NH000 | semiconductor fuse-link | **422.10** |
| **371035** | 32A | 690V | 100 kA | gS | NH000 | semiconductor fuse-link | **428.40** |
| **371045** | 40A | 690V | 100 kA | gS | NH000 | semiconductor fuse-link | **435.75** |
| **371050** | 50A | 690V | 100 kA | gS | NH000 | semiconductor fuse-link | **435.75** |
| **371055** | 63A | 690V | 100 kA | gS | NH000 | semiconductor fuse-link | **462.00** |
| **371060** | 80A | 690V | 100 kA | gS | NH000 | semiconductor fuse-link | **496.65** |
| **371065** | 100A | 690V | 100 kA | gS | NH000 | semiconductor fuse-link | **520.80** |
| **371070** | 125A | 690V | 100 kA | gS | NH00 | semiconductor fuse-link | **655.20** |
| **371075** | 160A | 690V | 100 kA | gS | NH00 | semiconductor fuse-link | **706.65** |
| **371260** | 200A | 690V | 100 kA | gS | NH1 | semiconductor fuse-link | **1 010.10** |
| **371270** | 250A | 690V | 100 kA | gS | NH1 | semiconductor fuse-link | **1 144.50** |
| **371370** | 315A | 690V | 100 kA | gS | NH2 | semiconductor fuse-link | **1 711.50** |
| **371375** | 355A | 690V | 100 kA | gS | NH2 | semiconductor fuse-link | **1 816.50** |
| **371380** | 400A | 690V | 100 kA | gS | NH2 | semiconductor fuse-link | **2 016.00** |
| **371465** | 500A | 690V | 100 kA | gS | NH3 | semiconductor fuse-link | **2 635.50** |
| **371470** | 630A | 690V | 100 kA | gS | NH3 | semiconductor fuse-link | **3 181.50** |
| *Fuse bases for above fuse-links (see next page)* | | | | | | | |
| **RAPIDPLUS NH aR -** *high speed fuse-links for semiconductors* | | | | | | | |
| The NH aR series fuses are the go-to choice for ensuring the fast and reliable protection of semiconductor devices, offering specialized short-circuit protection in critical electrical systems. **RAPIDPLUS aR** fuses Intended for clearing short-circuits, specifically designed to have very low I²t values with reduced arc voltages, guaranteeing optimum semiconductor protection. **Specification:** • Rated voltage: 690 VAC • Breaking capacity: 120 kA • Standards: IEC/EN 60269-1, IEC/EN 60269-4, UL248 standard | | | | | | | |
| **365020** | 16A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **462.00** |
| **365025** | 20A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **464.10** |
| **365030** | 25A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **465.15** |
| **365035** | 32A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **454.65** |
| **365045** | 40A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **459.90** |
| **365050** | 50A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **476.70** |
| **365055** | 63A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **476.70** |
| **365060** | 80A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **492.45** |
| **365065** | 100A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **516.60** |
| **365070** | 125A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **549.15** |
| **365075** | 160A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **672.00** |
| **365080** | 200A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **708.75** |
| **365085** | 250A | 690V | 120 kA | aR | NH000 | semiconductor fuse-link | **778.05** |
| **365270** | 250A | 690V | 120 kA | aR | NH1 | semiconductor fuse-link | **916.65** |
| **365280** | 315A | 690V | 120 kA | aR | NH1 | semiconductor fuse-link | **995.40** |
| **365282** | 350A | 690V | 120 kA | aR | NH1 | semiconductor fuse-link | **1 060.50** |
| **365290** | 400A | 690V | 120 kA | aR | NH1 | semiconductor fuse-link | **1 197.00** |
| **365380** | 400A | 690V | 120 kA | aR | NH2 | semiconductor fuse-link | **1 470.00** |
| **365390** | 500A | 690V | 120 kA | aR | NH2 | semiconductor fuse-link | **1 617.00** |
| **365395** | 630A | 690V | 120 kA | aR | NH2 | semiconductor fuse-link | **1 911.00** |
| **365475** | 800A | 690V | 120 kA | aR | NH3 | semiconductor fuse-link | **2 667.00** |
| **365485** | 1000A | 690V | 120 kA | aR | NH3 | semiconductor fuse-link | **3 118.50** |
| *For semi-conductor derating tables, see* ***Annex-7*** | | | | | | | |



Above ZAR prices do not include VAT. E&OE



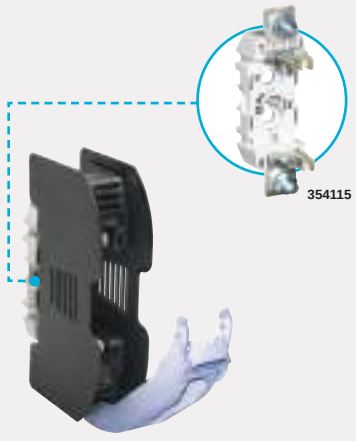

## ST series - Fuse bases for NH fuse-links

- Rated voltage: 690/800V
- Self-extinguishing polyamide body / silver-plated copper contacts
- Standards: IEC/EN 60269-1, IEC/EN 60269-2, DIN43620


353102


326250


325250


354115

| type | rated current | for fuse size | poles | description | qty per pack | price *(per pack)* |
|---|---|---|---|---|---|---|
| **ST series NH fuse bases** | | | | | | |
| **Single pole** ① | | | | | | |
| **354115** | 160A | NH000/00 | 1-pole | industrial NH fuse base | 1 | **132.30** |
| **352115*** | 160A | NH000/00 | 1-pole | industrial NH fuse base | 1 | **145.95** |
| **352300** | 250A | NH1 | 1-pole | industrial NH fuse base | 1 | **389.55** |
| **352400** | 400A | NH2 | 1-pole | industrial NH fuse base | 1 | **669.90** |
| **352630** | 630A | NH3 | 1-pole | industrial NH fuse base | 1 | **855.75** |
| **354125** | 1250A | NH4 | 1-pole | industrial NH fuse base | 1 | **3 349.50** |
| **Three pole** *(supplied with separating phase barriers between phases)* ① | | | | | | |
| **353102*** | 160A | NH000/00 | 3-pole | industrial NH fuse base | 1 | **424.20** |
| **353300** | 250A | NH1 | 3-pole | industrial NH fuse base | 1 | **1 228.50** |
| **353400** | 400A | NH2 | 3-pole | industrial NH fuse base | 1 | **2 236.50** |
| **353630** | 630A | NH3 | 3-pole | industrial NH fuse base | 1 | **2 604.00** |

* *DIN-rail or chassis mountable*

| | | | | | | |
|---|---|---|---|---|---|---|
| **NH fuse holder accessories** | | | | | | |
| **Sectionable neutral NH bases** | | | | | | |
| • Neutral link base | | | *(can be mounted directly onto sides of fuse base)* | | | |
| **334103** | 160A | NH00 | 1-pole | sectionable neutral terminal | 1 | **150.15** |
| **334160** | 250A | NH1 | 1-pole | sectionable neutral terminal | 1 | **200.55** |
| **334251** | 630A | NH3 | 1-pole | sectionable neutral terminal | 1 | **340.20** |
| **Partition walls -** *(NH00/1/2/3 require connectors to mount)* ② | | | | | | |
| **326100** | 160A | NH00 | | partition walls for fuse bases | 2 | **74.55** |
| **326200** | 200A | NH1 | | partition walls for fuse bases | 2 | **130.20** |
| **326250** | 250A | NH2 | | partition walls for fuse bases | 2 | **139.65** |
| **326630** | 630A | NH3 | | partition walls for fuse bases | 2 | **262.50** |
| **343125*** | 1250A | NH4 | | partition walls for fuse bases | 1 | **244.65** |
| * **343125** *screws directly onto chassis plate (does not mount onto fuse base)* | | | | | | |
| **Connectors -** *(to connect two bases together - accepts partition wall)* ③ | | | | | | |
| **325100** | 160A | NH00 | | separators for fuse bases | 2 | **31.82** |
| **325250** | 250A | NH1 | | separators for fuse bases | 2 | **59.85** |
| **325400** | 400A | NH2 | | separators for fuse bases | 2 | **56.70** |
| **325630** | 630A | NH3 | | separators for fuse bases | 2 | **84.00** |
| **Terminal covers -** *(to protect connection terminals of fuse holders)* ④ | | | | | | |
| **325000** | 160A | NH00 | 1-pole | terminal cover for bases | 6 | **168.00** |
| **325005** | 250A | NH1 | 1-pole | terminal cover for bases | 6 | **253.05** |
| **325003** | 400A | NH2 | 1-pole | terminal cover for bases | 6 | **369.60** |
| **325007** | 630A | NH3 | 1-pole | terminal cover for bases | 6 | **619.50** |
| **Fuse-link covers -** *(connects onto terminal covers)* ⑤ | | | | | | |
| **325010** | 160A | NH00 | | hinged covers for fuse-link | 3 | **121.80** |
| **325018** | 160A | NH1 | | hinged covers for fuse-link | 3 | **103.95** |
| **325020** | 250A | NH2 | | hinged covers for fuse-link | 3 | **182.70** |
| **325025** | 630A | NH3 | | hinged covers for fuse-link | 3 | **264.60** |

## Complete fuse base protection kits *(for fuse and terminal insulation protection IP20)*

Fuse base kits offer a versatile and secure solution for mounting NH fuses, with comprehensive protection features that cater to a wide range of current ratings

- Comprises - partition walls - terminal cover - fuse cover

| | | | | | | |
|---|---|---|---|---|---|---|
| **325009*** | 160A | NH00 | 3-pole | integral terminal cover | 1 | **132.30** |
| **325030** | 160A | NH00 | 1-pole | IP20 full protection kit | 1 | **175.35** |
| **325042** | 250A | NH1 | 3-pole | IP20 full protection kit | 1 | **622.65** |
| **325046** | 400A | NH2 | 3-pole | IP20 full protection kit | 1 | **648.90** |
| **325051** | 630A | NH3 | 3-pole | IP20 full protection kit | 1 | **1 239.00** |

* Partition wall incorporated, *fuse covers **325010** to be ordered separately*

## Energy storage system fuses - 1500 VDC

ESS fuses are designed specifically for DC networks with high voltage and short circuit levels. Developed to meet all requirements in Energy Storage applications, ensuring optimal protection, increased reliability and consistent performance over time, ensuring optimal protection of battery racks and connection panels against short circuits and overloads, surpassing protection and safety industry standards.

- For installations with potential short-circuit currents of up to 250kA and continuous voltages of up to 1500 VDC
- Silver-based composition protects from premature ageing, offering increased reliability ensuring consistent, premium performance over time for Energy Storage applications.

Conformity to standards: UL248-13, CSA C22.2 No. 248.1-11, IEC 60269-1 /-4/-7, GB/T 13539.4



HCHVT1500...59E



HCHVT1500...74E



HCHVT1500...159E



HCMS02501

| type | rated current | rated voltage | breaking capacity | fuse class | fuse size | description | price |
|---|---|---|---|---|---|---|---|
| **Bolted blade fuses** *(with striker)* | | | **160 - 1200A** | | | | |
| **250kA high voltage 1500 VDC fuses** | | | | | | | |
| **HCHVT1500-160B-59E** | 160A | 1500 VDC | 250kA | aR | 2 | battery storage fuse | **2 278.50** |
| **HCHVT1500-200B-59E** | 200A | 1500 VDC | 250kA | aR | 2 | battery storage fuse | **2 394.00** |
| **HCHVT1500-250B-59E** | 250A | 1500 VDC | 250kA | aR | 2 | battery storage fuse | **2 520.00** |
| **HCHVT1500-315B-59E** | 315A | 1500 VDC | 250kA | aR | 2 | battery storage fuse | **2 698.50** |
| **HCHVT1500-350B-59E** | 350A | 1500 VDC | 250kA | aR | 2 | battery storage fuse | **2 856.00** |
| **HCHVT1500-400B-59E** | 400A | 1500 VDC | 250kA | aR | 2 | battery storage fuse | **3 034.50** |
| **HCHVT1500-500B-74E** | 500A | 1500 VDC | 250kA | aR | 3 | battery storage fuse | **3 223.50** |
| **HCHVT1500-550B-74E** | 550A | 1500 VDC | 250kA | aR | 3 | battery storage fuse | **3 328.50** |
| **HCHVT1500-630B-74E** | 630A | 1500 VDC | 250kA | aR | 3 | battery storage fuse | **3 475.50** |
| **HCHVT1500-700B-74E** | 700A | 1500 VDC | 250kA | aR | 3 | battery storage fuse | **3 769.50** |
| **HCHVT1500-800B-74E** | 800A | 1500 VDC | 250kA | aR | 3 | battery storage fuse | **4 263.00** |
| **HCHVT1500-900B-74E** | 900A | 1500 VDC | 250kA | aR | 3 | battery storage fuse | **5 628.00** |
| **HCHVT1500-1000B-74E** | 1000A | 1500 VDC | 250kA | aR | 3 | battery storage fuse | **6 174.00** |
| **HCHVT1500-1100B-74E** | 1100A | 1500 VDC | 250kA | aR | 3 | battery storage fuse | **6 709.50** |
| **HCHVT1500-1200B-74E** | 1200A | 1500 VDC | 250kA | aR | 3 | battery storage fuse | **7 266.00** |
| **Flush end fuses** *(with striker)* | | | **1100 - 3000A** | | | | |
| **250kA high voltage 1500 VDC fuses** | | | | | | | |
| **HCHVT1500-1100S-105E** | 1100A | 1500 VDC | 250kA | aR | 4 | battery storage fuse | **9 124.50** |
| **HCHVT1500-1250S-105E** | 1250A | 1500 VDC | 250kA | aR | 4 | battery storage fuse | **9 828.00** |
| **HCHVT1500-1350S-105E** | 1350A | 1500 VDC | 250kA | aR | 4 | battery storage fuse | **10 00.00** |
| **HCHVT1500-1500S-105E** | 1500A | 1500 VDC | 250kA | aR | 4 | battery storage fuse | **11 130.00** |
| **HCHVT1500-1600S-105E** | 1600A | 1500 VDC | 250kA | aR | 4 | battery storage fuse | **11 655.00** |
| **HCHVT1500-1800S-105E** | 1800A | 1500 VDC | 250kA | aR | 4 | battery storage fuse | **12 705.00** |
| **HCHVT1500-2000A-159E** | 2000A | 1500 VDC | 250kA | aR | 5 | battery storage fuse | **19 215.00** |
| **HCHVT1500-2500A-159E** | 2500A | 1500 VDC | 250kA | aR | 5 | battery storage fuse | **23 205.00** |
| **HCHVT1500-3000A-159E** | 3000A | 1500 VDC | 250kA | aR | 5 | battery storage fuse | **26 250.00** |

### Micro switch for above fuses

Micro switch simply clips onto support on the fuse to provide remote trip indication.

Rated current: 2A - 250 VAC
Dimensions: (H) 34 x (W) 40 x (D) 16 mm

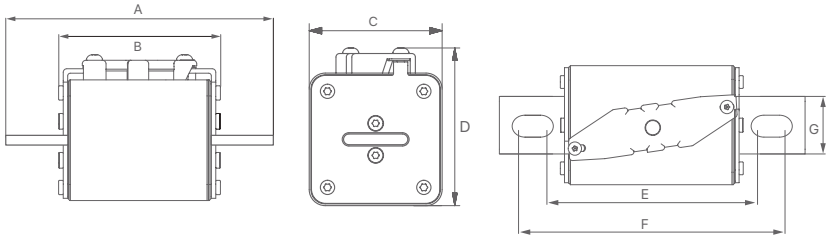
| | | | | | |
|---|---|---|---|---|---|
| **HCMS02501** | 1 C/O | micro switch | fuse mounting | 1 x changeover micro switch | **90.30** |

**Dimensions:**

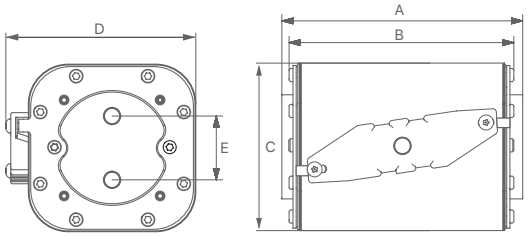
| Fuse Size | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| dimensions (mm) | | | | | | | |
| **Bolted blade fuses (with striker)** | | | | | | | |
| 2 | 207 | 140 | 59 | 73 | 163 | 182 | 30 |
| 3 | 218 | 140 | 75 | 89 | 172 | 192 | 40 |
| **Flush end fuses (with striker)** | | | | | | | |
| 4 | 153 | 137 | 105 | 122 | 40 | – | – |
| 5 | 159 | 144 | 163 | 180 | 63 | – | – |

### Dimensions:

**Bolted -** Mount




**Flush -** Mount






Above ZAR prices do not include VAT. E&OE

# INOSYS LBS Series

## High-Performance Switches for Superior Safety

The INOSYS LBS Series offers advanced load break switches specifically designed for demanding DC applications, including renewable energy systems like photovoltaic (PV) and energy storage (ESS). These switches ensure reliable and safe disconnection of electrical circuits in high-voltage environments. Capable of handling up to 1500 VDC in just 2 poles, the INOSYS LBS stands out with its robust design, performing reliably even in extreme conditions. Ideal for critical power applications, and suited for the DC-PV2 utilisation.



- High performance switching
- Focus on Safety
- Application tested design
- Easy integration & modular solution

For a future that will be more **Electric**, more **Sustainable** and more focused on **DC**



### Typical applications

- Renewable energy (PV, Battery protection, Energy storage)
- DC process, Drives and Power Electronics
- DC distribution
- E-mobility (EV, Marine)

socomec
Innovative Power Solutions



63-823191-021



63-823267-001



63-823234-041



63-001417-002

## Horizontal fuse switch disconnectors

RBK fuse switch disconnectors are designed for distribution of electricity and protection of electrical equipment against short circuits and overloads using industrial NH fuse-links.
Intended for installation in low-voltage distribution boards, cable and metering cabinets.

- Rated operational voltage Un: 690 V
- Insulation voltage Ui: 1000 V
- Rated impulse withstand voltage Uimp: 8 kV
- Lid lock and lid seal: *(with optional accessories)*
- Voltage test facility: *(performed through test holes in fuselink cover)*
- Protection degree: IP 20 - (IP30 for RBP and RBK 1 units)
- Standards: IEC/EN 60947-1, IEC/EN 60947-3
- Consult product datasheet for DC utilisation category

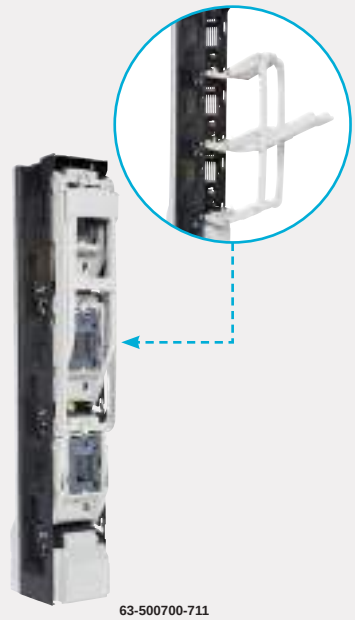
| type | model | No. poles | fuse size | rated current | cable terminal | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **RBK proS NH - Fuse switch disconnectors** for installation on chassis plate | | | | | | | | | |
| • Mounting on plate/chassis by screws<br>• Made of fibre glass reinforced, halogen-free flame-retardant polyamide | | | | | | | | | |
| **63-823191-021** | RBK 000 pro-M | 3-pole | 000 | 160A | M8 | 181 | 89 | 92 | **878.85** |
| **63-823256-121** | RBK 00 pro-M | 3-pole | 00 | 160A | M8 | 182 | 106 | 81 | **740.25** |
| **63-811748-021** | RBK 1 pro-M | 3-pole | 1 | 250A | M10 | 269 | 180 | 111 | **2 992.50** |
| **63-811685-061** | RBK 2 pro-M | 3-pole | 2 | 400A | M10 | 298 | 208 | 130 | **3 465.00** |
| **63-811761-021** | RBK 3 pro-M | 3-pole | 3 | 630A | M12 | 307 | 250 | 144 | **4 767.00** |
| **RBP proS** *(53 mm wide)* **Compact fuse switch disconnectors 000**<br>Slimline - width dimensions equal to half the width of RBK 00 pro, permitting more switches to be mounted in the same space.<br>• Rated impulse withstand voltage Uimp: 6 kV | | | | | | | | | |
| **63-823267-001** | RBP 000 pro | 3-pole | 000 | 125A | clamp | 216 | 53 | 83 | **1 020.60** |
| **RBK proS - Fuse switch disconnectors** for installation on 60 mm busbar system | | | | | | | | | |
| • Mounting directly onto 60 mm busbar system - using hooked clamps within the fuse base<br>• Made of fibreglass reinforced, halogen-free, flame-retardant polyamide<br>• Termination: Bottom of switch *(top terminals available on request)* | | | | | | | | | |
| **63-823234-041** | RBK 000-SD-M | 3-pole | 000 | 160A | M8 | 191 | 89 | 112 | **1 501.50** |
| **63-823259-141** | RBK 00 pro-SD-M | 3-pole | 00 | 160A | M8 | 214 | 106 | 110 | **1 459.50** |
| **63-811750-061** | RBK 1 pro-SD-M | 3-pole | 1 | 250A | M10 | 243 | 180 | 140 | **3 591.00** |
| **63-811686-061** | RBK 2 pro-SD-M | 3-pole | 2 | 400A | M10 | 298 | 208 | 154 | **5 344.50** |
| **63-028802-003** | RBK 3 pro-SD-M | 3-pole | 3 | 630A | M12 | 307 | 250 | 137 | **6 615.00** |
| **RBP proS - Slimline** *(53 mm wide)* **Compact fuse switch disconnectors 000**<br>Slimline width dimensions equal to half the width of RBK 00 pro, permitting more switches to be mounted in the same space. | | | | | | | | | |
| **63-823427-002** | RBP 000 pro-SD | 3-pole | 000 | 125A | clamp | 214 | 53 | 108 | **1 354.50** |
| **Accessories for above RBK fuse switch disconnectors** | | | | | | | | | |
| **1115296311T** | Auxiliary contact | 000/00 | | | switch for door position status | | | | **116.55** |
| **1115296316** | Auxiliary contact | 1/2/3 | | | switch for door position status | | | | **156.45** |
| **51-930160-011** | extended cover | 000 | | | termination extended cover *(25 mm)* | | | | **71.40** |
| **51-930499-011** | extended cover | 00 | | | termination extended cover *(25 mm)* | | | | **71.40** |
| **PBS - Vertical fuse rails** for installation on 185 mm busbar system | | | | | | | | | |
| PBS fuse bases are designed for electrical distribution and protection against short circuits and overloads. Intended for direct installation on horizontal bus bar systems. Due to their modern, compact design installing is simple, providing exceptional space saving in distribution boards<br>• Made of fibreglass reinforced, halogen-free, flame-retardant polyamide<br>• IP 20 touch protection with fuse-link shrouds | | | | | | | | | |
| **63-001417-002** | PBS 00-SM | 3-pole | 00 | 160A | M8 | 674 | 49 | 162.5 | **1 764.00** |
| **63-500600-601** | PBS 1-M | 3-pole | 1 | 250A | M12 | 657 | 100 | 144 | **2 898.00** |
| **63-500600-611** | PBS 2-M | 3-pole | 2 | 400A | M12 | 657 | 100 | 144 | **3 181.50** |
| **63-500600-621** | PBS 3-M | 3-pole | 3 | 630A | M12 | 657 | 100 | 144 | **3 990.00** |
| **Accessories for fuse rails** | | | | | | | | | |
| **51-001312-001** | fuse-link shroud | 1-pole | 00 | | for PBS 00 fuse rail *(each)* | | | | **59.85** |
| **51-500600-108** | fuse-link shroud | 1-pole | 1,2,3 | | for PBS 1/2/3 fuse rail *(each)* | | | | **98.70** |



Above ZAR prices do not include VAT. E&OE



63-811628-041



63-500700-711



63-073821-001

## ARS pro - Vertical fuse switch disconnectors

Vertical mounting fuse switch disconnectors are designed for distribution of electricity and protection against short circuits and overloads in three-phase alternative current circuits.
They are intended for direct installation on vertical busbar systems

- Making and breaking operations should be done with determined movement,
- Parallel moving, double contact system,
- Designed for installation on to 60 mm, 100 mm or 185 mm busbar systems

- Rated operational voltage Un: 690 V
- Insulation voltage Ui: 1000 V
- Rated impulse withstand voltage Uimp: 8 kV
- Padlockable: in parked and closed position
- Voltage test facility: *(performed through test holes in fuse-link cover)*
- Protection degree: IP 30
- Standards: IEC/EN 60947-1, IEC/EN 60947-3

| type | model | No. poles | fuse size | rated current | cable terminal | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **ARS pro - Vertical mounted fuse switch disconnectors** | | | | | | | | | |
| ARS pro vertical fuse switch disconnectors are designed for electrical distribution and protection against short circuits and overloads in three-phase AC circuits. For direct installation on horizontal or vertical busbar systems in applications requiring reliability and safety for low voltage distribution boards, transformer substations, industrial assemblies and cable cabinets. | | | | | | | | | |
| • Switching 3-poles simultaneously | | | | | | | | | |
| **ARS 00/60 - Fuse switch disconnectors for installation on 60 mm busbar system** | | | | | | | | | |
| **63-002354-001** | ARS 00/60 M-pro | 3-pole | 00 | 160A | M8 | 401 | 50 | 132 | **2 184.00** |
| **ARS 00/100 - Fuse switch disconnectors for installation on 100 mm busbar system** | | | | | | | | | |
| **63-811628-041** | ARS 00/100 M-pro | 3-pole | 00 | 160A | M8 | 423 | 50 | 127 | **1 774.50** |

## **ARS evo - Fuse switch disconnectors** for installation on 185 mm busbar system

The ARS evo range of fuse switch disconnectors are designed to incorporate the latest technology and many years of switchgear manufacturing experience, offering outstanding safety, functionality and flexibility.

Safety: Stable and safe power distribution network
Parking position
Fuse-link removable without touching it
Improved heat dissipation

Functionality: Simple to install
Non-parallel disconnector
3-pole simultaneous switching *(individual pole switching available on request)*

Flexibility: Retractable handle
Reversibility - top/bottom cable termination connection
Padlockable in open or closed position

- Rated operational voltage Un: 690 V
- Insulation voltage Ui: 1000 V
- Rated impulse withstand voltage Uimp: 8kV (ARS 00) 12kV (ARS2/3)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **63-500750-703** | ARS 00-3-M evo | 3-pole | 00 | 160A | M8 | 684 | 50 | 155 | **2 247.00** |
| **63-500700-711** | ARS 2-6-M evo | 3-pole | 2 | 400A | M12 | 667 | 100 | 174 | **5 166.00** |
| **63-500700-721** | ARS 3-6-M evo | 3-pole | 3 | 630A | M12 | 667 | 100 | 174 | **5 680.50** |

## **smartARS pro-PV AC 800V** for installation on 185 mm busbar system - PV solution

New smartARS pro-PV switch fuse disconnector developed to meet protection requirements on the output side of new generation photovoltaic inverters with an output voltage of 800 VAC.

- Rated operational voltage Un: 800 V
- Insulation voltage Ui: 1000 V
- Rated impulse withstand voltage Uimp: 8kV (00) / 12kV (2/3)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **63-073821-001** | smartARS 00 pro-PV | 3-P | 00 | 80A | M8 | 684 | 50 | 151 | **2 971.50** |
| **63-073822-003** | smartARS 2-M pro-PV | 3-P | 1.2 | 200A | M12 | 686 | 99 | 19 | **5 796.00** |
| **63-073822-004** | smartARS 3-M pro-PV | 3-P | 3 | 400A | M12 | 686 | 99 | 191 | **6 310.50** |
| **Accessories** | | | | | | | | | |
| **1115296318T** | 1 NO micro switch | | 2/3 | – | – | – | – | – | **121.80** |
| **1115296319T** | 1 NC micro switch | | 2/3 | – | – | – | – | – | **121.80** |
| **51-500700-109** | terminal shroud | | 2/3 | – | – | – | – | – | **89.25** |


143017


143018


143119


106300


106538

## MULTIBLOC series - NH-fuse switch disconnector *(for panel mounting)*

- Parking position of the switch cover *(even with inserted fuse-links)*
- Modular terminal covers can be extended as required
- Lid lock and lid seal *(with optional accessories)*

| Utilization category to IEC/EN 60947-3 | 00 | 1 | |
|---|---|---|---|
| Ue: AC 400V; Ie = | 160A | 250A | AC 23 B |
| Ue: AC 500V; Ie = | 160A | 250A | AC 22 B |
| Ue: AC 690V; Ie = | 125A | 200A | AC 21 B |
| Ue: DC 220V; Ie = | 160A | 250A | DC 22 B |

| type | No. poles | fuse size | max. current | cable terminal | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **NH - Fuse switch disconnector** *(panel mounting)* **IP30** | | | | | | | | | |
| • Rated operational voltage: 690 V • Rated impulse withstand Uimp: 8 kV | | | | | • Insulation voltage Ui: 1000 V | | | | |
| **NH00 - Fuse switch disconnector** | | | | | | | | | |
| **143017** | 1-pole | 00 | 160A | M8 | fuse switch disconnector | 184 | 42 | 84 | **588.00** |
| **143018** | 2-pole | 00 | 160A | M8 | fuse switch disconnector | 184 | 84 | 84 | **1 029.00** |
| **NH1 - Fuse switch disconnector** | | | | | | | | | |
| **143119** | 1-pole | 1 | 250A | M10 | fuse switch disconnector | 184 | 71 | 84 | **1 449.00** |
| **143118** | 2-pole | 1 | 250A | M10 | fuse switch disconnector | 184 | 142 | 84 | **2 898.00** |
| **Accessories for above switch disconnectors** | | | | | | | | | |
| **140149** | 1/2-pole | 00 | | | cable termination cover for NH00 switches | | | *(2 pcs)* | **198.45** |
| **140354** | 1/2-pole | 1 | | | cable termination cover for NH1 switches | | | *(2 pcs)* | **391.65** |
| **140155** | 1/2-pole | 00/1 | | | cover sealing set for switch disconnector | | | sizes 00 & 1 | **357.00** |
| **140852** | 1/2-pole | | | | monitoring switch for door position status | | | all sizes | **451.50** |
| **60 mm busbar system** | | | | | | | | | |
| **Busbar supports** | | | | | *for busbars (W) 12 - 30 mm x (D) 5/10 mm* | | | | |
| **106300** | 3-pole | | | | busbar support for 12 - 30 mm x 5/10 mm bars | 185 | 17 | 43 | **442.05** |
| **106302*** | 1-pole | | | | busbar support for 12 - 30 mm x 5/10 mm bars | 77 | 17 | 43 | **354.90** |
| * *1-pole unit can be attached for two pole or a 3-pole to make a 4-pole support* | | | | | | | | | |
| **Busbar terminal protection covers** | | | | | | | | | |
| **106096** | 3-pole | | | | busbar protection cover | 16…50 mm² | 201 | 54 | 44 | **640.50** |
| **106097** | 3-pole | | | | busbar protection cover | 16…70 mm² | 201 | 108 | 80 | **728.70** |
| **106098** | 3-pole | | | | busbar protection cover | 16…185 mm² | 201 | 108 | 80 | **782.25** |
| **Busbar mounting terminals** | | | | | | | | | |
| **116053** | 315A | | | | 5 mm terminal | 10…50 mm² | | for ***106096*** | **77.70** |
| **116054** | 400A | | | | 5 mm terminal | 16…70 mm² | | for ***106097*** | **89.25** |
| **116063** | 315A | | | | 10 mm terminal | 16…70 mm² | | for ***106096*** | **90.30** |
| **116064** | 400A | | | | 10 mm terminal | 16…70 mm² | | for ***106097*** | **108.15** |
| **116065** | 440A | | | | 10 mm terminal | 16…120 mm² | | for ***106098*** | **186.90** |
| **Component adaptors** | | | | | *for direct mounting on 60 mm system busbars* | | | | |
| **106521** | 3-pole | 1 rail | 25A | 4 mm² | component adaptor | 207 | 45 | – | **964.95** |
| **106523** | 3-pole | 2 rails | 25A | 4 mm² | component adaptor | 260 | 45 | – | **1 260.00** |
| **106526** | 3-pole | 1 rail | 32A | 6 mm² | component adaptor | 207 | 54 | – | **1 155.00** |
| **106528** | 3-pole | 2 rails | 32A | 6 mm² | component adaptor | 260 | 54 | – | **1 438.50** |
| **106530** | 3-pole | 1 rail | 32A | 6 mm² | component adaptor | 207 | 72 | – | **1 459.50** |
| **106531** | 3-pole | 2 rails | 32A | 6 mm² | component adaptor | 260 | 72 | – | **1 606.50** |
| **106533** | 3-pole | 1 rail | 63A | 10 mm² | component adaptor | 207 | 54 | – | **1 323.00** |
| **106535** | 3-pole | 2 rails | 63A | 10 mm² | component adaptor | 260 | 54 | – | **1 491.00** |
| **106537** | 3-pole | 1 rail | 63A | 10 mm² | component adaptor | 207 | 72 | – | **1 501.50** |
| **106538** | 3-pole | 2 rails | 63A | 10 mm² | component adaptor | 260 | 72 | – | **1 575.00** |
| **106539** | 3-pole | 2 rails | 63A | 10 mm² | component adaptor | 207 | 81 | – | **1 743.00** |
| **106544** | 3-pole | 2 rails | 80A | 16 mm² | component adaptor | 260 | 72 | – | **2 005.50** |
| **Protection cover for 60 mm system** | | | | | | | | | |
| **126074** | 3-pole | | | | bar mounted cover support bracket | | | | **304.50** |
| **126075** | 3-pole | | | | panel front cover protection 1000 mm | | | 2 meter | **1 543.50** |
| **Busbar support for 100 and 185 mm system** | | | | | | | | | |
| **188100** | 3-pole | 100 mm | | | busbar support for 30 - 60 mm x 10 mm bars | 324 | 28 | 50 | **1 060.50** |
| **188101** | 3-pole | 185 mm | | | busbar support for 30 - 120 mm x 10 mm bars | 573 | 28 | 50 | **1 365.00** |
| **188102** | 1-pole | 100/185 | | | busbar support for 30 - 120 mm x 10 mm bars | 224 | 25 | 50 | **1 000.65** |



Above ZAR prices do not include VAT. E&OE


FGN...


FSA


FSS...


FSDCP...


FSFP...


FSK...


FMF...


FTM...

## Industrial protection HRC fuses

Rated voltage: 500 VAC
Rated breaking capacity: 80 kA
Standards specification: BS88-2, IEC 60269-2-1
Fuse class: gG/Q1

| type | rated current | BS88 ref. | rated voltage | breaking capacity | fixing centres | body dia. (mm) | type (GEC) | price |
|---|---|---|---|---|---|---|---|---|
| **Off-set blade tag fuses (F1)** | | | | | | | | |
| • Body length 60 mm | | | | | | | | |
| **FGN 02A** | 2A | F1/NP | 500V | 80 kA | offset blade | 14.2 mm | NS | **33.81** |
| **FGN 04A** | 4A | F1/NP | 500V | 80 kA | offset blade | 14.2 mm | NS | **33.81** |
| **FGN 06A** | 6A | F1/NP | 500V | 80 kA | offset blade | 14.2 mm | NS | **33.81** |
| **FGN 10A** | 10A | F1/NP | 500V | 80 kA | offset blade | 14.2 mm | NS | **33.81** |
| **FGN 16A** | 16A | F1/NP | 500V | 80 kA | offset blade | 14.2 mm | NS | **33.81** |
| **FGN 20A** | 20A | F1/NP | 500V | 80 kA | offset blade | 14.2 mm | NS | **33.81** |
| **FGN 25A** | 25A | F1/NP | 500V | 80 kA | offset blade | 14.2 mm | NS | **33.81** |
| **FGN 32A** | 32A | F1/NP | 500V | 80 kA | offset blade | 14.2 mm | NS | **33.81** |
| **Off-set bolted tag (A2)** | | | | | | | | |
| • Body length 86 mm | | | | | | | | |
| **FSA 02A** | 2A | A2 | 500V | 80 kA | 73 mm | 21.5 mm | TIA | **57.75** |
| **FSA 04A** | 4A | A2 | 500V | 80 kA | 73 mm | 21.5 mm | TIA | **57.75** |
| **FSA 06A** | 6A | A2 | 500V | 80 kA | 73 mm | 21.5 mm | TIA | **57.75** |
| **FSA 10A** | 10A | A2 | 500V | 80 kA | 73 mm | 21.5 mm | TIA | **57.75** |
| **FSA 16A** | 16A | A2 | 500V | 80 kA | 73 mm | 21.5 mm | TIA | **57.75** |
| **FSA 20A** | 20A | A2 | 500V | 80 kA | 73 mm | 21.5 mm | TIA | **57.75** |
| **FSA 25A** | 25A | A2 | 500V | 80 kA | 73 mm | 21.5 mm | TIA | **57.75** |
| **FSA 32A** | 32A | A2 | 500V | 80 kA | 73 mm | 21.5 mm | TIA | **57.75** |
| **Off-set bolted tag (A3)** | | | | | | | | |
| • Body length 90 mm | | | | | | | | |
| **FSS 40** | 40A | A3 | 500V | 80 kA | 73 mm | 21.5 mm | TIS | **67.20** |
| **FSS 50** | 50A | A3 | 500V | 80 kA | 73 mm | 21.5 mm | TIS | **67.20** |
| **FSS 63** | 63A | A3 | 500V | 80 kA | 73 mm | 21.5 mm | TIS | **67.20** |
| **Off-set bolted tag (A4)** | | | | | | | | |
| • Body length 111 mm | | | | | | | | |
| **FSDCP 63** | 63A | A4 | 500V | 80kA | 94 mm | 32 mm | TCP | **142.80** |
| **FSDCP 80** | 80A | A4 | 500V | 80 kA | 94 mm | 32 mm | TCP | **142.80** |
| **FSDCP 100** | 100A | A4 | 500V | 80 kA | 94 mm | 32 mm | TCP | **142.80** |
| **Off-set bolted tag (A4)** | | | | | | | | |
| • Body length 111 mm | | | | | | | | |
| **FSFP 125** | 125A | A4a | 500V | 80 kA | 94 mm | 39.5 mm | TFP | **208.95** |
| **FSFP 160** | 160A | A4a | 500V | 80 kA | 94 mm | 39.5 mm | TFP | **208.95** |
| **FSFP 200** | 200A | A4a | 500V | 80 kA | 94 mm | 39.5 mm | TFP | **208.95** |
| **Central bolted tag (B2)** | | | | | | | | |
| • Body length 132 mm | | | | | | | | |
| **FSF 160** | 160A | B2 | 500V | 80 kA | 111 mm | 39.5 mm | TF | **199.50** |
| **FSF 200** | 200A | B2 | 500V | 80 kA | 111 mm | 39.5 mm | TF | **199.50** |
| **Central bolted tag (B3)** | | | | | | | | |
| • Body length 136 mm | | | | | | | | |
| **FSK 250** | 250A | B3 | 500V | 120 kA | 111 mm | 50.5 mm | TKF | **350.70** |
| **FSK 315** | 315A | B3 | 500V | 120 kA | 111 mm | 50.5 mm | TKF | **350.70** |
| **Central bolted tag (B4)** | | | | | | | | |
| • Body length 136 mm | | | | | | | | |
| **FMF 355** | 355A | B4 | 500V | 80 kA | 111 mm | 50.5 mm | TMF | **333.90** |
| **FMF 400** | 400A | B4 | 500V | 80 kA | 111 mm | 50.5 mm | TMF | **333.90** |
| **Central bolted tag (C2)** | | | | | | | | |
| • Body length 208 mm | | | | | | | | |
| **FTM 500** | 500A | C2 | 500V | 80 kA | 133/184 mm | 70.2 mm | TTM | **484.05** |
| **FTM 600** | 600A | C2 | 500V | 80 kA | 133/184 mm | 70.2 mm | TTM | **484.05** |

## EGA 1 Power Line SPDs - DIN-rail - IEC TYPE 1+2

The new EGA 1 series of Type 1+2 / Class I+II surge protection devices are designed to protect electrical installations from lightning strikes (10/350 µs) and induced voltage surges (8/20 µs) in accordance with IEC/EN 61643-11 and IEC/EN 61643-12 standards.

Intended to be used as the first level of protection in main switchboards, particularly in areas with a high risk of lightning strikes and areas with high atmospheric exposure where external protection against direct lightning strikes are already provided.



EGA 1 275/1+1 IR



EGA 1 275/3+1 IR



PSC2-25/230 TT IR



PSC4-25/400 TT IR



EGARA 1 275

### Features

- Lightning impulse current (10/350 µs): 12.5 kA per phase
- Nominal discharge current (8/20 µs): 20 kA per phase
- Maximum discharge current (8/20 µs): 50 kA
- Short-circuit current rating: 25 kA
- Network configuration: TT & TNS 230/400V
- Product standards: IEC/EN 61643-11, UL 1449 5th Edition
- Certifications: CE, Rohs, UKCA, KEMA-KEUR, ENEC
- Visual and remote end-of-life indication
- No back-up fuse required up to 315A
- Reinforced plug-in DIN-rail format
- Patented easy ergonomic cartridge plug-in and extraction mechanism
- Distributed PE & Equipotential EBB
- Shock withstand and vibration-proof remote microswitch and DIN-rail anchorage
- Advanced traceability and in-line automated quality controls of 100% of the SPDs

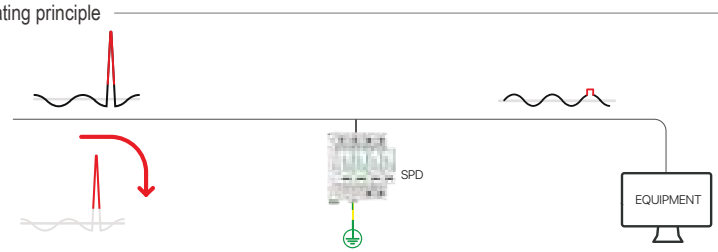
### Applications

- Building
- Photovoltaic and BESS
- Water treatment
- E-Mobility - EV charging
- Telecom
- Industry

| Type | limp L-N (10/350us) | In L-N (8/20us) | Imax (8/20us) | Uc max voltage | Up protection voltage | config. | width in 18 mm | price |
|---|---|---|---|---|---|---|---|---|
| **EGA 1 series** - Type 1+2 lightning current and surge arrestors | | | | | | | | |
| **EGA 1 series limp (10/350) 12.5kA** per phase - I total 25kA (2-pole) and 50kA (4 pole) | | | | | | | | |
| **EGA 1 275/1+1** | 12.5 kA | 20 kA | 50 kA | 275V | ≤ 1.5 kV | 1ph + N | 2 | **4 872.00** |
| **EGA 1 275/1+1 IR** | 12.5 kA | 20 kA | 50 kA | 275V | ≤ 1.5 kV | 1ph + N | 2 | **6 289.50** |
| **EGA 1 275/3+1** | 12.5 kA | 20 kA | 50 kA | 275V | ≤ 1.5 kV | 3ph + N | 4 | **10 710.00** |
| **EGA 1 275/3+1 IR** | 12.5 kA | 20 kA | 50 kA | 275V | ≤ 1.5 kV | 3ph + N | 4 | **13 020.00** |
| **PSC 25 series** - Type 1+2 lightning current and surge arrestors | | | | | | | | |
| The PCS 25 range of combined surge protection devices are designed to discharge lightning currents (10/350 µs) and induced transient overvoltages (8/20 µs). Suitable as the first level of protection in incoming power supply panels and areas with greater exposure to the atmosphere, where installations are usually provided with an external lightning protection system. | | | | | | | | |
| • Lightning impulse current (10/350 µs): 25 kA | | | | | | | | |
| • Nominal discharge current (8/20 µs): 25 kA | | | | | | | | |
| • Maximum discharge current (8/20 µs): 100 kA | | | | | | | | |
| • Short-circuit current rating: 25 kA | | | | | | | | |
| • Network configuration: TT & TNS 230/400V | | | | | | | | |
| • Product standards: IEC/EN 61643-11 | | | | | | | | |
| **PSC2-25/230 TT** | 25 kA | 25 kA | 100 kA | 275V | ≤ 1.5 kV | 1ph + N | 4 | **9 229.50** |
| **PSC2-25/230 TT IR** | 25 kA | 25 kA | 100 kA | 275V | ≤ 1.5 kV | 1ph + N | 4 | **10 059.00** |
| **PSC4-25/400 TT** | 25 kA | 25 kA | 100 kA | 275V | ≤ 1.5 kV | 3ph + N | 8 | **17 115.00** |
| **PSC4-25/400 TT IR** | 25 kA | 25 kA | 100 kA | 275V | ≤ 1.5 kV | 3ph + N | 8 | **20 580.00** |

| Spare replacement plug-in cartridges | | | |
|---|---|---|---|
| **EGARA 1 275** | spare replacement cartridge for | EGA 1 phase | **2 394.00** |
| **PSC-25/230** | spare replacement cartridge for | PSC 25 phase | **4 105.50** |
| **EGARA 1 N** | spare replacement cartridge for | EGA 1 neutral | **3 748.50** |
| **PSC-100N** | spare replacement cartridge for | PSC 25 neutral | **5 355.00** |

**SPD** - Operating principle



## EGA 2 Power Line SPDs - DIN-rail - IEC TYPE 2

The new EGA 2 series of Type 2 / Class II surge protection devices are designed to protect electrical installations from induced voltage surges (8/20 µs) in accordance with the IEC/EN 61643-11 and IEC/EN 61643-12 standards.

These devices are typically used in one of two scenarios: as a secondary level of defence in electrical installations where Type 1 surge protection devices are installed upstream or as the first line of defence where the electrical installations are situated in areas that are not directly exposed to lightning strikes and do not have external lightning protection systems in place.


EGA 2 275/1+0


EGA 2 275/1+1 IR


EGA 2 275/3+1 IR


PSM2-20/230 TT IR


PSM3-30/750 TNC IR

### Features

- Maximum discharge current (8/20 µs): 50 kA
- Nominal discharge current (8/20 µs): 20 kA
- Short-circuit withstand: 25 kA
- Network configuration: TT & TNS 230/400V
- Product standards: IEC/EN 61643-11, UL 1449 5th Edition
- Certifications: CE, Rohs, UKCA, KEMA-KEUR, ENEC
- Visual and remote end-of-life indication
- No back-up fuse required up to 315A
- Reinforced plug-in DIN-rail format
- Patented easy ergonomic cartridge plug-in and extraction mechanism
- Distributed PE & Equipotential EBB
- Shock withstand and vibration-proof remote microswitch and DIN-rail anchorage
- Advanced traceability and in-line automated quality controls of 100% of the SPDs

### Applications

- Building
- Photovoltaic and BESS
- Water treatment
- E-Mobility - EV charging
- Telecom
- Industry

| Type | limp L-N (10/350us) | In L-N (8/20us) | Imax (8/20us) | Uc max voltage | Up protection voltage | config. | width in 18 mm | price |
|---|---|---|---|---|---|---|---|---|
| **EGA 2 series** - Type 2 surge protection devices | | | | | | | | |
| **EGA 2 275/1+0** | – | 20 kA | 50 kA | 275V | ≤ 1.5 kV | 1P | 1 | **969.15** |
| **EGA 2 N/0+1** | – | 50 kA | 50 kA | 255V | ≤ 1.5 kV | N | 1 | **1 228.50** |
| **EGA 2 275/1+1** | – | 20 kA | 50 kA | 275V | ≤ 1.5 kV | 1ph + N | 2 | **1 827.00** |
| **EGA 2 275/1+1 IR** | – | 20 kA | 50 kA | 275V | ≤ 1.5 kV | 1ph + N | 2 | **2 719.50** |
| **EGA 2 275/3+1** | – | 20 kA | 50 kA | 275V | ≤ 1.5 kV | 3ph + N | 4 | **3 402.00** |
| **EGA 2 275/3+1 IR** | – | 20 kA | 50 kA | 275V | ≤ 1.5 kV | 3ph + N | 4 | **4 462.50** |
| **PSM 20 series** - Type 2+3 surge protection devices | | | | | | | | |

The PSM 20 surge protection device range is designed to discharge induced transient overvoltages (type 2 + 3). Suitable the second and final steps of protection in panels where 2 protection devices are installed upstream. These devices should be installed as close as possible to the equipment being protected.

- Maximum discharge current (8/20 µs): 20 kA
- Nominal discharge current (8/20 µs): 10 kA
- Combined discharge voltage (Uoc): 10 kV
- Network configuration: TT & TNS 230/400V
- Product standards: IEC/EN 61643-11

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PSM1-20/230** | – | 10 kA | 20 kA | 320V | ≤ 1.4 kV | 1P | 1 | **831.60** |
| **PSM1-20N** | – | 10 kA | 20 kA | 255V | ≤ 1.5 kV | N | 1 | **939.75** |
| **PSM2-20/230 TT** | – | 10 kA | 20 kA | 320V | ≤ 1.4 kV | 1ph + N | 2 | **1 438.50** |
| **PSM2-20/230 TT IR** | – | 10 kA | 20 kA | 320V | ≤ 1.4 kV | 1ph + N | 2 | **2 163.00** |
| **PSM4-20/400 TT** | – | 10 kA | 20 kA | 320V | ≤ 1.4 kV | 3ph + N | 4 | **2 803.50** |
| **PSM4-20/400 TT IR** | – | 10 kA | 20 kA | 320V | ≤ 1.4 kV | 3ph + N | 4 | **4 116.00** |
| **PSM 30 series** - Type 2 surge protection devices *(higher voltage applications 500-690V)* | | | | | | | | |

Type 2 surge protection devices for protection of higher voltage electrical systems from induced transient overvoltages (8/20 µs).

- Maximum continuous operating voltage: 750V
- Product standards: IEC/EN 61643-11

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PSM1-30/750** | – | 15 kA | 30 kA | 750V | ≤ 3 kV | 1P | 1 | **1 438.50** |
| **PSM1-30/750 IR** | – | 15 kA | 30 kA | 750V | ≤ 3 kV | 1P | 1 | **1 627.50** |
| **PSM3-30/750 TNC** | – | 15 kA | 30 kA | 750V | ≤ 3 kV | 3P | 3 | **3 664.50** |
| **PSM3-30/750 TNC IR** | – | 15 kA | 30 kA | 750V | ≤ 3 kV | 3P | 3 | **4 767.00** |

### Spare replacement plug-in cartridges

| | | | |
|---|---|---|---|
| **EGARA 2 275** | spare replacement cartridge for | EGA 2 phase | **706.65** |
| **PSM-20/230** | spare replacement cartridge for | PSM 20 phase | **605.85** |
| **PSM-30/750** | spare replacement cartridge for | PSM 30 phase | **1 060.50** |
| **EGARA 2 N** | spare replacement cartridge for | EGA 2 neutral | **919.80** |
| **PSM-20N** | spare replacement cartridge for | PSM 20 neutral | **684.60** |

## Surge protection devices (SPDs) for photovoltaic applications

Due to their location, solar panels and in many cases, the inverters and energy storage systems they are connected to are particularly exposed and prone to direct or indirect lightning strikes.

As PV systems are directly connected to electrical networks, surge protection devices are a critical component for protection against lightning and overvoltages, which not only ensures the safety of people, goods and equipment, but also ensures continuity of installation services.



PSC3-5/1000 PV IR



PSM3-40/600 PV IR

| Type | Iimp L-N (10/350us) | In L-N (8/20us) | Imax (8/20us) | Uc max voltage | Up protection voltage | config. | width in 18 mm | price |
|---|---|---|---|---|---|---|---|---|
| **Type 1+2 photovoltaic surge protection devices** | | | | | | | | |
| **PSC 5 PV series** - DIN-rail - IEC Type 1+2 PV | | | | | | | | |
| The PSC 5 PV range of combined Type 1+2 / Class I+II surge protection devices are intended for discharging lightning currents (10/350 µs) and protection against induced voltage surges (8/20 µs) within photovoltaic applications, in accordance with IEC 61643-31 standards. | | | | | | | | |
| These lightning current and surge protection devices are suitable for all photovoltaic applications: large-scale, rooftop and self-consumption *(off-grid)* DC installations, especially in facilities provided with external LPS. | | | | | | | | |
| • Lightning impulse current (10/350 µs): 5 kA | | | | | | | | |
| • Maximum discharge current (8/20 µs): 40 kA | | | | | | | | |
| • Nominal discharge current (8/20 µs): 20 kA | | | | | | | | |
| • Maximum continuous operating voltage: 1060V & 1500V | | | | | | | | |
| • Short-circuit withstand: 10 kA *(no back-up fuse required)* | | | | | | | | |
| • Network configuration: PV | | | | | | | | |
| • Product standards: IEC 61643-31 | | | | | | | | |
| • Plug-in DIN-rail format | | | | | | | | |
| • Visual and remote end of life indication | | | | | | | | |
| • Reversible chassis to allow cable entry from above or below | | | | | | | | |
| • Dynamic thermal disconnection system with high breaking capacity, optimised for DC voltages | | | | | | | | |
| **PSC3-5/1000 PV** | 5 kA | 20 kA | 40 kA | 1060V | ≤ 4 kV | L+/PE/L- | 3 | **2 971.50** |
| **PSC3-5/1000 PV IR** | 5 kA | 20 kA | 40 kA | 1060V | ≤ 4 kV | L+/PE/L- | 3 | **3 412.50** |
| **PSC3-5/1500 PV** | 5 kA | 20 kA | 40 kA | 1500V | ≤ 5 kV | L+/PE/L- | 3 | **3 213.00** |
| **PSC3-5/1500 PV IR** | 5 kA | 20 kA | 40 kA | 1500V | ≤ 5 kV | L+/PE/L- | 3 | **3 664.50** |
| *Last two digits* **IR** *- with signalling contacts for remote indication/monitoring of devices* | | | | | | | | |
| **Type 2 photovoltaic surge protection devices** | | | | | | | | |
| **PSM 40 PV series** - DIN-rail - IEC Type 2 PV | | | | | | | | |
| The PSM 40 PV range of Type 2 / Class II surge protection devices are intended for discharging induced voltage surges (8/20 µs) within photovoltaic applications, in accordance with IEC 61643-31 standards. | | | | | | | | |
| These surge protection devices are suitable for all photovoltaic applications: large-scale, rooftop and self-consumption *(off-grid)* DC installations. | | | | | | | | |
| • Maximum discharge current (8/20 µs): 40 kA | | | | | | | | |
| • Nominal discharge current (8/20 µs): 20 kA | | | | | | | | |
| • Maximum continuous operating voltage: 660V, 1060V & 1500V | | | | | | | | |
| • Short-circuit withstand: 10 kA *(no back-up fuse required)* | | | | | | | | |
| • Network configuration: PV | | | | | | | | |
| • Product standards: IEC 61643-31 | | | | | | | | |
| • Plug-in DIN-rail format | | | | | | | | |
| • Visual and remote end of life indication | | | | | | | | |
| • Reversible chassis to allow cable entry from above or below | | | | | | | | |
| • Dynamic thermal disconnection system with high breaking capacity, optimised for DC voltages | | | | | | | | |
| **PSM3-40/600 PV** | – | 20 kA | 40 kA | 660V | ≤ 2.6 kV | L+/PE/L- | 3 | **1 722.00** |
| **PSM3-40/600 PV IR** | – | 20 kA | 40 kA | 660V | ≤ 2.6 kV | L+/PE/L- | 3 | **2 205.00** |
| **PSM3-40/1000 PV** | – | 20 kA | 40 kA | 1060V | ≤ 4 kV | L+/PE/L- | 3 | **2 551.50** |
| **PSM3-40/1000 PV IR** | – | 20 kA | 40 kA | 1060V | ≤ 4 kV | L+/PE/L- | 3 | **3 171.00** |
| **PSM3-40/1500 PV** | – | 15 kA | 40 kA | 1500V | ≤ 5 kV | L+/PE/L- | 3 | **3 003.00** |
| **PSM3-40/1500 PV IR** | – | 15 kA | 40 kA | 1500V | ≤ 5 kV | L+/PE/L- | 3 | **3 381.00** |

| | | | |
|---|---|---|---|
| **Spare replacement plug-in cartridges - for PV surge arrestors** | | | |
| **PSC-5/1000 PV** | spare replacement cartridge for | PSC3-5/1000 | **893.55** |
| **PSC-5/1500 PV** | spare replacement cartridge for | PSC3-5/1500 | **971.25** |
| **PSM-40/600 PV** | spare replacement cartridge for | PSM3-40/600 | **636.30** |
| **PSM-40/1000 PV** | spare replacement cartridge for | PSM3-40/1000 | **687.75** |
| **PSM-40/1500 PV** | spare replacement cartridge for | PSM3-40/1500 | **746.55** |



Above ZAR prices do not include VAT. E&OE

## V-CHECK MR - Surge protection + POP + integrated self reclose MCB

V-CHECK MR devices are a range of combined surge and power frequency overvoltage protection devices (SPD + POP), complete with automatic reclosing MCB.

These units protect electrical networks against transient voltage spikes (8/20 µs) as well as voltage increases which last for indefinate periods. Ideal for installation panels requiring continuity of service and for second homes.

- SPD type: Type 2 / Class II
- Network: 1-Phase + N / 3-Phase + N
- Actuation method: Integrated auto reclosing MCB
- Product standards: EN 50550; IEC 63052; EN 61643-11



V-Check 4MR-63

| type | type 2 surge protection In L-N (8/20us) | Imax (8/20us) | Uc max voltage | C-curve MCB Up protection voltage | In nominal current | Icn breaking capacity | configuration | width in 18 mm | price |
|---|---|---|---|---|---|---|---|---|---|
| **V-Check 2MR-25** | 5 kA | 20 kA | 400V | ≤ 1.8 kV | 40A | 10 kA | 1ph + N | 5 | **6 888.00** |
| **V-Check 2MR-40** | 5 kA | 20 kA | 400V | ≤ 1.8 kV | 40A | 10 kA | 1ph + N | 5 | **7 686.00** |
| **V-Check 4MR-16** | 5 kA | 20 kA | 275V | ≤ 1.5 kV | 16A | 6 kA | 3ph + N | 9 | **12 915.00** |
| **V-Check 4MR-63** | 5 kA | 20 kA | 275V | ≤ 1.5 kV | 63A | 6 kA | 3ph + N | 9 | **16 695.00** |
| **V-Check RC - SPD+POP protection disconnecting the circuit via a contactor** | | | | | | | | | |
| **V-Check 4RC** | 15 kA | 40 kA | 400V | ≤ 1.8 kV | – | – | 3ph + N | 4 | **9 250.50** |



V-Check 4RC

## G-CHECK - Ground monitoring device

The G-CHECK is a control device that continuously monitors the state of the ground connection to ensure proper operation of surge protection devices and the protection of personnel against indirect contacts. By the loop resistance calculation method, G-CHECK checks the impedance of the actual leakage path of an indirect contact, enabling it to detect:

- Deterioration of the ground connection
- Breakage or incorrect wiring of the neutral cable

| type | Un rated voltage | frequency | alarm activation value | max measured value | outputs | output rated current | price |
|---|---|---|---|---|---|---|---|
| **G-CHECK 230** | 230V | 50Hz | adjustable | 500 ohm | 1 | 0.3A | **10 122.00** |



PSM4-40/230 SG

## SAFEGROUND - Power line monitoring SPD with ground monitoring

The **SAFEGROUND**® series are Type 2 / Class II surge protection with integrated ground monitoring intended to protect against induced voltage surges (8/20 µs) in accordance to IEC/EN 61643-11 standards.

The integrated ground monitoring feature, based on patented loop impedance technology:

- Confirms the device is properly installed
- Reports on the effectiveness of the surge protection
- Provides safety information in the event of indirect contact
- Indication of the status of the earth loop is displayed via a multi-state LED

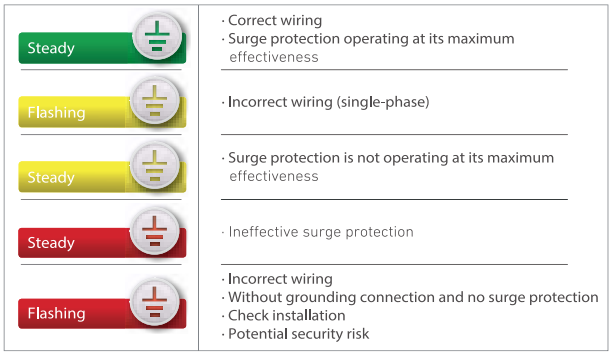


PSM4-40/400 SG

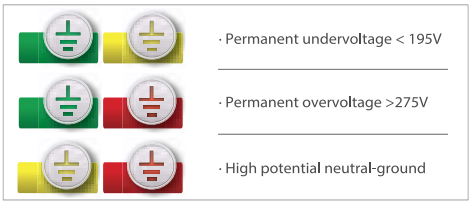
| type | limp L-N (10/350us) | In L-N (8/20us) | Imax (8/20us) | Uc max voltage | Up protection voltage | config. | width in 18 mm | price |
|---|---|---|---|---|---|---|---|---|
| **PSM2-40/230 SG** | – | 20 kA | 40 kA | 275V | ≤ 1.3 kV | 1ph + N | 2 | **5 428.50** |
| **PSM4-40/400 SG** | – | 20 kA | 40 kA | 275V | ≤ 1.3 kV | 3ph + N | 4 | **7 413.00** |

## SAFEGROUND® - Indications

### Main indications




### Additional indications




954315


961180


952070


952315


900453

For the protection of low voltage equipment against transient voltage and current surges mainly from atmospheric origin *(lightning)* and transient produced by switching characteristics such as in switching of distribution networks, transformers, motors, etc.

| type | Iimp L-N (10/350us) | In L-N (8/20us) | Imax (8/20us) | Uc max voltage | Up protection voltage | config. | width in 18 mm | price |
|---|---|---|---|---|---|---|---|---|
| **DEHN Type 1+2 combined lightning current and surge protection** *(in a single unit)* | | | | | | | | |
| • Clamps voltage to less than 1500V as per SANS 10142-1:2008 table L1<br>• Prewired spark-gap-based type 1 and 2 combined lightning current and surge arrester | | | | | | | | |
| **941110** | 12.5kA | 12.5kA | 25kA | 255V | ≤ 1.5 kV | 1ph + N | 2 | **6 888.00** |
| **951115*** | 25kA | 25kA | 50kA | 264V | ≤ 1.5 kV | 1ph + N | 4 | **24 465.00** |
| **941310** | 12.5kA | 12.5kA | 50kA | 255V | ≤ 1.5 kV | 3ph + N | 4 | **12 600.00** |
| **951315*** | 25kA | 25kA | 100kA | 264V | ≤ 1.5 kV | 3ph + N | 8 | **41 580.00** |
| **DEHN Type 1+2 combined lightning current and surge protection** *with integrated back up fuse* | | | | | | | | |
| **961200** | 25kA | 25kA | 25kA | 255V | ≤ 1.5 kV | 1P | 2 | **10 500.00** |
| **961205*** | 25kA | 25kA | 25kA | 255V | ≤ 1.5 kV | 1P | 2 | **11 445.00** |
| **Type 1 lightning current protection** *with integrated backup fuse* | | | | | | | | |
| **961146*** | 35kA | – | 35kA | 440V | ≤ 2.5 kV | 1P | 3 | **16 170.00** |
| **961176*** | 35kA | – | 35kA | 760V | ≤ 4 kV | 1P | 3 | **17 535.00** |
| **Type 1 lightning current protection** *without integrated backup fuse* | | | | | | | | |
| **961145*** | 35kA | – | 35kA | 440V | ≤ 2.5 kV | 1P | 3 | **11 445.00** |
| **DEHN N-PE** | | | | | | | | |
| **961180** | 100kA | – | 100kA | 255V | ≤ 1.5 kV | N | 2 | **9 502.50** |
| **961185*** | 100kA | – | 100kA | 255V | ≤ 1.5 kV | N | 2 | **10 279.50** |
| **952030** | 12kA | 20kA | 40kA | 255V | ≤ 1.5 kV | N | 1 | **1 963.50** |
| **952035*** | 12kA | 20kA | 40kA | 255V | ≤ 1.5 kV | N | 1 | **3 486.00** |
| **DEHN Type 2 surge protection devices** *without integrated back up fuse* | | | | | | | | |
| Minimum requirement as per SANS 10142-1:2008 anex L for use in all electrical distribution boards and sub boards. For installation in conformity with the lightning protection zone.<br>• Replaceable plug-in modules • Visual fault indication<br>• Clamps voltage to less than 1500V as per SANS 10142-1:2008 table L1 | | | | | | | | |
| **DEHN guard Type 2 surge protection device** *without integrated back up fuse* | | | | | | | | |
| **952070** | – | 20kA | 40kA | 275V | ≤ 1.5 kV | 1P | 1 | **1 365.00** |
| **952090*** | – | 20kA | 40kA | 275V | ≤ 1.5 kV | 1P | 1 | **2 278.50** |
| **952110** | 12kA | 20kA | 40kA | 275V | ≤ 1.5 kV | 1ph + N | 2 | **3 244.50** |
| **952115*** | 12kA | 20kA | 40kA | 275V | ≤ 1.5 kV | 1ph + N | 2 | **3 874.50** |
| **952310** | 12kA | 20kA | 40kA | 275V | ≤ 1.5 kV | 3ph + N | 4 | **5 722.50** |
| **952315*** | 12kA | 20kA | 40kA | 275V | ≤ 1.5 kV | 3ph + N | 4 | **6 562.50** |
| **DEHN S/M ACI 275 Type 2 arrester protection device ACI** *(Advanced Circuit Interruption)* | | | | | | | | |
| With its new integrated switch/spark gap combination, ACI *(Advanced Circuit Interruption)* technology reduces complexity, improves system availability and saves time, space and material costs. Function reliably and systems are always available. | | | | | | | | |
| **952341*** | – | 20kA | 20kA | 275V | ≤ 1.5 kV | 1ph + N | 2 | **11 655.00** |
| **952121*** | – | 20kA | 20kA | 275V | ≤ 1.5 kV | 1ph + N | 2 | **5 890.50** |
| **952100*** | – | 20kA | 20kA | 275V | ≤ 1.5 kV | 1P | 1 | **2 646.00** |
| * *With signalling contacts for remote indication/monitoring of devices* | | | | | | | | |
| **DEHN Type 2 surge protection device** *(non plug-in modules)* | | | | | | | | |
| **900453** | – | 5kA | 10kA | 275V | ≤ 1.2 kV | 1ph + N | 2 | **1 281.00** |
| **900454** | – | 10kA | 20kA | 275V | ≤ 1.3 kV | 1ph + N | 2 | **1 375.50** |
| **900463** | – | 10kA | 20kA | 275V | ≤ 1.3 kV | 3ph + N | 4 | **2 152.50** |
| **DEHN Type 2 with build in fault indicator** | | | | | | | | |
| **900430** | – | 5kA | 10kA | 275V | ≤ 1.5 kV | 1ph + N | – | **1 848.00** |
| **DEHNrail modular Type 3 surge protection devices** | | | | | | | | |
| • Replaceable plug-in protection modules<br>• High discharge capacity due to heavy-duty oxide varistor / spark gap combination<br>• Energy coordination with other arrestors | | | | | | | | |
| **953200** | – | 3kA | 5kA | 255V | ≤ 1.25 kV | 1ph + N | 1 | **2 625.00** |



Above ZAR prices do not include VAT. E&OE



900071


950531


920300


920244


927244


929121



929221

## Photovoltaic Surge Protection Devices

Due to their location, solar panels and in many cases, the inverters they are connected to are exposed to and particularly prone to direct or indirect lightning strikes. As PV systems are directly connected to the electrical networks of buildings surge protection is essential.

| type | Iimp) L-N (10/350us | In L-N (8/20us) | Imax (8/20us) | Uc max voltage | Up protection voltage | config. | width in 18 mm | price |
|---|---|---|---|---|---|---|---|---|
| **DEHNguard Type 1+2 PV (SPD)** | | **with SCI** | | | *(non-plug-in modules)* | | | |
| • Combined lightning current and surge arrestor for use in Photovoltaic systems | | | | | | | | |
| **900070** | 6.25kA | 20kA | 40kA | 1200V | ≤ 3.8 kV | L+/PE/L- | 4 | **1 480.50** |
| **900075*** | 6.25kA | 20kA | 40kA | 1200V | ≤ 3.8 kV | L+/PE/L- | 4 | **3 601.50** |
| **900071** | 6.25kA | 20kA | 40kA | 1500V | ≤ 4.5 kV | L+/PE/L- | 4 | **2 698.50** |
| **900076*** | 6.25kA | 20kA | 40kA | 1500V | ≤ 4.5 kV | L+/PE/L- | 4 | **3 864.00** |
| **DEHNguard Type 2 PV (SPD)** | | **with SCI** | | | *(non-plug-in modules)* | | | |
| • Short circuit interruption (SCI) technology for maximum safety in PV systems | | | | | | | | |
| **950531** | – | 12.5kA | 25kA | 600V | ≤ 2.5 kV | L+/PE/L- | 3 | **5 145.00** |
| **950530** | – | 12.5kA | 25kA | 1000V | ≤ 4 kV | L+/PE/L- | 3 | **5 292.00** |
| **DEHNguard Type 2+3 PV (SPD)** | | **with SCI** | | | | | | |
| • Plug-in cartridges for easy replacement<br>• Safe replacement of protection modules without arc formation due to integrated DC fuses | | | | | | | | |
| **952515*** | – | 12.5kA | 25kA | 1000V | ≤ 4 kV | L+/PE/L- | 3 | **4 515.00** |
| **952520** | – | 12.5kA | 25kA | 1500V | ≤ 6 kV | L+/PE/L- | 4.5 | **12 285.00** |

* *With signalling contacts for remote indication/monitoring of devices*

## Surge protection devices for data networks

### BLITZDUCTOR XT

The BLITZDUCTOR XT range are pluggable and universal multipole DIN-rail mounted lightning current and surge arresters for protecting measuring and control circuits, bus systems and telecommunication systems

- LifeCheck SPD monitoring function
- Optimal protection for one pair of unearthed balanced interfaces, with direct or indirect shield earthing

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **920244** | 2.5kA | 10kA | 20kA | 33 VDC | ≤ 52V | 4P | 2/3 | **2 488.50** |
| **920300** | DIN-rail mount socket for above BLITZDUCTOR XT protection module | | | | | | | **1 155.00** |

## BLITZDUCTORconnect

The **BLITZDUCTORconnect** series of combined lightning current and surge arresters are designed for universal use and system protection in the field of automation or measuring and control technology.

- Space-saving, modular combined arrester with a width of 6 mm
- Push-in connection technology with status indication
- With signal disconnection for maintenance purposes

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **927224** | 1.5kA | 5kA | 20kA | 33 VDC | ≤ 90V | 2P | 1/3 | **2 730.00** |
| **927244*** | 1.5kA | 5kA | 20kA | 36 VDC | ≤ 57V | 2P | 1/3 | **2 730.00** |

* *For unearthed balanced interfaces*

## DEHNpatch Type 2 SPD for Ethernet applications

The **DEHNpatch** is a universal arrester for Industrial Ethernet, Power over Ethernet (PoE+ according to IEEE 802.3at up to 57 V) and similar applications in structured cabling systems according to class E up to 250 MHz.

- Fully shielded adapter with sockets for DIN-rail mounting

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **929121** | 0.5kA | 150A | 10kA | 48 VDC | ≤ 180V | RJ45 | 1 | **2 856.00** |

## DEHNpatch outdoor Type 2 SPD IP66

Universal surge arrester for GBit Ethernet applications, Power over Ethernet (IEEE 802.3 compliant up to PoE++ / 4PPoE) and similar applications in structured cabling systems up to class E.

- IP66 rated enclosure permits outdoor use
- Universal mounting bracket for pole and wall mounting

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **929221** | 0.8kA | 400A | 10kA | 8.5 VDC | ≤ 170V | RJ45 | – | **5 607.00** |


LYTE II


CliQ II


DRF-24V120W1GBA


DRF-24V480W3GBA

## Industrial Power Supplies

Delta - the worlds leading power supply manufacturer offers state-of-the-art designs made to withstand harsh industrial environments in accordance with ATEX requirements. The rugged ultra-compact case is both shock and vibration-resistant according to IEC 60068-2.

**Product features:**

- DIN-rail mounting *(RoHS compliant)*
- Wide input voltage range 85 to 264 VAC *(1 phase)* / 320 to 600 VAC *(3 phase)*
- Provides - overload, overvoltage and thermal protection
- Power boost - *(enables reserve power for reliable start-up of loads with high inrush currents)*
- Conforms to harmonic current IEC/EN 61000-3-2, Class A
- Certification: UL508, EN 60950, cULus 60950, EN 50178, EN 60204, GS, CCS Aus

| type | input voltage | output voltage *(adj)* | rated load (W) | rated load (A) | housing | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **LYTE II series** | DIN-rail mounting, ultra slim power supplies for general applications | | | | | | | | |
| • Universal input range: | 85...264 VAC | | | | | | | | |
| • Efficiency: | up to 90.0% *(at 230 VAC)* | | | | | | | | |
| • Operating temperature: | -20°C to +70°C | | | | | | | | |
| • Built-in constant current circuit for reactive loads | | | | | | | | | |
| **DRL-12V75W1AZ** | 85 - 264 VAC | 12 VDC | 75 | 6.3 | plastic | 124 | 27 | 102 | **693.00** |
| **DRL-12V120W1EN** | 90 - 264 VAC | 12 VDC | 120 | 10.0 | aluminium | 124 | 30 | 117 | **805.35** |
| **DRL-12V240W1EN** | 90 - 264 VAC | 12 VDC | 240 | 20.0 | aluminium | 124 | 40 | 117 | **2 037.00** |
| **DRL-24V75W1AZ** | 85 - 264 VAC | 24 VDC | 75 | 3.1 | plastic | 124 | 27 | 102 | **571.20** |
| **DRL-24V120W1EN** | 90 - 264 VAC | 24 VDC | 120 | 5.0 | aluminium | 124 | 30 | 117 | **688.80** |
| **DRL-24V240W1EN** | 90 - 264 VAC | 24 VDC | 240 | 10.0 | aluminium | 124 | 40 | 117 | **1 344.00** |
| **DRL-24V480W1EN** | 90 - 264 VAC | 24 VDC | 480 | 20.0 | aluminium | 124 | 56 | 117 | **3 223.50** |
| **DRL-48V75W1AZ** | 85 - 264 VAC | 48 VDC | 75 | 1.6 | plastic | 124 | 27 | 102 | **709.80** |
| **DRL-48V120W1EN** | 90 - 264 VAC | 48 VDC | 120 | 2.5 | aluminium | 124 | 30 | 117 | **1 165.50** |
| **DRL-48V240W1EN** | 90 - 264 VAC | 48 VDC | 240 | 5.0 | aluminium | 124 | 40 | 117 | **2 173.50** |
| **CliQ II series** | DIN-rail mounting, high specification series power supplies | | | | | | | | |
| • Efficiency: | High efficiency - up to 92.0% *(at 230 VAC)* | | | | | | | | |
| • Power boost: | 150% for 5 seconds *(480W: 200% for 2 seconds)* | | | | | | | | |
| • Operating temp: | -25°C to +80°C | | | | | | | | |
| • Full-corrosion resistant aluminium casing | | | | | | | | | |
| • Conformal coating on PCBAs to protect against chemical and dust pollutants | | | | | | | | | |
| **Single-phase** | Input voltage range: 85 - 264 VAC / 120 - 375 VDC | | | | | | | | |
| **DRP024V060W1BN** | 85 - 264 VAC | 24 VDC | 60 | 2.5 | aluminium | 121 | 32 | 125 | **1 218.00** |
| **DRP024V120W1BN** | 85 - 264 VAC | 24 VDC | 120 | 5.0 | aluminium | 121 | 50 | 125 | **1 890.00** |
| **DRP024V240W1BN** | 85 - 264 VAC | 24 VDC | 240 | 10.0 | aluminium | 121 | 85 | 125 | **2 677.50** |
| **DRP024V480W1BN** | 85 - 264 VAC | 24 VDC | 480 | 20.0 | aluminium | 121 | 144 | 119 | **4 126.50** |
| **DRP048V120W1BN** | 85 - 264 VAC | 48 VDC | 120 | 2.5 | aluminium | 121 | 50 | 125 | **2 257.50** |
| **DRP048V240W1BN** | 85 - 264 VAC | 48 VDC | 240 | 5.0 | aluminium | 121 | 85 | 125 | **3 297.00** |
| **DRP048V480W1BN** | 85 - 264 VAC | 48 VDC | 480 | 10.0 | aluminium | 121 | 144 | 119 | **4 977.00** |
| **Two-phase** | Input voltage range: 2 × 180 - 550 VAC | DC input range 254 - 780 VDC | | | | | | | |
| **DRP024V120W2BN** | 180-550 VAC | 24 VDC | 120 | 5 | aluminium | 124 | 40 | 117 | **2 236.50** |
| **Three-phase** | Input voltage range: 3 × 320 - 600 VAC / 450 - 800 VDC | | | | | | | | |
| **DRP024V060W3BN** | 320 - 600 VAC | 24 VDC | 60 | 2.5 | aluminium | 121 | 50 | 118 | **2 320.50** |
| **DRP024V120W3BN** | 320 - 600 VAC | 24 VDC | 120 | 5.0 | aluminium | 121 | 50 | 118 | **2 079.00** |
| **DRP024V240W3BN** | 320 - 600 VAC | 24 VDC | 240 | 10.0 | aluminium | 121 | 70 | 118 | **3 916.50** |
| **DRP024V480W3BN** | 320 - 600 VAC | 24 VDC | 480 | 20.0 | aluminium | 121 | 140 | 118 | **5 512.50** |
| **DRP024V960W3BN** | 320 - 600 VAC | 24 VDC | 960 | 40.0 | aluminium | 121 | 255 | 118 | **9 429.00** |
| **FORCE-GT series** | DIN-rail mounting, high specification series power supplies | | | | | | | | |
| • Efficiency: | High efficiency - up to 95.0% *(at 230 VAC)* | | | | | | | | |
| • Operating temp: | -30°C to +70°C | | | | | | | | |
| • Built-in constant current circuit for charging applications | | | | | | | | | |
| • Conformal coating on PCBAs to protect against chemical and dust pollutants | | | | | | | | | |
| **Single-phase** | Input voltage range: 90 - 264 VAC | | | | | | | | |
| **DRF-12V120W1GBA** | 90 - 264VAC | 12 VDC | 120 | 10.0 | aluminium | 124 | 30 | 117 | **1 785.00** |
| **DRF-24V120W1GBA** | 90 - 264VAC | 24 VDC | 120 | 5.0 | aluminium | 124 | 30 | 117 | **1 785.00** |
| **DRF-24V240W1GBA** | 90 - 264VAC | 24 VDC | 240 | 10.0 | aluminium | 124 | 40 | 117 | **2 436.00** |
| **DRF-24V480W1GBA** | 90 - 264VAC | 24 VDC | 480 | 20.0 | aluminium | 124 | 56 | 117 | **3 864.00** |
| **Three-phase** | Input voltage range: 3 × 320 - 575 VAC | | | | | | | | |
| **DRF-24V120W3GBA** | 320 - 575VAC | 24 VDC | 120 | 5.0 | aluminium | 124 | 38 | 126 | **2 625.00** |
| **DRF-24V240W3GBA** | 320 - 575VAC | 24 VDC | 240 | 10.0 | aluminium | 124 | 50 | 126 | **4 567.50** |
| **DRF-24V480W3GBA** | 320 - 575VAC | 24 VDC | 480 | 20.0 | aluminium | 124 | 65 | 128 | **6 594.00** |



Above ZAR prices do not include VAT. E&OE



PMT

## PMT2 series - Panel mounting *(chassis type) enclosed power supplies (single phase)*

PMT panel-mount power supplies with a wide operating temperature range, withstand shock and vibration according to IEC 60068-2. They offer overvoltage and over-current protection and meet price competitive demand without compromising quality of components and product specifications.

- Household appliance approvals to IEC/EN 60335-1, IEC/EN 61558-1 and IEC/EN 61558-2-16
- Low profile design: 30 mm height
- Over Voltage Category III, Pollution Degree 3
- Universal AC input voltage without power de-rating
- Short Circuit / Overvoltage / Overload / Over Temperature Protection

| type | input voltage | output voltage *(adj)* | rated load (W) | rated load (A) | housing | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **PMT-5V350W1AM** | 180 - 264 VAC | 5 VDC | 300 | 60 | aluminium | 50 | 115 | 215 | **1 638.00** |
| **PMT-12V35W2BA** | 90 - 264 VAC | 12 VDC | 36 | 3.0 | aluminium | 30 | 82 | 99 | **357.00** |
| **PMT-12V50W2BA** | 90 - 264 VAC | 12 VDC | 50 | 4.2 | aluminium | 30 | 82 | 99 | **378.00** |
| **PMT-12V100W2BA** | 90 - 264 VAC | 12 VDC | 102 | 8.5 | aluminium | 30 | 97 | 129 | **523.95** |
| **PMT-12V150W2BA** | 90 - 264 VAC | 12 VDC | 150 | 12.5 | aluminium | 30 | 97 | 159 | **644.70** |
| **PMT-24V35W2BA** | 90 - 264 VAC | 24 VDC | 36 | 1.5 | aluminium | 30 | 98 | 98 | **357.00** |
| **PMT-24V50W2BA** | 90 - 264 VAC | 24 VDC | 53 | 2.2 | aluminium | 30 | 82 | 99 | **446.25** |
| **PMT-24V100W2BA** | 90 - 264 VAC | 24 VDC | 108 | 4.5 | aluminium | 30 | 97 | 129 | **514.50** |
| **PMT-24V150W2BA** | 90 - 264 VAC | 24 VDC | 150 | 6.3 | aluminium | 30 | 97 | 159 | **754.95** |
| **PMT-24V200W2BR** | 90 - 264 VAC | 24 VDC | 211 | 8.8 | aluminium | 30 | 97 | 159 | **815.85** |
| **PMT-24V350W2BR** | 90 - 264 VAC | 24 VDC | 350 | 14.6 | aluminium | 30 | 115 | 215 | **1 249.50** |



DRR-20N

## Complementary modules — DIN-rail mounting

### Redundancy module — *built-in 2-channel DC OK signal and alarm relay contact*

Redundancy modules provide additional protection against potential failure of the 24 VDC supply. Two power supplies are decoupled via a redundancy module, which continually monitors the feeding power supply units and when one unit fails, automatically switches to the other.

- Wide input and output range of 22 - 60 VDC
- Built-in 2-channel DC OK signal and alarm relay contact
- Conformal coating on PCBAs to protect against common dust and chemical pollutants

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **DRR-20N** | 22 - 60 VDC | 22 - 60 VDC | – | 20A | aluminium | 121 | 50 | 122 | **930.30** |
| **DRR-40N** | 22 - 60 VDC | 22 - 60 VDC | – | 40A | aluminium | 121 | 50 | 122 | **1 144.50** |

## Buffer module — *for protection against short power failures*

Allows a system to continue operating during power disruptions lasting from milliseconds to seconds

- Buffering time 250ms to 10s *(depending on load current)*
- Supports parallel connection to extended buffering time
- Conformal coating on PCBAs to protect against common dust and chemical pollutants

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **DRB-24V020ABN** | 23 - 28.8 VDC | 24 VDC | – | 20A | aluminium | 121 | 50 | 120 | **4 000.50** |

## DC-UPS module *(without battery)* — *Suitable for 24V system up to 40A*

DC-UPS module in a modular DIN-rail mounting format occupy the same profile as standard miniature circuit breakers (MCBs), suited for mounting into distribution boards with a 45 mm frontal cutout.

- High MTBF > 500,000 hours per Telcordia SR-332
- Zero switch over time from loss of DC input to battery operation
- Built-in diagnostic monitoring for DC OK, discharge and battery failure by relay contacts
- LED indicator for DC OK, Battery Charging, Battery Discharging, Battery Fail and Battery Reverse Polarity
- Conformal coating on PCBAs to protect against common dust and chemical pollutants

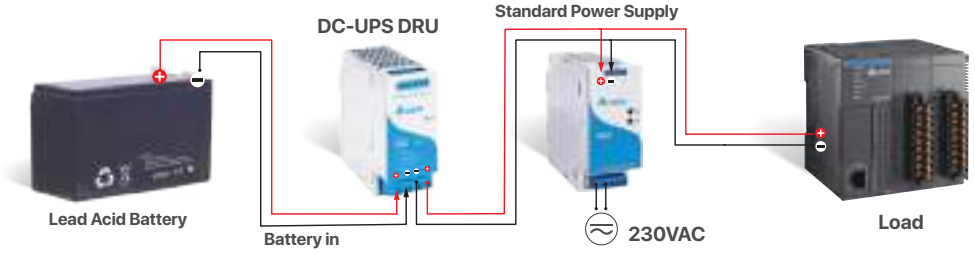


DRU-24V40ABN

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **DRU-24V10ACZ** | DC-UPS | 23 - 28 VDC | 240 | 10A | plastic | 91 | 71 | 56 | **948.15** |
| **DRU-24V40ABN** | DC-UPS | 23 - 28 VDC | 960 | 40A | aluminium | 121 | 50 | 118 | **1 480.50** |

## Delta 24V DC power supply - Backup solution

– The Delta DRU UPS seamlessly integrates with a 24V DC power supply setup to ensure continuous operation during AC source interruptions or failures.



## DIN-rail mounting power supplies

- Universal AC input range
- DC output voltage *(adjustable)*
- 100% full load burn-in test
- Safety standards: UL 508, IEC62368-1, BS/EN62368-1
- EMC standards: EN 55032, EN 61000-3-2,-3 EN61000-4-2,3,4,5,6,8,11



YSD15S...

New



YSD30S...



YDL20L...



YSDW240-24

| type | input voltage | DC output voltage (adj) | rated load (W) | rated load (A) | housing | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **YSD..S series - Modular DIN-rail mounting power supplies** | | | | | | | | | |
| YSD..S series modular, DIN-rail mountable AC-DC power supply specifically designed to occupy the same profile as a standard miniature circuit breaker (MCB), making it perfect for installation in distribution boards with a 45mm frontal cutout. DIN-rail mounting permits easy installation alongside other control and protection devices, making it an ideal choice for industrial automation, telecommunications, and distribution board applications. | | | | | | | | | |
| • Universal input range *(90 - 264 VAC, 127 - 370 VDC)* • Class II isolation • Overvoltage category III • Protection: Short circuit / Overload / Overvoltage | | | | | | | | | |
| **YSD15S-0502400** | 90 - 264 VAC | 5V | 12 | 2.40 | plastic | 90 | 18 | 58 | **350.70** |
| **YSD15S-1201250** | 90 - 264 VAC | 12V | 15 | 1.25 | plastic | 90 | 18 | 58 | **350.70** |
| **YSD30S-1202000** | 90 - 264 VAC | 12V | 24 | 2.00 | plastic | 90 | 35 | 58 | **446.25** |
| **YSD60S-1204500** | 90 - 264 VAC | 12V | 54 | 4.50 | plastic | 90 | 52.5 | 58 | **680.40** |
| **YSD100S-1207100** | 90 - 264 VAC | 12V | 85 | 7.10 | plastic | 90 | 70 | 58 | **977.55** |
| **YSD15S-2400630** | 90 - 264 VAC | 24V | 15 | 0.63 | plastic | 90 | 18 | 58 | **350.70** |
| **YSD30S-2401500** | 90 - 264 VAC | 24V | 36 | 1.50 | plastic | 90 | 35 | 58 | **446.25** |
| **YSD60S-2402500** | 90 - 264 VAC | 24V | 60 | 2.50 | plastic | 90 | 52.5 | 58 | **680.40** |
| **YSD100S-2404170** | 90 - 264 VAC | 24V | 100 | 4.17 | plastic | 90 | 70 | 58 | **977.55** |
| **YSD150S-24** | 90 - 264 VAC | 24V | 150 | 6.25 | plastic | 90 | 105 | 58 | **1 354.50** |
| **YSD..L series - Slim-line DIN-rail mounting power supplies** | | | | | | | | | |
| The YSD..L series features slim-line AC-DC power supplies designed for applications that demand both space efficiency and reliable power delivery. Classified as Class 2 and Pass LPS (Limited Power Source), these power supplies meet stringent safety standards, significantly reducing the risk of electric shock or fire. | | | | | | | | | |
| • Universal input range *(90 - 264 VAC, 127 - 370 VDC)* • Class 2/ Pass LPS • Built-in "DC OK" relay contact and frontal LED indication • Protection: Short circuit / Overload / Overvoltage | | | | | | | | | |
| **YSD20L-0503000** | 90 - 264 VAC | 5V | 15 | 3.00 | plastic | 92 | 23 | 100 | **505.05** |
| **YSD60L-05006000** | 90 - 264 VAC | 5V | 30 | 5.00 | plastic | 92 | 41 | 100 | **675.15** |
| **YSD20L-1201670** | 90 - 264 VAC | 12V | 20 | 1.67 | plastic | 92 | 23 | 100 | **505.05** |
| **YSD60L-12005000** | 90 - 264 VAC | 12V | 60 | 5.00 | plastic | 92 | 41 | 100 | **773.85** |
| **YSD20L-2401000** | 90 - 264 VAC | 24V | 24 | 1.00 | plastic | 92 | 23 | 100 | **505.05** |
| **YSD60L-24001700** | 90 - 264 VAC | 24V | 41 | 1.70 | plastic | 92 | 41 | 100 | **675.15** |
| **YSD60L-24002500** | 90 - 264 VAC | 24V | 60 | 2.50 | plastic | 92 | 41 | 100 | **773.85** |
| **YSD100L-2404000** | 90 - 264 VAC | 24V | 96 | 4.00 | plastic | 92 | 55 | 100 | **1 281.00** |
| **YSD60L-48001250** | 90 - 264 VAC | 48V | 60 | 1.25 | plastic | 92 | 41 | 100 | **773.85** |
| **YSD100L-4802000** | 90 - 264 VAC | 48V | 96 | 2.00 | plastic | 92 | 55 | 100 | **1 281.00** |
| **YSDW series - DIN-rail mounting power supplies** *(wide input voltage)* | | | | | | | | | |
| The YSDW series offers versatile and reliable wide input range AC-DC power supplies designed for demanding applications. Featuring a **built-in DC OK** relay contact for real-time voltage monitoring and a full corrosion-resistant aluminium casing for enhanced durability, these power supplies ensure stable DC output and long-lasting performance. Ideal for industrial automation, renewable energy systems, and remote locations | | | | | | | | | |
| • Single and two-phase wide input range *(180 - 550 VAC, 254 - 780 VDC)* • Built-in constant current limiting circuit • Built-in "DC OK" relay contact and frontal LED indication • Full corrosion-resistant aluminium casing • Protection: Short circuit / Overload / Over voltage / Over temperature • Safety standards: UL 61010, BS/IEC/EN 61010-1 | | | | | | | | | |
| **YSDW60-12** | 180 - 550 VAC | 12V | 60 | 5.00 | aluminium | 125 | 32 | 114 | **1 312.50** |
| **YSDW60-24** | 180 - 550 VAC | 24V | 60 | 2.50 | aluminium | 125 | 32 | 114 | **1 312.50** |
| **YSDW120-24** | 180 - 550 VAC | 24V | 120 | 5.00 | aluminium | 125 | 40 | 126 | **2 121.00** |
| **YSDW240-24** | 180 - 550 VAC | 24V | 240 | 10.00 | aluminium | 125 | 63 | 126 | **4 021.50** |
| **YSDW120-48** | 180 - 550 VAC | 48V | 120 | 2.50 | aluminium | 125 | 40 | 126 | **2 121.00** |



Above ZAR prices do not include VAT. E&OE

## DIN-rail mounting power supplies

- DC output voltage *(adjustable)*
- 100% full load burn-in test
- Safety standards: UL 508, IEC62368-1, BS/EN62368-1
- EMC standards: EN 55032, EN 61000-3-2,-3 EN61000-4-2,3,4,5,6,8,11



YDD-120-12A

### YDD series - DIN-rail mounting power supplies *(DC - DC)*

Versatile DC-DC converters offering stable DC output, ideal for critical telecommunications and industrial automation, ensuring reliable performance in sensitive environments.

- 150% peak load capability
- Protections: Short circuit / Over load / Over voltage / Input reverse polarity / under voltage protection
- DC output voltage adjustable

| type | input voltage | DC output voltage *(adj)* | rated load (W) | rated load (A) | housing | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **YDD-120-12A** | 9 - 18 VDC | 12V | 100 | 8.3 | aluminium | 126 | 32 | 98 | **2 551.50** |
| **YDD-120-12B** | 17 - 33.6 VDC | 12V | 120 | 10 | aluminium | 126 | 32 | 98 | **2 551.50** |
| **YDD-120-12C** | 33.6 - 67 VDC | 12V | 120 | 10 | aluminium | 126 | 32 | 98 | **2 551.50** |
| **YDD-120-24A** | 9 - 18 VDC | 24V | 100 | 4.2 | aluminium | 126 | 32 | 98 | **2 551.50** |
| **YDD-120-24B** | 17 - 33.6 VDC | 24V | 120 | 5 | aluminium | 126 | 32 | 98 | **2 551.50** |
| **YDD-120-24C** | 33.6 - 67 VDC | 24V | 120 | 5 | aluminium | 126 | 32 | 98 | **2 551.50** |


YDC100-27.6

### YDC series - DIN-rail mounting power supplies *(DC-UPS)*

**Power supply - UPS - Battery charger** *(all-in-one)*

Provides UPS functionality with an external battery *(not supplied)*. Automatically switches to battery during mains failure, maintaining uninterrupted DC output. A secondary DC output recharges the battery when mains power returns.

- Universal input range *(90 - 264 VAC, 127 - 370 VDC)*
- Protection: Short circuit / Overload / Over voltage / Battery low / Reverse polarity *(by fuse)*
- Alarm signal for "AC OK" and "Battery low" with frontal LED indication of "DC OK"


YDC180-27.6

| type | input voltage | DC output voltage (adj) | rated load (W) | rated load (A) | battery charger (A) | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **12VDC systems** | | | | | | | | | |
| **YDC40-13.8** | 90 - 264 VAC | 13.8V | 40 | 1.90 | 1.00 | 92 | 41 | 100 | **929.25** |
| **24VDC systems** | | | | | | | | | |
| **YDC40-27.6** | 90 - 264 VAC | 27.6V | 40 | 0.95 | 0.50 | 92 | 41 | 100 | **929.25** |
| **YDC60-27.6** | 90 - 264 VAC | 27.6V | 59 | 1.40 | 0.75 | 92 | 41 | 100 | **1 092.00** |
| **YDC100-27.6** | 90 - 264 VAC | 27.6V | 96 | 2.25 | 1.25 | 92 | 55 | 100 | **1 533.00** |
| **YDC180-27.6** | 90 - 264 VAC | 27.6V | 180 | 4.55 | 2.00 | 125 | 63 | 127 | **2 929.50** |

### YSDU series - Uninterruptible DC-UPS controller

Combines power supply and battery *(not supplied)* backup, ensuring operational continuity during power loss. Ideal for automation and telecoms, with automatic battery charging when power is restored.

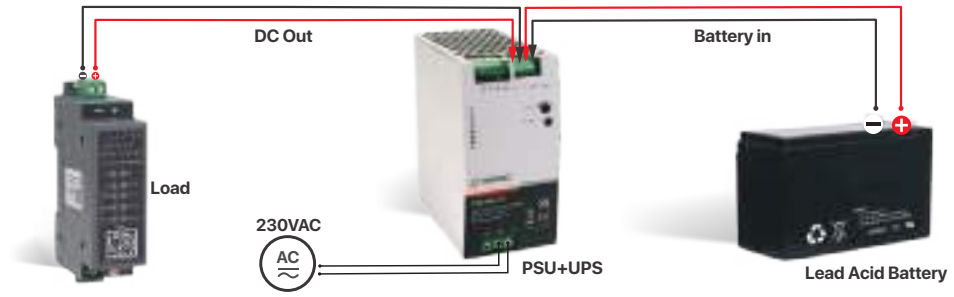
- Parallel connection to DC BUS
- Suitable for 24V systems, up to 40A
- 2A battery charging current
- Allows 4 - 135AH battery capacities
- LED signal status indicators
- Complete diagnostic and monitoring for DC BUS OK, battery discharge and battery failure


YSDU40-24

| type | input voltage | DC output voltage (adj) | rated load (W) | rated load (A) | battery charger (A) | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **YSDU40-24** | 24 - 29 VDC | 21-29V | – | 40 | 2.00 | 125 | 63 | 127 | **1 260.00** |

### All-in-One Solution - DC Power Delivery and Backup

– The YDC series power supplies offer a comprehensive solution for both power delivery and backup.



TR28
2.2

## TR28 series - Control and safety or isolating transformers

Control and safety or isolating single-phase transformers supply high instantaneous power for the correct operation of contactors and other control and switchgear.

- DIN-rail mountable *(up to 400VA)*
- High flexibility - several primary rated voltages (with regulation taps +20V or -20V)
- Serial-parallel secondary bridge pieces for ease of connection
- High capacity clamp terminals *(10 mm² up to 400VA / 25 mm² up to 1250VA)*



680100040

| | |
|---|---|
| Primary voltages: | 240V - 400V - 525V *(with regulation taps + and - 20V)* |
| Secondary voltages: | 12 - 24V (or) 115 - 230V |
| Protection degree: | IP20 protection *(finger safe)* |
| Thermal class: | B (130°C) |
| Class: | Class I |
| Frequency: | 50/60 Hz |
| Dielectric strength: | Primary - secondary > 4.5kV |
| Standards: | IEC/EN 61558-1, IEC/EN 61558-2-2 /-2-4 /-2-6 |



680320042



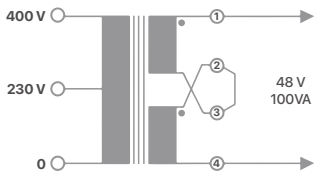
680630042

| type | power (VA) $t_a$ 25°C | power (VA) $t_a$ 40°C | inrush VA | secondary voltage | dimensions (mm) (H) | (W) | (D) | weight kg | price |
|---|---|---|---|---|---|---|---|---|---|
| **TR 28 - Secondary voltage: 12 - 24V** | | | | | | | | | |
| - Primary voltage: | 240V - 400V - 525V | | | | | | | | |
| **680040040** | 40 | 25 | 75 | 12 - 24V | 113 | 84 | 96 | 1.17 | **1 396.50** |
| **680063040** | 63 | 40 | 120 | 12 - 24V | 113 | 84 | 105 | 1.48 | **1 449.00** |
| **680100040** | 100 | 63 | 150 | 12 - 24V | 113 | 84 | 112 | 1.83 | **1 585.50** |
| **680200040** | 200 | 160 | 350 | 12 - 24V | 113 | 84 | 131 | 2.73 | **2 026.50** |
| **680320040** | 320 | 250 | 600 | 12 - 24V | 135 | 108 | 138 | 4.45 | **2 866.50** |
| **680400040** | 400 | 320 | 800 | 12 - 24V | 135 | 108 | 148 | 5.00 | **3 139.50** |
| **680630040** | 630 | 500 | 1275 | 12 - 24V | 152 | 120 | 156 | 7.08 | **4 011.00** |
| **680800040** | 800 | 630 | 1700 | 12 - 24V | 177 | 150 | 140 | 8.68 | **5 890.50** |
| **681000040** | 1000 | 800 | 2100 | 12 - 24V | 177 | 150 | 160 | 11.50 | **6 342.00** |
| **681250040** | 1250 | 1000 | 3300 | 12 - 24V | 177 | 150 | 183 | 14.40 | **9 586.50** |
| **TR 28 - Secondary voltage: 115 - 230V** | | | | | | | | | |
| - Primary voltage: | 240V - 400V - 525V | | | | | | | | |
| **680040042** | 40 | 25 | 75 | 115 - 230V | 113 | 84 | 96 | 1.17 | **1 407.00** |
| **680063042** | 63 | 40 | 120 | 115 - 230V | 113 | 84 | 105 | 1.48 | **1 491.00** |
| **680100042** | 100 | 63 | 150 | 115 - 230V | 113 | 84 | 112 | 1.83 | **1 606.50** |
| **680130042** | 130 | 100 | 230 | 115 - 230V | 113 | 84 | 116 | 1.83 | **1 753.50** |
| **680200042** | 200 | 160 | 350 | 115 - 230V | 113 | 84 | 131 | 2.73 | **2 037.00** |
| **680320042** | 320 | 250 | 600 | 115 - 230V | 135 | 108 | 138 | 4.45 | **2 908.50** |
| **680400042** | 400 | 320 | 800 | 115 - 230V | 135 | 108 | 148 | 5.00 | **3 150.00** |
| **680630042** | 630 | 500 | 1275 | 115 - 230V | 152 | 120 | 156 | 7.08 | **4 074.00** |
| **680800042** | 800 | 630 | 1700 | 115 - 230V | 177 | 150 | 140 | 8.68 | **5 817.00** |
| **681000042** | 1000 | 800 | 2100 | 115 - 230V | 177 | 150 | 160 | 11.50 | **6 751.50** |
| **681250042** | 1250 | 1000 | 3300 | 115 - 230V | 177 | 150 | 183 | 14.40 | **8 641.50** |

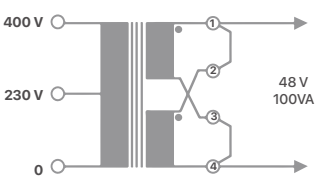
## Secondary connection

* TRANSFORMER 0-230-400V // 24-48V 100VA
REF 610100044

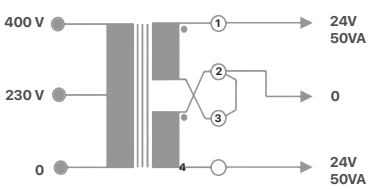
SERIAL CONNECTION




PARALLEL CONNECTION



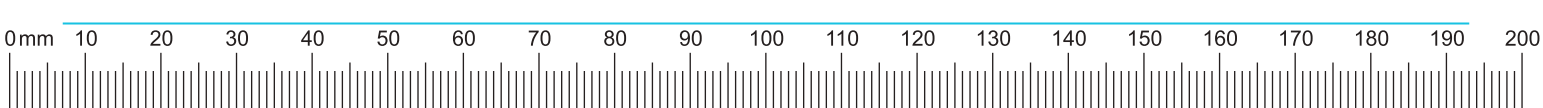

WITH MIDDLE TAP






Above ZAR prices do not include VAT. E&OE

# Notes


0 mm
10
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160
170
180
190
200





C

# Automation

Interactive Catalogue



C

# Automation




Programmable logic controllers (slim-type)

C-1...4



Programmable logic controllers (brick-type)

C-5...6/24



Programmable logic controllers (mid-range)

C-7...10



Programmable logic controllers (high-performance)

C-11...12



Human machine interface (touch screens)

C-13...14



Industrial panel PC

C-16



Servo drives & Motors

C-19...21



Gearboxes for servo motors

C-22



Optical encoders

C-23


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DVP14SS...

## Programmable Logic Controllers (PLCs) - SS2/SA2 series

The **Delta DVP series** Programmable Logic Controllers (PLCs) offer high-speed, stable, and highly reliable control in various industrial automation applications. In addition to fast logic operation, bountiful instructions and multiple function cards, the cost-effective DVP-PLC supports various communication protocols. The DVP-SS2 series is an economical and compact model.

The module-type unit affords tremendous space-saving, allowing simple, clip-on expansion possibilities. The PLC's high performance and extensive I/O units represent a high-value solution for machine control and industrial automation.

**Common characteristics:**

- 32-bit CPU for high-speed processing
- Software: ISPSoft
- Plug-in terminals for ease of wiring and maintenance
- Built-in high-speed counters up to 100 kHz *(model dependent)*
- Compact dimensions *(H) 90 mm x (D) 60 mm* - DIN-rail mounting
- Clip-on extension modules - general *(right-side)* - high-speed *(left-side)* ***SA2** only*
- Supports Modbus RS485: Can connect up to 16 slave devices (VFD, temp controller, PLC)
- Program language: (IL) Instruction list, (LD) Ladder diagram, (SFC) Sequential function chart



DVP12SA2...

### SS2 series - Economic, compact ultra-slim PLC (H) 90 x (D) 60 mm

The compact and economic DVP-SS2 series slim-type PLC provides basic sequential control functions with fast execution speed and enhanced real-time monitoring capability. For use in applications such as textile machines,conveyor belts and winding machines.

Accepts - general *(right-side)* expansion modules only

- Ultra-slim: 25.2 mm
- Max. I/O: 480 points
- Data register: 5k words
- Program capacity: 8k steps
- Built-in RS-232 and RS-485 ports *(Master/Slave)*
- Max. execution speed of basic instructions: 0.35 µs
- Supports standard MODBUS ASCII / RTU protocol and PLC Link function

**Motion control functions:**

- 4 points of 10kHz pulse output
- 8 points of high-speed counters: 20 kHz / 4 points, 10 kHz / 4 points

| type | supply | inputs (DI) | outputs (DO) | description | output type | price |
|---|---|---|---|---|---|---|
| **DVP14SS211R** | 24 VDC | 8 | 6 | compact ultra-slim PLC | relay | **2 908.50** |
| **DVP14SS211T** | 24 VDC | 8 | 6 | compact ultra-slim PLC | transistor (NPN) | **2 908.50** |
| **DVP12SS211S** | 24 VDC | 8 | 4 | compact ultra-slim PLC | transistor (PNP) | **2 908.50** |

### SA2 series - Advanced compact slim PLC (H) 90 x (D) 60 mm

DVP-SA2 series offers larger program capacity and execution efficiency, offering 100 kHz high-speed output and counting functions. It is expandable with DVP-S series left-side and right-side extension modules. For use in applications such as printing machines, dying machines, container fillers and workstation monitoring in the production line.

**DVP12SA** supports general *(right-side)* and high-speed *(left-side)* expansion modules
**DVP28SA** supports general expansion modules *(right-side)* only

- Data register: 10k words
- Program capacity: 16k steps
- Ultra-slim: DVP12SA... / 37.4 mm wide
- Ultra-slim: DVP28SA... / 46 mm wide
- Max. execution speed of basic instructions: 0.35 µs
- Built-in 1 x RS-232 and 2 x RS485 ports *(12SA only)*
- Supports standard Modbus ASCII / RTU protocol and PLC Link function
- No battery required: RTC function operates for up to 15 days after power off



DVP28SA211R

**Motion control functions:**

- Supports 2-axis linear and arc interpolation
- 4 points of high-speed pulse output: 100 kHz / 2 points, 10 kHz / 2 points
- 8 points of high-speed pulse input: 100 kHz / 2 points, 10 kHz / 6 points, 1 set of A/B phase 50 kHz

| type | supply | inputs (DI) | outputs (DO) | description | output type | price |
|---|---|---|---|---|---|---|
| **DVP12SA211R** | 24 VDC | 8 | 4 | advanced slim PLC | relay | **4 116.00** |
| **DVP12SA211T** | 24 VDC | 8 | 4 | advanced slim PLC | transistor (NPN) | **4 116.00** |
| **DVP28SA211R*** | 24 VDC | 16 | 12 | advanced slim PLC | relay | **4 735.50** |
| **DVP28SA211T*** | 24 VDC | 16 | 12 | advanced slim PLC | transistor (NPN) | **4 735.50** |

* *Right-hand side expansion only, 1 x RS485 port*

*Programming cables, see communication cables for PLCs and HMIs page*



Above ZAR prices do not include VAT. E&OE



DVP12SE11R

## Programmable Logic Controllers (PLCs) - SE/SV3/SX3 series

**Delta DVP series** PLCs now expanded to include the new 3rd generation of SX3 and SV3 PLCs delivering more innovative products while meeting the requirements of various applications. Delta PLCs offer a broad range of controllers and modules featuring high-performance CPUs, multiple built-in functions and efficient program editing tools.

In addition to the user-friendly programming software (DIADesigner) and faster execution speed, Delta provides complete industry-focused motion control and industrial fieldbus solutions with new 3rd generation PLC series.

- Compact dimensions - DIN-rail mounting
- Clip-on extension modules - general *(right-side)* - high-speed *(left-side)*

| type | supply | digital inputs | digital outputs | analog inputs | analog outputs | description | output type | price |
|---|---|---|---|---|---|---|---|---|
| **SE series - Network type slim PLC** | | | | | | built-in Ethernet | (H) 90 x (D) 60 mm | |
| Most complete network type slim PLC in the industry. Typical applications include remote device monitoring, production line monitoring, building automation, printing machines and container fillers. | | | | | | | | |
| • Program capacity: 16k steps Data register: 12k words<br>• Software: ISPSoft<br>• Ultra slim: **DVP12SE** - 37.4 mm / **DVP26SE** - 46 mm wide<br>• No battery required: RTC function operates for up to 15 days after power off<br>• 2 x RS485 ports, Ethernet port supports Modbus TCP and EtherNet/IP *(explicit message)* | | | | | | | | |
| **DVP12SE11R** | 24 VDC | 8 | 4 | – | – | network type PLC | relay | **6 877.50** |
| **DVP12SE11T** | 24 VDC | 8 | 4 | – | – | network type PLC | transistor (NPN) | **6 877.50** |
| **DVP26SE11R*** | 24 VDC | 14 | 12 | – | – | network type PLC | relay | **7 707.00** |
| **DVP26SE11T*** | 24 VDC | 14 | 12 | – | – | network type PLC | transistor (NPN) | **7 707.00** |
| * *Right-hand side expansion only, 1 x RS485 port, supports Ethernet/IP adaptor* | | | | | | | | |



DVP28SV3...

**SV3/SX3 series - High performance slim PLC** (H) 90 x (D) 60 mm

SV3/SX3 series high-end PLC providing larger program capacities and data registers for more demanding, complex applications. Increases many motion control instructions to meet high-speed applications, high-precision positioning control for labelling, packaging and printing machines.

- Program capacity: 64k steps Data register: 64k words
- Software: DIADesigner
- Execution speed: 25 ns, support AS APIs
- Delta special driver: Controls 8 Delta servos and 8 Delta motor drives via CANopen
- Built-in mini USB, Micro SD card, 2x RS-485 com ports, CANbus port
- Supports EtherNet/IP, Modbus TCP, CANopen DS301 *(controls up to 64 slaves)*
- Motion control functions high-speed pulse output: 4 axes of 200 kHz pulse output

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **DVP28SV311R** | 24 VDC | 16 | 12 | – | – | high perform. PLC | relay | **9 040.50** |
| **DVP28SV311T** | 24 VDC | 16 | 12 | – | – | high perform. PLC | transistor (NPN) | **9 040.50** |
| **DVP28SV311S** | 24 VDC | 16 | 12 | – | – | high perform. PLC | transistor (PNP) | **9 040.50** |

**SX3 series - Analog I/O slim PLC** *with highly efficient PID control*

The **SX3** series is a compact PLC with built-in analog functions.

- Built-in 4 analog inputs / 2 analog outputs *(12-bit resolution)*

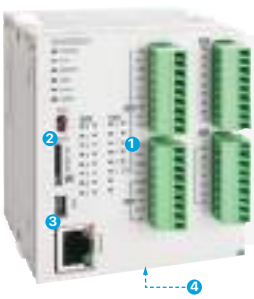
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **DVP20SX311R** | 24 VDC | 8 | 6 | 4 | 2 | analog PLC | relay | **9 040.50** |
| **DVP20SX311T** | 24 VDC | 8 | 6 | 4 | 2 | analog PLC | transistor (NPN) | **9 040.50** |
| **DVP20SX311S** | 24 VDC | 8 | 6 | 4 | 2 | analog PLC | transistor (PNP) | **9 040.50** |



DVP20SX3...

### SV3/SX3 - Delta's new 3rd Gen. PLC

– Enhance your machinery with the Delta DVP 3rd generation PLC, featuring a more powerful CPU, expanded program capacity and advanced communication capabilities.



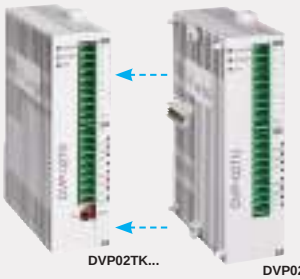

1. Powered by Delta 32 bit CPU 64k steps, supported in **DIADesigner**
2. SD card support for data logging and PLC program backup
3. Ethernet port for Industrial communication, Ethernet/IP / ModbusTCP
4. Built-in CANopen / CANbus

CANopen Modbus EtherNet/IP DIADesigner


DVP08SM11N


DVP04DA-S2


DVP04PT-S


DVP02TK... DVP02TU...


DVPDT01-S

## Extension modules for SS/SA/SE/SX/SV/MC PLCs

Extension modules simply clip onto CPUs to add many additional functions, including additional digital and/or analog I/O's, industrial communication, temperature measurement and load cell monitoring.

**General extension modules** *(right-side mounting)*

| type | supply | inputs (DI) | outputs (DO) | description | output type | price |
|---|---|---|---|---|---|---|
| **Digital input extension modules** | | | | | | |
| **DVP08SM11N** | 24 VDC | 8 | – | extension module | – | **1 281.00** |
| **DVP16SM11N** | 24 VDC | 16 | – | extension module | – | **2 131.50** |
| **DVP32SM11N*** | 24 VDC | 32 | – | extension module | – | **2 740.50** |
| **UB-10-ID32A** | MIL con | 32 | | terminal module for above | DVP32SM | **1 249.50** |
| **UC-ET010-24A** | MIL con | 1 met | | I/O connection cable for above | DVP32SM/SN | **631.05** |
| **Digital output extension modules** | | | | | | |
| **DVP06SN11R** | 24 VDC | – | 6 | extension module | relay (6A) | **2 541.00** |
| **DVP08SN11R** | 24 VDC | – | 8 | extension module | relay (1.5A) | **1 911.00** |
| **DVP08SN11T** | 24 VDC | – | 8 | extension module | transist (NPN) | **1 911.00** |
| **DVP16SN11T** | 24 VDC | – | 16 | extension module | transist (NPN) | **2 614.50** |
| **DVP16SN11TS** | 24 VDC | – | 16 | extension module | transist (PNP) | **2 614.50** |
| **DVP32SN11TN*** | 24 VDC | – | 32 | extension module | transist (NPN) | **3 013.50** |
| * *Pinhead terminations, see page* ***C-18*** | | | | | | |
| **Digital I/O extension modules** | | | | | | |
| **DVP08SP11R** | 24 VDC | 4 | 4 | extension module | relay (1.5A) | **1 995.00** |
| **DVP16SP11R** | 24 VDC | 8 | 8 | extension module | relay (1.5A) | **2 110.50** |
| **DVP08SP11T** | 24 VDC | 4 | 4 | extension module | transist (NPN) | **1 995.00** |
| **DVP16SP11T** | 24 VDC | 8 | 8 | extension module | transist (NPN) | **2 215.50** |
| **DVP16SP11TS** | 24 VDC | 8 | 8 | extension module | transist (PNP) | **2 383.50** |
| **Analog I/O extension modules** | *±10V / ±20mA (output: 0 to 10V or 0/4 to 20 mA)* | | | | | |
| • Built-in RS-485 interface | | (AI) | (AO) | | | |
| **DVP04AD-S2** | 24 VDC | 4 | – | extension module | – | **4 315.50** |
| **DVP06AD-S** | 24 VDC | 6 | – | extension module | – | **4 672.50** |
| **DVP04DA-S2** | 24 VDC | – | 4 | extension module | analog | **6 541.50** |
| **DVP06XA-S2** | 24 VDC | 4 | 2 | extension module | analog | **4 840.50** |
| **Temperature measurement modules** | | | | | | |
| • Resolution: | 0.1°C | inputs | outputs | | sensor | |
| **DVP04PT-S*** | 24 VDC | 4 | – | RTD temperature module | PT100/1000 | **5 187.00** |
| **DVP06PT-S** | 24 VDC | 6 | – | RTD temperature module | PT100/1000 | **6 069.00** |
| **DVP04TC-S*** | 24 VDC | 4 | – | thermocouple temp. module | (J,K,R,S,T) | **5 197.50** |
| * *Built-in RS-485 interface for stand-alone applications* | | | | | | |

**DVP02 series - Temperature control modules** *(universal input)*

DVP02 series offers reliable and flexible integration into complex automation systems, ensuring accurate and optimal temperature regulation.

- Analog inputs: 0 - 10V, 0 - 5V, 0 - 50mV, 0 - 20mA, 4 - 20mA
- Resolution: Analog 16-bit, Sensor: 0.1°C
- Thermocouple: J, K, R, S, T, E, N, B, C, L, U, TXK, PLII
- Control modes: Built-in PID program control / manual control
- RTD: Pt100, JPt100, Pt1000, Cu50, Cu100, Ni100, Ni1000, LG-Ni1000
- Configuration: Using TKSoft *(embedded in ISPSoft)*

| **DVP02TK series** - *Built-in RTU-485* | | (AI) | (AO) | | | |
|---|---|---|---|---|---|---|
| **DVP02TKL-S** | 24 VDC | 2 | 2 | analog output | voltage/current | **4 347.00** |
| **DVP02TKN-S** | 24 VDC | 2 | – | NPN output | 4 x digital out | **4 263.00** |
| **DVP02TKR-S** | 24 VDC | 2 | – | relay output | 4 x digital out | **4 263.00** |
| **DVP02TU series** | | | | | | |
| • Expandable: | Expansion module for DVP02TK Series (Max. 8 modules) | | | | | |
| **DVP02TUL-S** | 24 VDC | 2 | 2 | analog output | voltage/current | **3 549.00** |
| **DVP02TUN-S** | 24 VDC | 2 | – | NPN output | 4 x digital out | **3 549.00** |
| **DVP02TUR-S** | 24 VDC | 2 | – | relay output | 4 x digital out | **3 549.00** |
| **Positioning control module** | *(single axis, 200kHz)* | | | | | |
| **DVP01PU-S** | single-axis, 200kHz | | | servo/stepper position control module | | **7 066.50** |
| **Communication modules** | | | | | | |
| **DVPDT01-S** | DeviceNet | | | slave communication module | | **6 804.00** |
| **DVPPF01-S** | PROFIBUS-DP | | | slave communication module | | **10 353.00** |

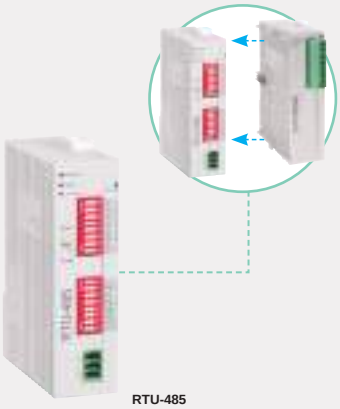


Above ZAR prices do not include VAT. E&OE

EtherCAT Modbus EtherNet/IP



DVP202LC -SL



RTU-485



RTU-ECAT



DVP08ST11N

## High-speed extension modules for SA/SE/SX/SV PLCs *(left-side mount)*

Extension modules simply clip onto CPUs to add many additional functions, additional analog I/Os, communication and load cell monitoring.

- Simply clips onto and derives supply from main the CPU - analogue cards require seperate supply

| type | supply | inputs (AI) | outputs (AO) | description | output type | price |
|---|---|---|---|---|---|---|
| **Analog I/O extension modules** *(left-side high-speed)* | | | | | | |
| • Signal range: | Input: 1- 5V, 0 - 5V, ±5V, 0 -10V, ±10V, 4 - 20mA, 0 - 20mA, ± 20mA<br>Output: 0 - 10V, ±10V, 4 - 20mA, 0 - 20mA | | | | | |
| • Resolution: | 16-bit | | | | | |
| • Conversion time: | 250 µs / Channel | | | | | |
| **DVP04AD-SL** | 24 VDC | 4 | – | extension module | – | **5 932.50** |
| **DVP04DA-SL** | 24 VDC | – | 4 | extension module | analog | **8 494.50** |
| **Load cell modules** *(left-side high-speed)* | | | | | | |
| • Resolution: | 24-bit | | | | | |
| • Measurable range: | 0 - 80mV/V | | | | | |
| • Connectable to: | 4-wire / 6-wire load cell sensor | | | | | |
| • Easy to use LCSoft for configuration and monitoring load cell module (RS-232, RS-485) | | | | | | |
| • DVP211LC-SL has programmable DI/O *(tare, max etc.)* and AO *(retransmission)* | | | | | | |
| **DVP201LC-SL** | 24 VDC | 1 | – | load cell input module | – | **6 163.50** |
| **DVP211LC-SL** | 24 VDC | 1 | 1 | load cell input module | 2DI / 4DO | **9 618.00** |
| **DVP202LC-SL** | 24 VDC | 2 | – | load cell input module | – | **8 683.50** |
| **Communication modules** *(left-side high-speed)* | | | | | | |
| **DVPEN01-SL** | Ethernet / Modbus TCP | | | communication module | 10/100Mbps | **6 888.00** |
| **DVPDNET-SL** | DeviceNet | | | communication module | 500kbps | **6 846.00** |
| **DVPCOPM-SL** | CANopen | | | communication module | 1Mbps | **6 846.00** |
| **DVPSCM12-SL** | RS-485/RS-422 | | | serial communication module | 460kbps | **8 106.00** |
| **DVPSCM52-SL** | BACnet MS/TP | | | slave communication module | 460kbps | **16 695.00** |
| **Remote I/O communication modules** | | | | | | |
| **RTU-485** | Modbus RS-485 | | | max. 8 special modules and 128DI and 128DO | | **2 772.00** |
| **RTU-EN01** | Modbus TCP/IP | | | max. 8 special modules and 128DI and 128DO | | **8 347.50** |
| **RTU-PD01** | PROFIBUS-DP | | | max. 8 special modules and 128DI and 128DO | | **11 130.00** |
| **RTU-ECAT** | EtherCAT | | | max. 8 special modules and 128DI and 128DO | | **4 158.00** |

## Accessories *for S series PLCs*

### Power supply modules *(DIN-rail mounting)*

| | input | output | | | price |
|---|---|---|---|---|---|
| **DVPPS01** | 100-240 VAC | 24 VDC | 1A | power supply module | **939.75** |
| **DVPPS02** | 100-240 VAC | 24 VDC | 2A | power supply module | **1 218.00** |
| **DVPPS05** | 100-240 VAC | 24 VDC | 5A | power supply module | **2 247.00** |

### Accessories and cables

| | | | |
|---|---|---|---|
| **UC-PRG020-12A** | 8-pin mini-DIN+female DB9 connector to USB *(type A)* connector | 2 meter | **1 006.95** |
| **UC-PRG030-01A** | mini USB connector to USB *(type A)* connector | 3 meter | **254.10** |
| **UC-MS030-01A** | 8-pin mini-DIN connector to female DB9 connector RS-232 | 3 meter | **226.80** |
| **IFD6500** | RS-485 to USB (type A) converter module | | **1 134.00** |
| **DVP08ST11N** | 8-point input selector switch module for DVP-S series | | **2 289.00** |
| **DVPPCC01** | program-data backup memory card for all DVP series *(64k words)* | | **2 068.50** |


**DIAStudio**

**Smart Machine Suite**

DIAStudio is a unified engineering platform by Delta that streamlines automation system development. It integrates programming, parameter configuration, and HMI programming, simplifying processes and saving time and costs for machine makers.





**DVP PLC ES3/EX3 series** is the latest version of Delta's brick-type PLC range. Features include a new, enhanced processing unit, larger programming capacity and multiple communication ports with robust network functions and compatibility with DIAStudio. Compared with the previous generation, the ES3 series offers a larger capacity, faster execution speed, and enhanced interoperability.

**Common characteristics:**

- 32-bit CPU for high-speed processing
- Program capacity: 64k steps — Data register: 64k words
- Software: — DIADesigner / ISPSoft
- Min. execution time of basic instruction: 25ns
- Built-in Ethernet port, 2x RS-485 ports, USB port, CANopen port, Micro SD card interface.
- Supports EtherNet/IP, Modbus TCP, CANopen DS301 *(64 Devices)*
- Removable terminal blocks

**Excellent motion control:**

- High-speed counter: 200 kHz x 4 *(A/B phase)*
- High-speed pulse out: 200 kHz x 4 *(pulse + direction)*
- 2-axis interpolation *(linear and arc)*
- 8 axes CANopen point-to-point motion control *(with Delta servo drives only)*



DVP32ES300R



DVP36EX300R



DVP16XP2...

| type | supply | inputs (DI) | outputs (DO) | width (mm) | description | output type | price |
|---|---|---|---|---|---|---|---|
| **ES3 series - Brick-type PLC** | | 230 VAC | | | (H) 90 x (D) 78 mm | | |
| Delta's third generation DVP ES3 series employs the AS series PLCs 32-bit high-speed processor, provides a user-friendly programming interface, 4-high-speed counter inputs, and up to 4-axis control outputs *(pulse)*. | | | | | | | |
| **Applications:** | | | | | | | |
| Packaging machines, precision textile machines, large-scale warehousing, logistics systems etc... | | | | | | | |
| **Relay output** | | | | | | | |
| **DVP32ES300R** | 100-240 VAC | 16 | 16 | 165 | brick-type PLC | relay | **10 605.00** |
| **DVP48ES300R** | 100-240 VAC | 24 | 24 | 216 | brick-type PLC | relay | **11 445.00** |
| **DVP64ES300R** | 100-240 VAC | 32 | 32 | 267 | brick-type PLC | relay | **12 705.00** |
| **DVP80ES300R** | 100-240 VAC | 40 | 40 | 310 | brick-type PLC | relay | **15 015.00** |
| **Transistor output** | | | | | | | |
| **DVP32ES300T** | 100-240 VAC | 16 | 16 | 165 | brick-type PLC | transist (NPN) | **10 605.00** |
| **DVP48ES300T** | 100-240 VAC | 24 | 24 | 216 | brick-type PLC | transist (NPN) | **11 445.00** |
| **DVP64ES300T** | 100-240 VAC | 32 | 32 | 267 | brick-type PLC | transist (NPN) | **12 705.00** |
| **DVP80ES300T** | 100-240 VAC | 40 | 40 | 310 | brick-type PLC | transist (NPN) | **15 015.00** |
| **EX3 series - Analog I/O PLC** | | 230 VAC | | | (H) 90 x (D) 78 mm | | |
| Delta's third generation DVP EX3 series employs the AS series PLCs 32-bit high-speed processor with a user-friendly programming interface, built-in analog I/O, and multiple communication ports. | | | | | | | |
| **Applications:** Processing machines, injection moulding machines, packaging machines, precision textile machines. | | | | | | | |
| • Built-in 2 x 12-bit analog inputs and 2 x 12-bit analog outputs (DVP36EX) | | | | | | | |
| • Built-in PID auto-tuning function, offering a complete analog control solution | | | | | | | |
| | | | | | AI | AO | |
| **DVP22EX300R** | 100-240 VAC | 12 | 8 | 165 | 2 | – | relay | **12 075.00** |
| **DVP36EX300R** | 100-240 VAC | 16 | 16 | 216 | 2 | 2 | relay | **17 115.00** |
| **DVP22EX300T** | 100-240 VAC | 12 | 8 | 165 | 2 | – | transist (NPN) | **12 075.00** |
| **DVP36EX300T** | 100-240 VAC | 16 | 16 | 216 | 2 | 2 | transist (NPN) | **17 115.00** |
| **I/O extension modules for ES/EX series** | | | | | (H) 90 x (D) 78 mm | | |
| • Plugs directly into PLC - 24 VDC - supply derived from MPU *(limited to 12W)* | | | | | | | |
| **Digital input/output modules** | | | | | | | |
| **DVP08XM211N** | 24 VDC | 8 | – | 45 | expansion module | – | **1 596.00** |
| **DVP16XM211N** | 24 VDC | 16 | – | 70 | expansion module | – | **2 845.50** |
| **DVP08XN211R** | 24 VDC | – | 8 | 45 | expansion module | relay | **2 583.00** |
| **DVP16XN211R** | 24 VDC | – | 16 | 70 | expansion module | relay | **4 011.00** |
| **DVP08XP211R** | 24 VDC | 4 | 4 | 45 | expansion module | relay | **2 058.00** |
| **DVP16XP211R** | 24 VDC | 8 | 8 | 70 | expansion module | relay | **3 811.50** |
| **DVP08XN211T** | 24 VDC | – | 8 | 45 | expansion module | transist (NPN) | **2 583.00** |
| **DVP16XN211T** | 24 VDC | – | 16 | 70 | expansion module | transist (NPN) | **4 011.00** |
| **DVP08XP211T** | 24 VDC | 4 | 4 | 45 | expansion module | transist (NPN) | **2 058.00** |
| **DVP16XP211T** | 24 VDC | 8 | 8 | 70 | expansion module | transist (NPN) | **3 811.50** |



Above ZAR prices do not include VAT. E&OE


DVP24XN...


DVP04AD-E2


DVP04PT-E2


DVP16EC00R3


DVPPCC01

## I/O extension modules for ES and EX

- Plugs directly into PLC - 24 VDC - supply derived from MPU *(limited to 12W)*

| type | supply | inputs (DI) | outputs (DO) | width (mm) | description | output type | price |
|---|---|---|---|---|---|---|---|
| **I/O 24/32 modules for ES/EX series** - *230 VAC power supply required* | | | | | | (H) 90 x (D) 78 mm | |
| • Incorporates 24 VDC output supply 100mA (2.4W) for other modules | | | | | | | |
| **DVP24XN200R** | 24 VDC | – | 24 | 145 | expansion module | relay | **5 565.00** |
| **DVP24XP200R** | 24 VDC | 16 | 8 | 145 | expansion module | relay | **4 809.00** |
| **DVP32XP200R** | 24 VDC | 16 | 16 | 145 | expansion module | relay | **6 310.50** |
| **DVP24XN200T** | 24 VDC | – | 24 | 145 | expansion module | transist (NPN) | **5 565.00** |
| **DVP24XP200T** | 24 VDC | 16 | 8 | 145 | expansion module | transist (NPN) | **4 809.00** |
| **DVP32XP200T** | 24 VDC | 16 | 16 | 145 | expansion module | transist (NPN) | **6 310.50** |
| **Analog I/O extension modules for ES/EX series** | | | | | | (H) 90 x (D) 78 mm | |
| **Analog extension modules for ES/EX series** | | | | | | | |
| • Analog input: Voltage: (±10V, ±5V) / Current: (±20mA, 0 - 20mA, 4 - 20mA) | | | | | | | |
| • Analog output: Voltage: (±10V) / Current: (0 - 20mA, 4 - 20mA) | | | | | | | |
| • Resolution: 14-bit | | | | | | | |
| | | AI | AO | | | | |
| **DVP04AD-E2** | 24 VDC | 4 | – | 70 | expansion module | analog inputs | **4 452.00** |
| **DVP02DA-E2** | 24 VDC | – | 2 | 70 | expansion module | analog outputs | **5 187.00** |
| **DVP04DA-E2** | 24 VDC | – | 4 | 70 | expansion module | analog outputs | **6 205.50** |
| **DVP06XA-E2** | 24 VDC | 4 | 2 | 70 | expansion module | analog I/O | **6 205.50** |
| **Temperature measurement modules for ES/EX** | | | | | | (H) 90 x (D) 78 mm | |
| **RTD** | **Pt100, Pt1000, Ni100, Ni1000** - *sensor input / 0-300Ω resistance input* | | | | | | |
| • Resolution: 16-bit | | | | | | | |
| • With PID temperature control | | | | | | | |
| **DVP04PT-E2** | 24 VDC | 4 points | | 70 | resistance Pt100/1000, Ni100/1000 | | **5 754.00** |
| **Thermocouple** | **type J, K, R, S, T, E, N** - *sensor input / -80mV...+80mV voltage input* | | | | | | |
| • Resolution: 20-bit | | | | | | | |
| • With PID temperature control | | | | | | | |
| **DVP04TC-E2** | 24 VDC | 4 points | | 70 | thermocouple J,K,R,S,T,E,N | | **5 754.00** |

## DVP-EC3 series PLC *(Basic)* 230 VAC *(H) 90 x (D) 78 mm*

**DVP-EC3** series is the most economical solution for sequential control and communication monitoring for smaller applications with simple RS-485/MODBUS communication.

- Program capacity: 4k steps
- Mounting: DIN-rail or chassis mounting
- Built-in high-speed counters: 20 kHz x 2 / 10kHz x 2 *(single phase)* or 4kHz x 1 *(A/B phase)*
- MPU I/O points: 10/16/24/32/40 points *(not expandable)*
- COM ports: built-in RS-232 & RS-485 *(only for 16/24/32/40 points)*

| type | supply | inputs (DI) | outputs (DO) | width (mm) | description | output type | price |
|---|---|---|---|---|---|---|---|
| **DVP-EC3 series PLC** *(Basic)* | | | | | | | |
| **DVP10EC00R3** | 100-240 VAC | 6 | 4 | 95 | standard econo PLC | relay | **3 601.50** |
| **DVP16EC00R3** | 100-240 VAC | 8 | 8 | 95 | standard econo PLC | relay | **4 462.50** |
| **DVP24EC00R3** | 100-240 VAC | 12 | 12 | 150 | standard econo PLC | relay | **5 502.00** |
| **DVP32EC00R3** | 100-240 VAC | 16 | 16 | 150 | standard econo PLC | relay | **6 426.00** |
| **DVP40EC00R3** | 100-240 VAC | 24 | 16 | 164 | standard econo PLC | relay | **7 161.00** |

## Accessories for DVP-ES/EX/EC PLC

| | | | | | |
|---|---|---|---|---|---|
| **DVPPCC01** | program-data backup memory card | DVP with RS232 | | *(64k words)* | **2 068.50** |
| **UC-PRG020-12A** | mini-DIN to USB (type-A) | programming cable | 2 m | PLC to PC | **1 006.95** |
| **UC-MS030-01A** | male mini-DIN to female DB9 | programming cable | 3 m | PLC to HMI | **226.80** |
| **DVPAEXT01-E2** | extends distance between I/O modules | | | DVP-ES/EX | **2 310.00** |

DIAStudio
DIASelector Product selection
DIADesigner PLC VFD Servo
DIADesigner-AX Codesys
DIAScreen HMI



**The AS series - Compact modular mid-range PLC**

The AS series is a high-performance multi-purpose controller designed for all types of automated equipment. It features 32-bit SoC CPUs for enhanced execution speed (40k steps/ms), supporting up to 32 extension modules or up to 1,024 inputs/outputs. Providing accurate positioning control for up to 8 axes via CANopen motion network and 6 axes via pulse control (200kHz). Widely used in diverse automated equipment, electronics manufacturing, labelling, food packaging, and textile machines.

Equipped with CANopen and EtherNet/IP network communication for high-speed data transmission. The professional yet simple editing software DIADesigner delivers quick hardware and network configuration with built-in function blocks for different industries with multi-layer password protection for enhanced system security.

- 32-bit CPU for high-speed processing
- Max. execution speed of basic instructions: 25 ns
- Built-in mini USB, micro SD slot RS-232 / 2x RS-485 com ports *(Master/Slave)*, Ethernet IP *(Adaptor and scanner)*
- Rackless design (no-backplane) direct DIN-rail mounting, patented DIN-rail clips for fast module installation



AS164...

| type | supply | digital inputs | digital output | analog inputs | analog output | description | output type | price |
|---|---|---|---|---|---|---|---|---|
| **AS100 series - CPU** | *(64k steps / 64k words)* | | | | | (H) 88 x (W) 156/207/250 x (D) 75mm | | |
| • Communication ports: | USB, Ethernet, 2 x RS-485, CANopen | | | | | | | |
| • PLC width: | **AS13** *(156 mm)* / **AS14** *(207 mm)* / **AS16** *(250 mm)* | | | | | | | |
| **AS132R-A** | 100-240 VAC | 16 | 16 | – | – | AS100 CPU module | relay | **12 285.00** |
| **AS132P-A** | 100-240 VAC | 16 | 16 | – | – | AS100 CPU module | transist (PNP) | **12 285.00** |
| **AS148R-A** | 100-240 VAC | 24 | 24 | – | – | AS100 CPU module | relay | **14 385.00** |
| **AS148P-A** | 100-240 VAC | 24 | 24 | – | – | AS100 CPU module | transist (PNP) | **14 385.00** |
| **AS164R-A** | 100-240 VAC | 32 | 32 | – | – | AS100 CPU module | relay | **16 485.00** |
| **AS164P-A** | 100-240 VAC | 32 | 32 | – | – | AS100 CPU module | transist (PNP) | **16 485.00** |
| **AS200 series - CPU** | *(64k steps / 64k words)* | | | | | (H) 88 x (W) 88 x (D) 96mm | | |
| • Communication ports: | USB, Ethernet, 2 x RS-485, CANopen | | | | | | | |
| • Plug-in terminals: | Screwless *(push-in)* terminals for ease of wiring and maintenance | | | | | | | |
| **AS228R-A** | 24 VDC | 16 | 12 | – | – | AS200 CPU module | relay | **11 130.00** |
| **AS228T-A** | 24 VDC | 16 | 12 | – | – | AS200 CPU module | transist (NPN) | **11 130.00** |
| **AS228P-A** | 24 VDC | 16 | 12 | – | – | AS200 CPU module | transist (PNP) | **11 130.00** |
| **AS218RX-A** | 24 VDC | 8 | 6 | 2 | 2 | AS200 CPU module | relay | **11 130.00** |
| **AS218TX-A** | 24 VDC | 8 | 6 | 2 | 2 | AS200 CPU module | transist (NPN) | **11 130.00** |
| **AS218PX-A** | 24 VDC | 8 | 6 | 2 | 2 | AS200 CPU module | transist (PNP) | **11 130.00** |
| **AS300 series - CPU** | *(128k steps / 64k words)* | | | | | (H) 88 x (W) 88 x (D) 96mm | | |
| • Communication ports: | USB, Ethernet, 2 x RS-485, *(accepts 2 x AS-F function cards)* | | | | | | | |
| • Plug-in terminals: | Screwless *(push-in)* terminals for ease of wiring and maintenance | | | | | | | |
| **AS300N-A** | 24 VDC | – | – | – | – | AS300 CPU module | – | **7 780.50** |
| **AS320T-B** | 24 VDC | 8 | 12 | – | – | AS300 CPU module | transist (NPN) | **11 130.00** |
| **AS320P-B** | 24 VDC | 8 | 12 | – | – | AS300 CPU module | transist (PNP) | **11 130.00** |
| **AS332T-A**✱ | 24 VDC | 16 | 16 | – | – | AS300 CPU module | transist (NPN) | **13 650.00** |
| **AS332P-A**✱ | 24 VDC | 16 | 16 | – | – | AS300 CPU module | transist (PNP) | **13 650.00** |
| **AS324MT-A**❖ | 24 VDC | 12 | 12 | – | – | AS300 CPU module | differential type | **13 650.00** |

✱ *Highdensity MIL terminal block, see page* ***C-18***

❖ *2 axes 4MHz + 4 axes 200kHz output / 2 channels 4MHz + 4 channels 200kHz input*



AS228R-A

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AX-3 CODESYS solution** | *(8MB program capacity)* | | | | | | | |
| • Communication ports: | USB, RS-232/485, Ethernet *(switch)*, EtherCAT *(**AX-3xxE** only)* | | | | | | | |
| • Built-in encoder interface: | 2 x Incremental encoder / 1 x SSI absolute encoder | | | | | | | |
| • Pulse train interface: | 200kHz pulse output: 4 axes / 200kHz high-speed counters: 6 CHs | | | | | | | |
| • Basic instruction: | 5 ns | | | | | | | |
| • Plug-in terminals: | Screwless *(push-in)* terminals for ease of wiring and maintenance | | | | | | | |
| **AX-300NA0PA1** | 24 VDC | – | – | – | – | AX3 CPU module | transist (PNP) | **19 845.00** |
| **AX-324NA0PA1P** | 24 VDC | 16 | 8 | – | – | AX3 CPU module | transist (PNP) | **23 520.00** |
| **EtherCAT CPU** | | | | | | | | |
| **AX-304ELA0PA1P** | 24 VDC | 16 | 8 | – | – | 4 axes P2P CPU | transist (PNP) | **23 520.00** |
| **AX-308EA0MA1T** | 24 VDC | 16 | 8 | – | – | 8 axes AX3 CPU | transist (NPN) | **32 550.00** |
| **AX-8 motion control system** | *(1GB program capacity)* | | | | | | | |
| • Motion control: | Supports up to 16 Delta EtherCAT servos *(min. sync time: 1ms/ 16 axes)* | | | | | | | |
| • Motion commands: | Position, velocity, torque, multi-axis interpolation, E-gear, E-CAM, G-code | | | | | | | |
| • Communication ports: | USB, Ethernet, RS232, RS485, EtherCAT, Profinet slave | | | | | | | |
| • Built-in encoder interface: | 1 x incremental encoder / 1 x SSI absolute encoder | | | | | | | |
| **AX-816EP0CB1P** | 24 VDC | 8 | 8 | – | – | 16 axes AX8 CPU | transist (PNP) | **53 760.00** |

*Up to 128 axes on request*



AX-304ELA0PA1P



Above ZAR prices do not include VAT. E&OE



**AS series - Input/output** *(I/O) modules and accessories*

Includes digital I/O modules *(output/input/mix),* analog I/O modules *(output/input/mix),* temperature measurement modules, load cell modules, communication modules and function cards.

| type | supply | inputs | output | module width | description | output type | price |
|---|---|---|---|---|---|---|---|
| **Digital I/O modules** | | | | | | (H) 88 x (D) 92 mm | |
| • Plug-in, screwless *(push-in)* terminals *(32 and 64 I/O modules have high-density MIL connectors)* | | | | | | | |
| **Input modules** | | | | | | | |
| **AS08AM10N-A** | 24 VDC | 8 DI | – | 25 mm | digital input module | – | **1 554.00** |
| **AS16AM10N-A** | 24 VDC | 16 DI | – | 35 mm | digital input module | – | **3 297.00** |
| **AS32AM10N-A*** | 24 VDC | 32 DI | – | 25 mm | digital input module | – | **4 945.50** |
| **AS64AM10N-A*** | 24 VDC | 64 DI | – | 35 mm | digital input module | – | **7 360.50** |
| **Digital output modules** | | | | | | | |
| **AS08AN01R-A** | 24 VDC | – | 8 DO | 25 mm | digital output mod. | relay (2A) | **2 331.00** |
| **AS08AN01T-A** | 24 VDC | – | 8 DO | 25 mm | digital output mod. | transist (NPN) | **2 331.00** |
| **AS08AN01P-A** | 24 VDC | – | 8 DO | 25 mm | digital output mod. | transist (PNP) | **2 331.00** |
| **AS16AN01R-A** | 24 VDC | – | 16 DO | 35 mm | digital output mod. | relay (2A) | **3 496.50** |
| **AS16AN01T-A** | 24 VDC | – | 16 DO | 35 mm | digital output mod. | transist (NPN) | **3 496.50** |
| **AS16AN01P-A** | 24 VDC | – | 16 DO | 35 mm | digital output mod. | transist (PNP) | **3 496.50** |
| **AS32AN02T-A*** | 24 VDC | – | 32 DO | 25 mm | digital output mod. | transist (NPN) | **5 145.00** |
| **AS64AN02T-A*** | 24 VDC | – | 64 DO | 35 mm | digital output mod. | transist (NPN) | **7 759.50** |
| * *High-density MIL terminal block, see page* ***C-18*** | | | | | | | |
| **Digital mixed I/O modules** | | | | | | | |
| **AS16AP11R-A** | 24 VDC | 8 DI | 8 DO | 35 mm | digital I/O mod. | relay (2A) | **3 297.00** |
| **AS16AP11T-A** | 24 VDC | 8 DI | 8 DO | 35 mm | digital I/O mod. | transist (NPN) | **3 297.00** |
| **AS16AP11P-A** | 24 VDC | 8 DI | 8 DO | 35 mm | digital I/O mod. | transist (PNP) | **3 297.00** |



AS04AD-A

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Analog I/O modules** | | | | | | (H) 88 x (W) 35 x (D) 95 mm | |
| • Single channel on/off setting to enhance overall conversion efficiency | | | | | | | |
| • Wire break detection at 1-5V and 4-20mA | | | | | | | |
| • **Voltage in:** 1-5V, 0-5V, -5...5V, 0-10V, -10...10V | | | | | **Current in:** 4-20mA, 0-20mA, -20...20mA | | |
| • **Voltage out:** 0-10VDC, ±10VDC | | | | | **Current out:** 4-20mA, 0-20mA | | |
| **Analog input module** | | | | | *Hardware resolution: 16-bit* | | |
| **AS02ADH-A** | 24 VDC | 2 AI | – | | (20μs) conversion time | voltage and current input | **7 276.50** |
| **AS04AD-A** | 24 VDC | 4 AI | – | | | voltage and current input | **4 945.50** |
| **AS08AD-B** | 24 VDC | 8 AI | – | | | voltage input | **7 780.50** |
| **AS08AD-C** | 24 VDC | 8 AI | – | | | current input | **7 780.50** |
| **Analog output module** | | | | | *Hardware resolution: 12-bit* | | |
| **AS04DA-A** | 24 VDC | – | 4 AO | 35 mm | | voltage and current output | **6 594.00** |
| **Analog mixed I/O module** | | | | | *Hardware resolution: 16-bit (input) / 12-bit (output)* | | |
| **AS06XA-A** | 24 VDC | 4 AI | 2 AO | 35 mm | | voltage and current input/output | **5 628.00** |



AS08TC-A

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Temperature measurement modules** | | | | | *resolution: 0.1°C* | (H) 88 x (W) 35 x (D) 95 mm | |
| **Pt, Ni temperature sensor** | | | | | | *±0.1% overall accuracy* | |
| • Pt100/1000, Ni100/1000, JPt100, LG-Ni1000, Cu50/100, resistor 0-300/3000Ω | | | | | | | |
| **AS04RTD-A** | 24 VDC | 4 CH | | 35 mm | | Pt, Ni temperature sensor module | **5 722.50** |
| **AS06RTD-A** | 24 VDC | 6 CH | | 35 mm | | Pt, Ni temperature sensor module | **7 129.50** |
| **Thermocouple temperature sensor** | | | | | | ±0.5% overall accuracy | |
| • Thermocouple - J, K, R, S, T, E, N, B; ±100mV | | | | | | | |
| **AS04TC-A** | 24 VDC | 4 CH | | 35 mm | | Thermocouple temperature sensor module | **5 722.50** |
| **AS08TC-A** | 24 VDC | 8 CH | | 35 mm | | Thermocouple temperature sensor module | **8 568.00** |



AS-PS02

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Power supply modules** *(clips onto left-side of CPU)* | | | | | | (H) 88 x (D) 92 mm | |
| **AS-PS02** | 100-240 VAC | 24VDC | 2A | 70 mm | | power supply | **1 648.50** |
| **AS-PS02A** | 100-240 VAC | 24VDC | 1.5A | 70 mm | 0.5A for external I/O | power supply | **1 942.50** |
| **AS-ATXB*** | moves the CPU power connector from left-side to the bottom | | | | | power adaptor | **557.55** |
| * *Used with external power supplies for PLC racks requiring more than 2A supply* | | | | | | | |




**AS series - Input/output** *(I/O) modules and accessories*

Includes digital I/O *(output/input/mix)*, analog I/O *(output/input/mix)*, temperature measurement, load cell, communication and function cards.

For applications including electronics manufacturing, labelling, food packaging, and textile machines.









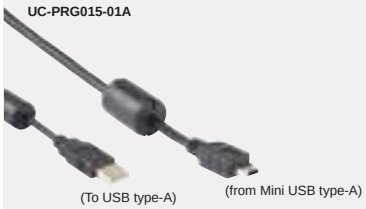




| type | supply | inputs | output | description | price |
|---|---|---|---|---|---|
| **Communication and function modules** | | | | (H) 88 x (W) 56 x (D) 75 mm | |
| **Communication extension module** | | | | *accepts 2 x AS-F communication and/or analog function cards* | |
| • Supports standard Modbus protocols and user-defined protocols | | | | | |
| **AS00SCM-A** | 24 VDC | | | function card module for CPU / remote I/O interface | **4 063.50** |
| *above* **AS00SCM-A** *can receive 2x optional communication / function cards (below)* | | | | | |
| **Communication / Function cards** *(isolated)* | | | | (H) 37 x (W) 24 x (D) 59.3 mm | |
| • Plug directly into AS300 main CPU or AS00SCM-A extension module | | | | | |
| **Communication cards** | | | | | |
| **AS-F232** | RS-232 | | | RS-232 interface for AS300 or AS00SCM-A | **966.00** |
| **AS-F485** | RS-485 | | | RS-485 interface for AS300 or AS00SCM-A | **1 071.00** |
| **AS-FCOPM** | CANopen | | | Canopen DS301 interface for AS300 or AS00SCM-A | **2 425.50** |
| **AS-FPFN02*** | Profinet | | | Profinet Slave interface for AS300 or AS00SCM-A | **6 783.00** |
| **AS-FEN02*** | Ethernet | | | E/IP adaptor or Modbus TCP interface for AS300 or AS00SCM-A | **3 853.50** |
| **AS-FFTP01*** | Ethernet | | | MQTT Client, FTP, OPC-UA and Web Servers for AS300 | **5 124.00** |
| **AS-FECAT*** | EtherCAT | | | Ethercat 16 Axes point-to-point positioning for AS300 | **7 843.50** |
| * *Occupies both function card slots* | | | | | |
| **Analog I/O function cards** | | | | *plug directly into main* **AS300** *CPU or* **AS00SCM-A** *module* | |
| **AS-F2AD** | analog | 2 AI | – | 0-10V (12-bit), 4-20mA (11-bit) | **1 942.50** |
| **AS-F2DA** | analog | – | 2 AO | 0-10V, 4-20mA (12-bit) | **2 331.00** |
| **DeviceNet communication module** | | | | (H) 88 x (W) 35 x (D) 84 mm | |
| • DeviceNet protocol | | | | | |
| • Master / Slave modes | | | | | |
| • RTU function | | | | | |
| **AS01DNET-A** | DeviceNet | | | supports master / slave modes, supports RTU function | **6 814.50** |
| **EtherCAT remote I/O module** | | | | (H) 88 x (W) 56 x (D) 95 mm | |
| • EtherCAT Protocol | | | | | |
| • Supports PDO, SDO, Hot connect | | | | | |
| • Built-in 8 DI *(2CH 200kHz)* / 8 DO *(2 axes 200kHz)* | | | | | |
| • Supports right-side extension with AS series modules | | | | | |
| **ASRTU-EC16AP1TA** | EtherCAT | 8 DI | 8 DO | EtherCAT remote I/O module NPN | **7 759.50** |
| **ASRTU-EC16AP1PA** | EtherCAT | 8 DI | 8 DO | EtherCAT remote I/O module PNP | **7 759.50** |
| **Load cell module** | | | | (H) 88 x (W) 35 x (D) 95 mm | |
| • Max load cell distance: 100m | | | | | |
| • Selectable signal input ranges: 0…1 / 2 / 4 / 20 / 40 / 80 mV/V | | | | | |
| • High-speed dynamic measurement: 2.5 - 400 ms conversion time | | | | | |
| • Supports 4 wire / 6 wire load cell sensor | | | | | |
| **AS02LC-A** | 24 VDC | 2 CH | | 16bit load cell module | **9 397.50** |
| **IO-Link module** | | | | (H) 88 x (W) 35 x (D) 95 mm | |
| • 4 IO-link ports | | | | | |
| • Supported baud rates: 4.8 / 38.4 / 230.4 kbps | | | | | |
| • Max. process data size: 32 bytes *(channel)* / 128 bytes *(module)* | | | | | |
| **AS04SIL-A** | 24 VDC | 4 CH | | I/O link master module | **6 615.00** |
| **Motion modules** | | | | (H) 88 x (W) 35 x (D) 95 mm | |
| **Position module** *(pulse unit module)* | | | | | |
| • Output: 200 kHz x2 | | | | | |
| • Input: 200 kHz x 1 | | | | | |
| **AS02PU-A** | 24 VDC | 2 CH | | differential pulse/position module | **7 329.00** |
| **High-speed counter module** | | | | | |
| • Open collector / Differential | | | | | |
| • Incremental / absolute (SSI) | | | | | |
| **AS02HC-A** | 24 VDC | 2 CH | | 200kHz, high-speed counter module | **8 652.00** |



Above ZAR prices do not include VAT. E&OE









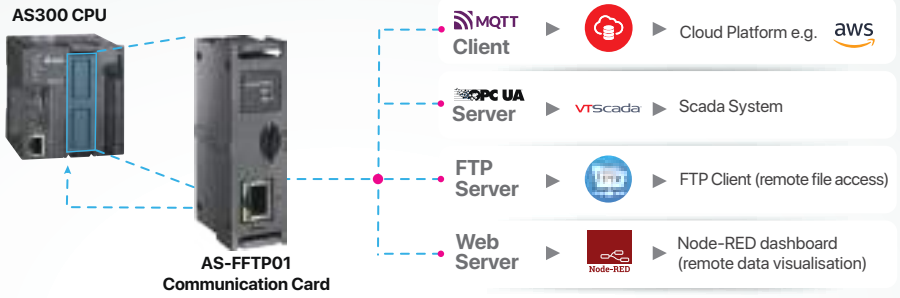

## AS series - Cables and termination accessories

| type | from connector | description | to connector | cable length | price |
|---|---|---|---|---|---|
| **I/O Cables for AS series PLCs** | | | | | |
| **PLC programming cables** | | | | | |
| **UC-PRG015-01A** | mini USB | PLC to PC communication cable | USB type A | 1.5 m | **226.80** |
| **UC-PRG030-01A** | mini USB | PLC to PC communication cable | USB type A | 3 m | **254.10** |
| **UC-PRG030-20A** | RJ45 | PLC/HMI to PC comm. cable | RJ45 | 3 m | **575.40** |
| **Network cables** | | | | | |
| **UC-CMC003-01A** | RJ45 | CANopen / DeviceNet / DMCNET | RJ45 | 0.3 m | **164.85** |
| **UC-CMC005-01A** | RJ45 | CANopen / DeviceNet / DMCNET | RJ45 | 0.5 m | **164.85** |
| **UC-CMC010-01A** | RJ45 | CANopen / DeviceNet / DMCNET | RJ45 | 1 m | **213.15** |
| **UC-CMC020-01A** | RJ45 | CANopen / DeviceNet / DMCNET | RJ45 | 2 m | **316.05** |
| **UC-CMC030-01A** | RJ45 | CANopen / DeviceNet / DMCNET | RJ45 | 3 m | **569.10** |
| **UC-EMC005-02C** | RJ45 | EtherCAT *(high noise immunity)* | RJ45 | 0.5 m | **1 564.50** |
| **UC-EMC010-02C** | RJ45 | EtherCAT *(high noise immunity)* | RJ45 | 1 m | **1 680.00** |
| **UC-EMC020-02C** | RJ45 | EtherCAT *(high noise immunity)* | RJ45 | 2 m | **1 900.50** |
| **UC-EMC050-02C** | RJ45 | EtherCAT *(high noise immunity)* | RJ45 | 5 m | **2 425.50** |
| **UC-EMC005-02B** | RJ45 | EtherCAT communication cable | RJ45 | 0.5 m | **363.30** |
| **UC-EMC010-02B** | RJ45 | EtherCAT communication cable | RJ45 | 1 m | **483.00** |
| **UC-EMC020-02B** | RJ45 | EtherCAT communication cable | RJ45 | 2 m | **676.20** |
| **I/O extension cables** | | for connecting I/O modules and external terminal modules | | | |
| **UC-ET020-24B** | ID 40pin | I/O extension cable *(shielded)* | ID 40pin | 2 m | **1 512.00** |
| **UC-ET030-24B** | ID 40pin | I/O extension cable *(shielded)* | ID 40pin | 3 m | **1 764.00** |
| **UC-ET020-24D** | ID 40pin | I/O extension cable *(shielded)* | 2x ID20pin | 2 m | **2 268.00** |
| **UC-ET030-24D** | ID 40pin | I/O extension cable *(shielded)* | 2x ID20pin | 3 m | **2 646.00** |
| **External terminal modules** | | external terminal modules for digital modules | | H x W | |
| **UB-10-OR16A** | ID 20pin | 16 relay outputs *(NPN to relay)* | screw | 87 x 113 | **2 415.00** |
| **UB-10-OR16B** | ID 20pin | 16 relay outputs *(PNP to relay)* | screw | 87 x 113 | **2 415.00** |
| **UB-10-ID16A** | ID 20pin | 16 inputs/outputs *(NPN / PNP)* | screw | 87 x 67 | **876.75** |
| **UB-10-ID32A** | ID 40pin | 32 inputs | screw | 87 x 113 | **1 249.50** |
| **UB-10-OT32A** | ID 40pin | 32 transistor outputs *(NPN out)* | screw | 87 x 113 | **1 249.50** |
| **UB-10-IO32D** | ID 40pin | 32 transistor outputs *(NPN out)* | screw | 87 x 113 | **2 131.50** |

## **Communications modules** - AS300 series

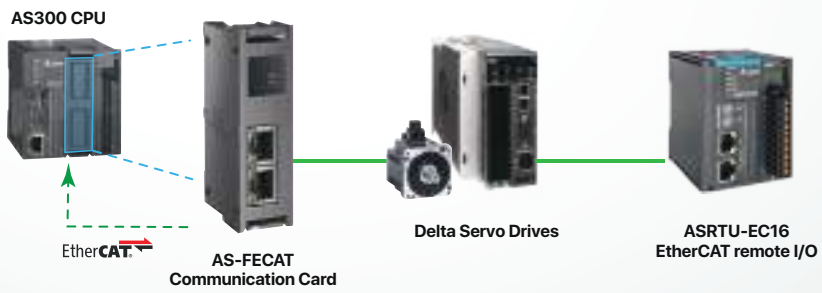
### Industrial Internet of Things (IIoT) Solution:

AS-FFTP01 communication card allows for remote data access, connectivity to SCADA via OPC-UA, and connectivity to cloud via MQTT




### EtherCAT P2P Positioning Solution:

AS-FECAT communication card provides up to 16 axes P2P positioning with Delta Drives and remote I/Os via Ethercat





## AH500 series - Programmable Logic Controllers (PLCs)

AH Series PLC provides automation solutions for high-level applications. Modular hardware structure, advanced functions and highly integrated software provides system solutions for advanced process control. In addition to various function blocks, excellent performance ratio and an abundant selection of extension modules providing exceptional system expansion ability, greatly reducing system cost for a broad range of applications.

- LD / SFC / FBD / IL / ST languages with ISP soft
- Enhanced flexibility: Max. 100 meters between 2 local extension racks
- Redundant system and hot-swapping function keeps systems running for improved maintainability
- CPU built-in with fully isolated RS-232/422/485, Mini-USB, Ethernet, SDHC Card slot
- Expansion modules: DIO, AIO, temperature measurement, network, pulse-train and Ethercat motion control
- Max. I/O points: DIO: Max. 4.352 points AIO: Max. 544 channels
  RIO: Max. 125.440 digital points / 3.920 analog channels
- Program capacity: Max. 1M steps (4 MB) / Data register (D+L) 512K words
- Excellent program execution speed: LD execution speed 0.02 μs



AHCPU500-RS2

| type | local I/O (points) | program capacity (steps) | data register (K words) D | L | B | function blocks | extension backplane | price |
|---|---|---|---|---|---|---|---|---|
| **RS2 series - CPU modules** built-in RS-232/422/485 multi-modes communication port x 2 | | | | | | | | |
| **AHCPU500-RS2** | 768 | 48k (196 KB) | 24 | 24 | 512 | 512 | 0 | **11 760.00** |
| **AHCPU511-RS2** | 1280 | 96k (384 KB) | 48 | 48 | 1024 | 1024 | 1 | **13 545.00** |
| **EN series - CPU modules** *(with built-in EtherNet communication port 100Mbps)* | | | | | | | | |
| • WEB/E-mail/IP Filter function • Built-in Ethernet communication port | | | | | | | | |
| **AHCPU511-EN** | 1280 | 96k (384 KB) | 48 | 48 | 1024 | 1024 | 1 | **30 030.00** |
| **AHCPU521-EN** | 2304 | 192k (768 KB) | 96 | 96 | 2048 | 2048 | 3 | **33 915.00** |
| **AHCPU531-EN** | 4352 | 384k (1.5 MB) | 128 | 128 | 4096 | 4096 | 7 | **38 010.00** |



AHCPU521-EN

### Backplanes

| type | slots | description | price |
|---|---|---|---|
| **AHBP04M1-5A** | 4 | main backplane supports CPU, remote I/O modules | **5 250.00** |
| **AHBP06M1-5A** | 6 | main backplane supports CPU, remote I/O modules | **6 898.50** |
| **AHBP08M1-5A** | 8 | main backplane supports CPU, remote I/O modules | **8 211.00** |
| **AHBP12M1-5A** | 12 | main backplane supports CPU, remote I/O modules | **11 550.00** |
| **AHBP06E1-5A** | 6 | extension backplane supports CPU, remote I/O modules | **7 875.00** |
| **AHBP08E1-5A** | 8 | extension backplane supports CPU, remote I/O modules | **9 187.50** |

### Power supply modules

- Power supply for the modules on the racks

| | | | | | |
|---|---|---|---|---|---|
| **AHPS05-5A** | 60W | 100 - 240 VAC | 50/60Hz | power supply module | **5 911.50** |
| **AHPS15-5A** | 36W | 24 VDC | | power supply module | **5 659.50** |



AHBP06M1-5A

### Digital I/O modules supports hot-swapping function

| type | points in | out | signals | terminal type | description | price |
|---|---|---|---|---|---|---|
| **Input modules** • PNP/NPN mixed mode design • Individual LED status indicator | | | | | | |
| **AH16AM10N-5A** | 16 | – | 24 VDC 5mA | JIS removable | digital input module | **4 221.00** |
| **AH16AM30N-5A** | 16 | – | 120 - 240 VAC | JIS removable | digital input module | **6 237.00** |
| **AH32AM10N-5A** | 32 | – | 24 VDC 5mA | DB33 | digital input module | **8 221.50** |
| **AH32AM10N-5C*** | 32 | – | 24 VDC 5mA | MIL terminal | digital input module | **7 917.00** |
| **AH64AM10N-5C*** | 64 | – | 24 VDC 3.2mA | MIL terminal | digital input module | **12 705.00** |
| **Output modules** | | | | | | |
| **AH16AN01R-5A** | – | 16 | Relay (2A) | JIS removable | digital output module | **5 890.50** |
| **AH16AN01T-5A** | – | 16 | NPN *(Sink)* | JIS removable | digital output module | **4 672.50** |
| **AH16AN01P-5A** | – | 16 | PNP *(Source)* | JIS removable | digital output module | **5 428.50** |
| **AH16AN01S-5A** | – | 16 | TRIAC | JIS removable | digital output module | **6 342.00** |
| **AH32AN02T-5A** | – | 32 | NPN *(Sink)* | JIS removable | digital output module | **8 536.50** |
| **AH32AN02T-5C** | – | 32 | NPN *(Sink)* | EU Removable | digital output module | **7 917.00** |
| **AH32AN02P-5C*** | – | 32 | PNP *(Source)* | MIL terminal | digital output module | **9 051.00** |
| **AH64AN02T-5C*** | – | 64 | NPN *(Sink)* | MIL terminal | digital output module | **12 705.00** |
| **AH64AN02P-5C*** | – | 64 | PNP *(Source)* | MIL terminal | digital output module | **14 490.00** |
| **Mixed input/output** | | | | | | |
| **AH16AP11R-5A** | 8 | 8 | Relay (2A) | JIS removable | digital I/O module | **5 061.00** |
| **AH16AP11T-5A** | 8 | 8 | NPN *(Sink)* | JIS removable | digital I/O module | **4 452.00** |
| **AH16AP11P-5A** | 8 | 8 | PNP *(Source)* | JIS removable | digital I/O module | **4 819.50** |



AHPS05-5A

* *Highdensity MIL terminal block, see page* ***C-18***



Above ZAR prices do not include VAT. E&OE


AH16AM30N-5A


AH32AN02T-5C


AH16AP11R-5A



DIAV...

## AH500 series - Extension modules

| type | points in | points out | signals | terminal type | description | price |
|---|---|---|---|---|---|---|
| **Analog I/O modules** | | | | supports hot-swapping function | | |
| **Analog input modules** | | | | Hardware resolution: 16-bit | | |
| **AH04AD-5A** | 4 | – | 0/1-5V, 0-10V, 0/4-20mA | JIS removable | analog input module | **12 915.00** |
| **AH08AD-5B** | 8 | – | 0/1-5V, 0-10V, ±10V | JIS removable | analog input module | **19 320.00** |
| **AH08AD-5C** | 8 | – | 0/4-20mA, ±20mA | JIS removable | analog input module | **19 425.00** |
| **Analog output modules** | | | | Hardware resolution: 16-bit | | |
| **AH04DA-5A** | – | 4 | 0/1-5V, 0-10V, 0/4-20mA | JIS removable | analog output module | **17 325.00** |
| **AH08DA-5B** | – | 8 | 0/1-5V, 0-10V | JIS removable | analog output module | **20 475.00** |
| **AH08DA-5C** | – | 8 | 0/4-20mA | JIS removable | analog output module | **20 370.00** |
| **Mixed analog input/output** | | | | Hardware resolution: 16-bit | | |
| **AH06XA-5A** | 4 | 2 | 0/1-5V, 0-10V, 0/4-20mA | JIS removable | analog I/O module | **19 005.00** |
| **Temperature measurement modules** | | | | hardware resolution: 20-bit | | |
| **2/3/4-wire RTD input** | | | | | | |
| **AH04PT-5A** | 4 | – | PT100/1000, Ni100/1000, 0-300Ω | JIS removable | temperature module | **19 215.00** |
| **Thermocouple** | | | | | | |
| **AH04TC-5A** | 4 | – | J,K,R,S,T,E,N | JIS removable | temperature module | **13 965.00** |
| **AH08TC-5A** | 8 | – | J,K,R,S,T,E,N | JIS removable | temperature module | **18 060.00** |

## AH500 accessories

| type | signals | terminal type | description | price |
|---|---|---|---|---|
| **Network modules** | | | Supports hot-swapping function | |
| **AH10EN-5A** | Ethernet | | ModbusTCP/Ethernet IP | **20 685.00** |
| **AH10SCM-5A** | RS485 | | Modbus / BacNet *(slave)* | **15 540.00** |
| **Remote I/O RTU modules** | | | module status LED indicator | |
| • Installed on main backplane • Supports max. speed of 1Mbps • Supports 7 extension backplanes | | | | |
| **AHRTU-ETHN-5A** | | Ethernet IP | remote I/O module | **8 778.00** |
| **Motion control modules** | | | module status LED indicator | |
| • UD/PD/AB/4AB modes | | | | |
| High-speed counters | | | | |
| **AH02HC-5A** | 2-channel | EU terminal | 2 high-speed counter channels | **20 685.00** |
| **AH04HC-5A** | 4-channel | HDC terminal | 4 high-speed counter channels | **30 870.00** |
| **Pulse train motion control modules** | | | module status LED indicator | |
| **AH10PM-5A** | | HDC terminal | 6-axis pulse train motion control module | **37 065.00** |

## Cables and accessories for AH500 PLC

| type | standard length | connector type for which modules | price |
|---|---|---|---|
| **AHACAB06-5A** | 0.6 meter | all main extension backplanes | **2 037.00** |
| **AHACAB10-5A** | 1.0 meter | all main extension backplanes | **2 268.00** |
| **AHACAB15-5A** | 1.5 meter | all main extension backplanes | **2 572.50** |
| **AHACAB30-5A** | 3.0 meter | all main extension backplanes | **3 622.50** |
| **AHASP01-5A** | | dummy module to protect empty backplane slots | **487.20** |
| **AHADINADP1-5A** | | DIN-rail adaptor for rack installation | **383.25** |
| **FMC-SD001G** | | SD memory card capacity 1GB | **3 087.00** |
| **HASP-20-OPC01** | | Delta OPC server for AH500 series | **9 502.50** |

## DIAview standalone SCADA system

DIAview provides seamless integration with Delta PLCs, flexible variable management, a robust alarm system, easy VBScript language. Scalable I/O points and USB key-based licensing.

| type | license | description | tags | price |
|---|---|---|---|---|
| **DIAV-010640000C** | 64 points | DIAview SCADA license for | 64 tags | **7 812.00** |
| **DIAV-015120000C** | 512 points | DIAview SCADA license for | 512 tags | **48 090.00** |
| **DIAV-0000005UPC** | upgrade | additional client licences | x 5 | **6 930.00** |
| **DIAV-0000010UPC** | upgrade | additional client licences | x 10 | **15 645.00** |
| **DIAV-0300005UPA** | upgrade | additional web browser licences | x 5 | **37 065.00** |
| **DIAV-0300010UPA** | upgrade | additional web browser licences | x 10 | **48 090.00** |

**DOP-100 series - HMI** *(Human Machine Interface) touch screens*

DOP-100 series HMIs are a versatile and robust touch screen interface that can be combined with over 30 other 3rd party brands and models of PLCs or controllers for effortless communication and reliable operation.

- Pressing Times: >10 000,000
- FTP/email supported: Simple data transmission and real-time status updates-support gmail
- PCB coating: Coating for enhanced durability and to protect against humidity and dust
- Power isolation: Built-in power isolation circuits provides protection against accidental external spikes
- Isolated comm. Interface: built-in serial communication port and Ethernet isolation circuits to protect against noise
- Supports VNC: For remote operation



DOP-103BQ



DOP-107WV





DOP-115MX

| type | display size | version | Ethernet | host ports SD/USB | description | price |
|---|---|---|---|---|---|---|
| **DOP-103** | | | | (H) 103 x (W) 137 x (D) 37.1 mm | | |
| • Resolution: | 480 x 272 pixels | | | | | |
| • Panel cutout: | 92.8 x 118.8 mm | | | | | |
| **DOP-103BQ** | **4.3”** | basic | – | USB | 2x COM ports | **5 638.50** |
| **DOP-103WQ** | **4.3”** | advanced | Yes | USB | 2x COM ports | **7 213.50** |
| **DOP-107** | | | | (H) 161 x (W) 215 x (D) 26.2 mm (BV) / 51.2 mm (EV) | | |
| • Resolution: | 800 x 480 pixels | | | | | |
| • Panel cutout: | 142.9 x 196.9 mm | | | | | |
| **DOP-107BV** | **7”** | basic | – | USB | 2x COM ports | **6 163.50** |
| **DOP-107EV** | **7”** | standard | Yes | USB | 3x COM ports | **8 116.50** |
| **Squared version** | (H) 144 x (W) 184 x (D) 42.8 mm | | | | | |
| • Panel cutout: | 132.4 x 172.4 mm | | | | | |
| **DOP-107EG** | **7”** | standard | Yes | SD/USB | 3x COM ports | **9 765.00** |
| **Narrow border** | (H) 136 x (W) 196 x (D) 32 mm | | | | | |
| • Panel cutout: | *126.8 x 186.8 mm* | | | | | |
| **DOP-107WV** | **7”** | advanced | Yes | SD/USB | 3x COM ports | **9 975.00** |
| **DOP-110** | | | | (H) 200 x (W) 272 x (D) 51.9 mm (CS) / 46mm (IS) | | |
| • Resolution: | 1024 x 600 pixels | | | | | |
| • Panel cutout: | 189.3 x 261.3 mm | | | | | |
| **DOP-110CS** | **10”** | basic | – | – | 3x COM ports | **13 545.00** |
| **DOP-110IS** | **10”** | standard | Yes | SD/USB | 3x COM ports | **14 280.00** |
| **Narrow border** | (H) 180 x (W) 270 x (D) 39 mm | | | | | |
| • Panel cutout: | 170.5 x 255.5 mm | | | | | |
| **DOP-110WS** | **10”** | advanced | Yes | SD/USB | 3x COM ports | **17 745.00** |
| **DOP100-MX** | *Multi-media type* | | | | | |

**DOP100-MX** series adopts a "narrow frame", wide screen design with advanced communication capabilities *(multilingual inputs)* and enhanced multi-media functions.

- 1024 x 768 pixel 8GB ROM
- 1G RAM DDR3 1000Mhz
- Colour - 24bit
- Dual core 1GHz processor for higher computing performance
- Multi-media functions: Camera *(analog / IP)*,video playback , VGA input, event trigger
- Multiple Interfaces: 4 COM ports, 2 Ethernet ports, 1 Mini USB Slave 2.0 / 1 USB Host 2.0

| | | | | | | |
|---|---|---|---|---|---|---|
| **12-inch** | (H) 246.4 x (W) 317.4 x (D) 44 mm | | | | | |
| • Panel cutout: | 228.7 x 302.7 mm | | | | | |
| **DOP-112MX** | **12"** | advanced | Yes | SD/USB | 4 x COM ports | **38 535.00** |
| **15-inch** | (H) 295.7 x (W) x 387.7 (D) 55 mm | | | | | |
| • Panel cutout: | 283.7 x 372.4 mm | | | | | |
| **DOP-115MX** | **15"** | advanced | Yes | SD/USB | 4 x COM ports | **43 785.00** |

**DIAScreen** - New intergrated software platform for DOP100 HMI's - download via DIAStudio

DIAScreen

The DIAScreen application, part of the DIAStudio software suite, allows configuration of Delta DOP, TP, and AX series soft-HMI controllers.

Key features include variable tag sharing with DIADesigner, a user-friendly interface with a 3D image library, improved software download speeds, support for various control elements and functions including recipes and macros, multilingual support, and enhanced security with password and permission features



Above ZAR prices do not include VAT. E&OE


TP04G-AS2

## TP series - Text Panel HMI

Text Panel monochrome text and graphical panel interface between people and machines. Although it is not a vivid and colourful graphical interface, it can still convert many program codes into text and graphics to display on the Text Panel.

Simple operation and control functions, the entire series supports various communication protocols. Light-weight and cost-effective allows users to quickly and easily control the system.

### TP series - Operation interface panel


TP08G-BT2

| type | display size inch / (mm) | function keys | text lines | description | price |
|---|---|---|---|---|---|
| **General features:** | | | | | |
| • Lines of text displayed: 2, 4, 5, or 8 lines text depending on model | | | | | |
| • Can connect panels to windows and setup and control the panel using freely available DIAScreen software | | | | | |
| • Programmable function keys | | | | | |
| • Memory storage card slot to transfer programs between panels | | | | | |
| • STN LCD single-colour | | | | | |
| • Built-in real-time clock | | | | | |
| • 256K flash memory *(1M for TP08)* | | | | | |
| • RS-232/422/485 communication ports | | | | | |
| • Numerical keys with user defined functions available | | | | | |
| **TP04G-AS2** | 3.0" (67 x 32) | 12 | 4-line | operational interface panel | **5 428.50** |
| **TP04G-AL2** | 4.1" (102 x 35) | 10 | 4-line | operational interface panel | **4 903.50** |
| **TP04G-AL-C*** | 4.1" (102 x 35) | 10 | 4-line | operational interface panel | **4 210.50** |
| **TP08G-BT2** | 3.8" (83 x 41) | 24 | 8-line | operational interface panel | **5 953.50** |

* *With RS-232 communication port only*

### Text Panel with built-in PLC functionality *4.1" STN-LCD*


TP04P-16TP1R

The TP04P series is a 4-Line Text Panel HMI with built-in PLC. It adopts a built-in DIO/AIO and combines the functions of a programmable logic controller and touch panel in one device.

The screen displays text or messages with four lines at the same time. It is lightweight, flexible, provides easy-to-control operation, and supports various communication protocols.

**General features:**
- Built-in real-time clock
- Screen size 4.1" *(102 x 35 mm)*
- 2 x RS-485 communication ports
- Program capacity: 8K steps / 5K words
- Built-in USB port for program upload/download
- Integrated PLC and TP in one panel
- PLC link capable

| type | digital inputs | digital outputs | analog inputs | analog outputs | function keys | description | price |
|---|---|---|---|---|---|---|---|
| **TP04P-16TP1R** | 8 | 8 | – | – | 10 | text panel/PLC | **4 924.50** |
| **TP04P-22XA1R** | 8 | 8 | 4 | 2 | 10 | text panel/PLC | **6 184.50** |
| **TP04P-32TP1R** | 16 | 16 | – | – | 10 | text panel/PLC | **5 628.00** |

### Touch panel HMI with built-in PLC *7" (65 535 colour LCD touchscreen)*


TP70P-16TP1R

TP70P HMI/PLC adopts the core of DVP series PLC combined with a 7-inch HMI touch panel.

**General features:**
- Built-in real-time clock
- Screen resolution 800 x 480
- Built-in USB and 2 communication ports
- Provides 2 sets 10kHz high-speed pulse input
- Adopts core of **DVP** series PLC with a program of 8K steps and D devices of 5K words

| type | digital inputs | digital outputs | analog inputs | analog outputs | PT100 inputs | description | price |
|---|---|---|---|---|---|---|---|
| **TP70P-16TP1R** | 8 | 8 | – | – | – | combination HMI/PLC | **7 518.00** |
| **TP70P-32TP1R** | 16 | 16 | – | – | – | combination HMI/PLC | **8 557.50** |
| **TP70P-21EX1R*** | 8 | 8 | 2 | 1 | 2 | combination HMI/PLC | **10 038.00** |
| **TP70P-22XA1R** | 8 | 8 | 4 | 2 | – | combination HMI/PLC | **8 851.50** |

* *Only mA analogs*

### Accessories

| | | |
|---|---|---|
| **UC-PRG020-12A** | TP series program upload/download cable (RS-232) | **1 006.95** |
| **UC-PRG030-02A** | USB type B to USB type A - programming TP-04P/70P | **254.10** |

# D-Bot

## Unleashing Potential

Where Smart Technology Meets Industrial Precision

**Maximum Accuracy**

**Cost Effectiveness**

**Technological Flexibility**

Delta collaborative robots (cobots) are designed to enhance automation with high performance, robust construction, and advanced safety features.

- **High Performance:** Integrated 24-bit encoders and high-precision mechanics
- **Robust Design:** IP66 rating for dust and water resistance and easy cleaning
- **Safety Features:** Advanced safety architecture with collision detection
- **Accuracy:** Secure handling of delicate parts and precise assembly
- **Cost-Effective:** Customizable configurations and easy setup
- **User-Friendly Interface:** no coding experience required



### Synchronisation Powered by CODESYS

The **AX-8** and **CODESYS** solution make it easy and efficient for Cobots to work together seamlessly.

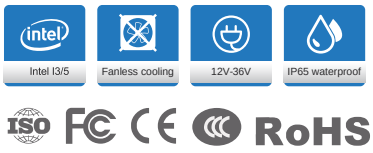


### Which Application Fits You Best ?

Machine Tending | Material Handling | Packaging | Assembly | Pick & Place | IP66

RedDot Winner

Scan to watch




## Industrial Panel PC (PPC)

Unlike regular PCs, industrial panel PCs (PPC) are built to withstand harsh conditions such as extreme temperatures, moisture, dust, and vibration. It is often used in manufacturing plants, warehouses, transportation systems, and other industrial settings where standard computers would be unsuitable.

TPC range of panel PC are designed *(all-in-one structure)* with an integrated industrial monitor and a fanless embedded PC. With capacitive touchscreens for easy interaction, allowing operators to control machinery or monitor processes without the need for external peripherals like keyboards or mice.

### Advantages of Industrial Panel PC

**Durability:** Offer a combination of durability, usability, and functionality for a wide range of industrial applications, contributing to increased efficiency, productivity, and safety in industrial environments.

**Versatility:** Options for different screen sizes, processor capabilities, input / output ports, and expansion slots allow for tailored solutions for various industrial applications.

**Integration:** Panel PCs seamless integration with industrial equipment such as PLCs *(Programmable Logic Controllers)* and SCADA *(Supervisory Control and Data Acquisition)* systems. This allows for real-time monitoring and control of industrial processes, improving efficiency and productivity.

**VTScada:** Discover the perfect synergy between TPC Industrial Panel PCs and VTScada software. Designed to meet and exceed all recommended system requirements, ensuring seamless and optimal performance for VTScada operations.
*See **Category G** for more information*



TPC150-W1010

**Applications:**
- Factory and warehouse digitalisation
- Logistic applications
- Inspection and monitoring of electronic equipment
- Equipment monitoring systems

| type | display size | hard drive capacity | (OS) system | CPU intel | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Industrial Panel PC (PPC) series** | | | | | | | | |



TPC238-W1010

The overall use of a flat aluminium alloy panel, a fanless, fully enclosed integrated design, meets different equipment requirements in various environments.

- 3 mm super thin front bezel *(best for embedded cabinet)*
- Pure flat panel IP65 dust-proof and waterproof
- High-precision aluminium alloy material
- Self-developed fanless X86 architecture industrial motherboard

**General features:**
- CPU core: I3 2-core (2.10 GHz) / I5 4-core (1.6 Ghz)
- RAM: **15"** - 8BG / **19"**, **23"** - 16GB
- Serial COM 2 x RS232
- Operating system: Win 11 included
- Resolution (pixels): **15"** - 1024 x 768 / **19"** - 1440 x 900 / **23"** - 1920 x 1080 TFT LCD
- Supports Mini-PCIe bus: for WiFi communication expansion and more
- Built-in ports 4 x USB 3.0 / 2 x Intel® I211 Gigabit Ethernet Controller RJ45

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Standard Panel PC (PPC)** | | | *(capacitive touch)* | | **IP65** (front panel) | | | |
| **TPC150-W1010** | 15" | 512GB SSD | Win 11 | I3 (10th GEN) | 298 | 379 | 65 | **45 150.00** |
| **Advanced Panel PC (PPC)** | | | *(capacitive touch)* | | **IP65** (front panel) | | | |
| **TPC190-W1010** | 19" | 1TB M.2 | Win 11 | I5 (10th GEN) | 380 | 451 | 63 | **57 225.00** |
| **TPC238-W1010** | 23" | 1TB M.2 | Win 11 | I5 (10th GEN) | 308 | 475 | 57 | **61 320.00** |

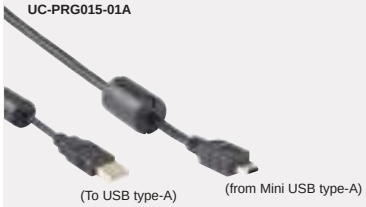
## Panel PC - Features

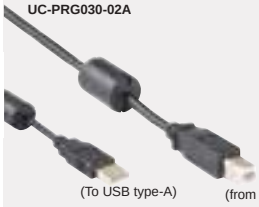



- **Built for Harsh Environments**
  Designed with industrial-grade protection, capable of performing in extreme and rugged conditions
- **IP65-Rated Dust and Water Protection**
  Pure flat-panel construction with IP65 certification, providing robust resistance to dust and water
- **High-Quality Aluminium Alloy Build**
  Crafted from precision aluminium alloy for superior durability and strength
- **Fanless X86 Industrial Motherboard**
  Self-engineered, fanless X86 architecture ensures quiet, reliable operation in industrial settings

## Communication cables for PLCs













| from | 8-pin mini-DIN (male) | DB9 (female) | DB9 (male) | RS-485 | RS-422 | RJ45 | Mini USB | USB Type-B | to | DB9 (female) | DB9 (male) | USB Type-A | RS-232 | RJ45 | Length (met) | for PLC/ HMI | DVP-SS2/SA2/SV2 | DVP-ES2/EX2/EC3 | DVP-SV3/SX3 | DVP-SE | DVP-MC | AS200/300 | AH500 | TP SERIES | DOP-100 | DOP-112 / DOP-115 | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Programming cables** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **UC-PRG020-12A** | • | • | | | | | | | | | | • | | | 2 | | • | • | | | • | | • | • | | | **1 006.95** |
| **UC-PRG015-01A** | | | | | | | • | | | | | • | | | 1.5 | | | | | • | • | | • | • | | | • | **226.80** |
| **UC-PRG030-01A** | | | | | | | • | | | | | • | | | 3 | | | | | • | • | | • | • | | | • | **254.10** |
| **UC-PRG030-02A** | | | | | | | | • | | | | • | | | 3 | | | | | | | | | | • | • | | **254.10** |
| **UC-PRG030-10A** | | • | | | | | | | | • | | | | | 3 | | | | | | | | • | • | | | | **376.95** |
| **UC-PRG030-20A** | | | | | | • | | | | | | | | • | 3 | | | | | • | • | • | • | | • | • | | **575.40** |
| **IFD6500** | | | | • | | | | | | | | • | | | | | • | • | • | • | • | • | • | • | | | | **1 134.00** |
| **IFD8500-A** | | | | • | • | | | | | | | | • | | | | • | • | | • | | | • | • | | | | **1 228.50** |
| **Communication cables** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **UC-MS010-02A*** | • | | | | | | | | | • | | | | | 1 | | • | • | | | • | | | | • | | **226.80** |
| **UC-MS020-06A** | • | | | | | | | | | • | | | | | 2 | | • | • | | | • | | | • | • | | **226.80** |
| **UC-MS030-01A** | • | | | | | | | | | | • | | | | 3 | | • | • | | | • | | | • | • | | **226.80** |
| **UC-MS030-03A** | | • | | | | | | | | | • | | | | 3 | | | | | | | | | • | • | | **390.60** |
| **UC-MS030-04A** | | | • | | | | | | | | • | | | | 3 | | | | | | | | | | • | | **390.60** |
| **UC-MS030-06A** | • | | | | | | | | | | • | | | | 3 | | • | • | | | • | | | | • | | **254.10** |

* *90° angled connector*

### Programming cables — PLC to PC \ HMI to PC

| type | from | to | description | length | price |
|---|---|---|---|---|---|
| **For PLCs -** SS, SA, SV, SX, SX, MC, ES, EC, AS200/300, AH500 *(need male -> male adaptor)* | | | | | |
| **UC-PRG020-12A** | mini-DIN | USB (type-A) | program. cable PLC to PC | 2 meter | **1 006.95** |
| **For PLCs -** *SE, SX, AS200/300, AH500, DOP-100* | | | | | |
| **UC-PRG015-01A** | mini-USB | USB (type-A) | program. cable PLC to PC | 1.5 meter | **226.80** |
| **UC-PRG030-01A** | mini-USB | USB (type-A) | program. cable PLC to PC | 3 meter | **254.10** |
| **UC-PRG030-02A** | USB (type-B) | USB (type-A) | program. cable HMI to PC | 3 meter | **254.10** |
| **UC-PRG030-20A** | RJ45 | RJ45 | program. cable HMI to PC | 3 meter | **575.40** |
| **UC-PRG030-10A** | DB9 (female) | DB9 (female) | RS-232 program. cable | 3 meter | **376.95** |

### Communication cables *(RS-232)* — PLC to HMI

| | | | | | |
|---|---|---|---|---|---|
| **For PLCs -** SS, SA, SV, SX, MC, ES, EC, MC | | | | | |
| **UC-MS010-02A*** | male mini-DIN | female DB9 | cable PLC to HMI | 1 meter | **226.80** |
| **UC-MS030-01A** | male mini-DIN | female DB9 | cable PLC to HMI | 3 meter | **226.80** |
| **UC-MS030-03A** | female DB9 | male DB9 | cable PLC to HMI | 3 meter | **390.60** |
| **UC-MS030-04A** | male DB9 | male DB9 | cable PLC to HMI | 3 meter | **390.60** |

* *90° mini-DIN plug (male)*

| | | | | | |
|---|---|---|---|---|---|
| **Exclusive to DOP103 HMI** *(RS-232)* | | | | | |
| **UC-MS020-06A** | male mini-DIN | male DB9 | cable PLC to HMI | 2 meter | **226.80** |
| **UC-MS030-06A** | male mini-DIN | male DB9 | cable PLC to HMI | 3 meter | **254.10** |

### Industrial network cables

| | | | | | |
|---|---|---|---|---|---|
| **UC-CMC003-01A** | RJ45 | RJ45 | CANopen comm. cable | 0.3 meter | **164.85** |
| **UC-CMC005-01A** | RJ45 | RJ45 | CANopen comm. cable | 0.5 meter | **164.85** |
| **UC-CMC010-01A** | RJ45 | RJ45 | CANopen comm. cable | 1 meter | **213.15** |
| **UC-CMC020-01A** | RJ45 | RJ45 | CANopen comm. cable | 2 meter | **316.05** |
| **UC-CMC030-01A** | RJ45 | RJ45 | CANopen comm. cable | 3 meter | **569.10** |

### Adaptors, splitters and terminal resistors

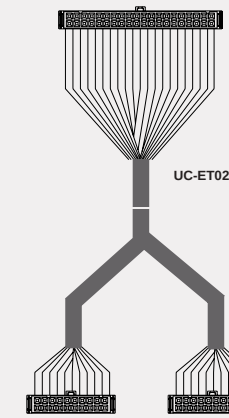
| | | |
|---|---|---|
| **TAP-CN03** | DeviceNet CANopen distribution box, *(RJ45)* 1 to 4 *(Terminator 121Ω)* | **1 680.00** |
| **TAP-TR01** | CANopen *(Terminator, 121 W)* | **69.30** |

### Communication cables - Connector's type






Above ZAR prices do not include VAT. E&OE






UB-10-ID16A UB-10-ID16A

## I/O external screw terminal module

| terminal module | Input unit | Output unit | applicable module / CPU | cable | price |
|---|---|---|---|---|---|
| **UB-10-ID16A** *Supports I/O cards through terminal* | 16 or 16 | | AS332 CPU, AS32AM, AS32AN AS64AM, AS64AN, DVP32SN11TN AH32AN, AH64AN | UC-ET0◆0-24D UC-ET010-24C | **876.75** |
| **UB-10-ID32A** *Supports I/O cards through terminal* | 32 | – | AS32AM, AS64AM, DVP32SM AH32AM10N-5C, AH64AM10N-5C | UC-ET0◆0-24B UC-ET010-24A | **1 249.50** |
| **UB-10-OR16A** *Supports Output Cards NPN switching* | – | 16 relay | AS332T-A, AS32AN02T-A, AS64AN02T-A, DVP32SN11TN, AH32AN02T-5C, AH64AN02T-5C | UC-ET0◆0-24D UC-ET010-24C | **2 415.00** |
| **UB-10-OR16B** *Supports Output Cards PNP switching* | – | 16 relay | AS332P-A, AH32AN02P-5C, AH64AN02P-5C | UC-ET0◆0-24D UC-ET010-24C | **2 415.00** |
| **UB-10-OT32A** *Supports I/O cards through terminal* | – | 32 | AS32AN02T-A, AS64AN02T-A DVP32SN11TN, AH32AN02T-5C, AH32AN02P-5C, AH64AN02T-5C, AH64AN02P-5C | UC-ET0◆0-24B UC-ET010-24A | **1 249.50** |
| **UB-10-IO32D** *Supports I/O cards through terminal* | 16 and 16 | | AS332 CPU | Adaptor board | **2 131.50** |

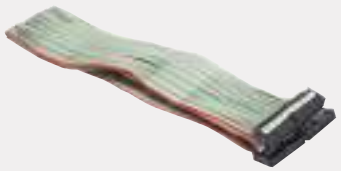
***Note:*** *Replace (◆) **2** (meters) or **3** (meters) to the part number*



UC-ET030-24D

## Cables for terminal modules PLC to terminal board

| type | from | to | description | length | price |
|---|---|---|---|---|---|
| **UC-ET010-24C** | 32 ID40 | 2 x 16 ID20 | ribbon cable for terminal module | 1 meter | **691.95** |
| **UC-ET020-24D** | 32 ID40 | 2 x 16 ID20 | shielded cable for term. module | 2 meter | **2 268.00** |
| **UC-ET030-24D** | 32 ID40 | 2 x 16 ID20 | shielded cable for term. module | 3 meter | **2 646.00** |
| **UC-ET010-24A** | 32 ID40 | 32 ID40 | ribbon cable for terminal module | 1 meter | **631.05** |
| **UC-ET020-24B** | 32 ID40 | 32 ID40 | shielded cable for term. module | 2 meter | **1 512.00** |
| **UC-ET030-24B** | 32 ID40 | 32 ID40 | shielded cable for term. module | 3 meter | **1 764.00** |
| **UC-ET010-13B** | MDR36 | MDR36 | cable for **UB-10-IO16C** board | 1 meter | **2 289.00** |
| **UC-ET010-15B** | MDR50 | MDR50 | cable for **UB-10-IO24C** board | 2 meter | **2 772.00** |



UC-ET010-24A

## For motion control modules

| type | inputs conn. | outputs conn. | output type | cable type | | price |
|---|---|---|---|---|---|---|
| **UB-10-IO16C** | differential | MDR36 | transistor | **UC-ET010-13B** | – | **1 260.00** |
| **UB-10-IO24C** | differential | MDR50 | transistor | **UC-ET010-15B** | – | **1 386.00** |



UB-10-ID32A

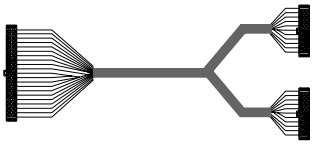
Accessory selection for high-density modules

**Part number**

AS332T-A
AS332P-A
AS324MT-A



UC-ET010-24 C(1M)
UC-ET010-24 D(1M)
UC-ET020-24 D(2M)
UC-ET030-24 D(3M)



UB-10-ID16 A



UB-10-ID16A (NPN/PNP)
UB-10-OR16A (NPN to Relay)
UB-10-OR16B (PNP to Relay)



or



**ASD series - Servo drives (100 W - 15 kW)** *(high-precision, total control)*

The Standard Delta Servo System features high tolerance, stable operation, and high-precision motion control functions. Creating a highly efficient, user-friendly operating environment for equipment while optimising production efficiency and output value.

- Optimised performance - high response bandwidth
- Vibration suppression functions
- For servo cable selection chart, *see* ***Annex-10***
- Self-Diagnosis and adaptation

| series | part No last digit | PT Mode pulse train | PR Mode | RS-485 | analog voltage control | Ether CAT | CAN open | full closed loop control | E-CAM | STO |
|---|---|---|---|---|---|---|---|---|---|---|
| B3A | -E *(EtherCAT)* | • | • | – | • | • | – | – | – | • |
| | -M *(CANopen)* | • | • | • | • | – | • | – | – | • |
| A2 | -M *(CANopen)* | • | • | • | • | – | • | • | • | – |
| A3 | -E *(EtherCAT)* | – | • | – | – | • | – | • | • | • |
| | -M *(CANopen)* | • | • | • | • | – | • | • | • | • |


ASD-B3A-0421-E


ASD-A3-0421-E


ASD-A3-1521-M


ASD-A3-2043-M

| type | input power | supply | frequency response | motion network | price |
|---|---|---|---|---|---|
| **B3A series - Econo servo drives** | | | | | |
| **CANopen - M** | PT/PR mode, RS-485, analog voltage control, CANopen, STO | | | | |
| **ASD-B3A-0421-M** | 400 W | 220V 1ph | 3.1kHz | CANopen motion control | **11 445.00** |
| **ASD-B3A-0721-M** | 750 W | 220V 1ph | 3.1kHz | CANopen motion control | **12 810.00** |
| **ASD-B3A-1021-M** | 1.0 kW | 220V 1ph | 3.1kHz | CANopen motion control | **12 915.00** |
| **ASD-B3A-1521-M** | 1.5 kW | 220V 1ph | 3.1kHz | CANopen motion control | **16 380.00** |
| **EtherCAT - E** | PT/PR mode, analog voltage control, EtherCAT, STO | | | | |
| **ASD-B3A-0421-E** | 400 W | 220V 1ph | 3.1kHz | EtherCAT motion control | **13 230.00** |
| **ASD-B3A-0721-E** | 750 W | 220V 1ph | 3.1kHz | EtherCAT motion control | **14 595.00** |
| **ASD-B3A-1021-E** | 1.0 kW | 220V 1ph | 3.1kHz | EtherCAT motion control | **14 805.00** |
| **ASD-B3A-1521-E** | 1.5 kW | 220V 1ph | 3.1kHz | EtherCAT motion control | **18 165.00** |
| **A2 series - Advanced servo drives** | | | | | |
| **CANopen - M** | | | | | |
| • PT/PR mode, RS-485, analog voltage control, CANopen, full closed loop control, E-CAM | | | | | |
| **ASD-A2-0121-M** | 100 W | 220V 1ph | 1kHz | CANopen motion control | **15 540.00** |
| **ASD-A2-0421-M** | 400 W | 220V 1ph | 1kHz | CANopen motion control | **16 065.00** |
| **ASD-A2-0721-M** | 750 W | 220V 1ph | 1kHz | CANopen motion control | **17 220.00** |
| **ASD-A2-1021-M** | 1.0 kW | 220V 1ph | 1kHz | CANopen motion control | **17 745.00** |
| **ASD-A2-1521-M** | 1.5 kW | 220V 1ph | 1kHz | CANopen motion control | **22 365.00** |
| **A3 series - Advanced servo drives** | | | 3rd generation slim-line servo drive | | |
| **EtherCAT - E** | | | | | |
| • PR mode, EtherCAT, Full closed loop control, E-CAM, STO | | | | | |
| **ASD-A3-0121-E** | 100 W | 220V 1ph | 3.1kHz | EtherCAT motion control | **13 020.00** |
| **ASD-A3-0421-E** | 400 W | 220V 1ph | 3.1kHz | EtherCAT motion control | **13 230.00** |
| **ASD-A3-0721-E** | 750 W | 220V 1ph | 3.1kHz | EtherCAT motion control | **14 910.00** |
| **ASD-A3-1021-E** | 1.0 kW | 220V 1ph | 3.1kHz | EtherCAT motion control | **15 540.00** |
| **ASD-A3-1521-E** | 1.5 kW | 220V 1ph | 3.1kHz | EtherCAT motion control | **18 585.00** |
| **ASD-A3-2043-E** | 2.0 kW | 400V 3ph | 3.1kHz | EtherCAT motion control | **23 520.00** |
| **ASD-A3-3043-E** | 3.0 kW | 400V 3ph | 3.1kHz | EtherCAT motion control | **27 930.00** |
| **ASD-A3-4543-E** | 4.5 kW | 400V 3ph | 3.1kHz | EtherCAT motion control | **27 510.00** |
| **ASD-A3-5543-E** | 5.5 kW | 400V 3ph | 3.1kHz | EtherCAT motion control | **35 385.00** |
| **ASD-A3-7543-E** | 7.5 kW | 400V 3ph | 3.1kHz | EtherCAT motion control | **55 440.00** |
| **ASD-A3-1B43-E** | 11.0 kW | 400V 3ph | 3.1kHz | EtherCAT motion control | **55 335.00** |
| **ASD-A3-1F43-E** | 15.0 kW | 400V 3ph | 3.1kHz | EtherCAT motion control | **64 890.00** |
| **CANopen - M** | | | | | |
| • PT/PR mode, RS-485, analog voltage control, CANopen, full closed loop control, E-CAM, STO | | | | | |
| **ASD-A3-0121-M** | 100 W | 220V 1ph | 3.1kHz | CANopen motion control | **12 915.00** |
| **ASD-A3-0421-M** | 400 W | 220V 1ph | 3.1kHz | CANopen motion control | **12 915.00** |
| **ASD-A3-0721-M** | 750 W | 220V 1ph | 3.1kHz | CANopen motion control | **14 700.00** |
| **ASD-A3-1021-M** | 1.0 kW | 220V 1ph | 3.1kHz | CANopen motion control | **15 225.00** |
| **ASD-A3-1521-M** | 1.5 kW | 220V 1ph | 3.1kHz | CANopen motion control | **18 270.00** |
| **ASD-A3-2043-M** | 2.0 kW | 400V 3ph | 3.1kHz | CANopen motion control | **22 575.00** |
| **ASD-A3-3043-M** | 3.0 kW | 400V 3ph | 3.1kHz | CANopen motion control | **26 985.00** |
| **ASD-A3-4543-M** | 4.5 kW | 400V 3ph | 3.1kHz | CANopen motion control | **26 565.00** |
| **ASD-A3-5543-M** | 5.5 kW | 400V 3ph | 3.1kHz | CANopen motion control | **34 440.00** |
| **ASD-A3-7543-M** | 7.5 kW | 400V 3ph | 3.1kHz | CANopen motion control | **54 495.00** |
| **ASD-A3-1B43-M** | 11.0 kW | 400V 3ph | 3.1kHz | CANopen motion control | **54 705.00** |
| **ASD-A3-1F43-M** | 15.0 kW | 400V 3ph | 3.1kHz | CANopen motion control | **64 155.00** |


Above ZAR prices do not include VAT. E&OE



ECM-B3M-CM0604RJ1



ECM-B3M-E21315RS1



ECMA-E11315RS

## ECMA Motors *(for B3A, A2, A3 servo drives)*

| type | output power | rated speed rpm | rated torque (Nm) | max. torque (Nm) | dimensions (mm) PCD | flange | shaft ø | price |
|---|---|---|---|---|---|---|---|---|
| **A3/B3 servo motors - 24 bit** incremental optical encoder | | | | | | **IP67** connector | | |
| **Motors for single-phase 220 VAC servo drives** | | | | | | | | |
| **ECM-B3L-CM0401RJ1*** | 100 W | 3000 | 0.32 | 1.12 | 46 | 40 x 40 | 8 | **7 098.00** |
| **ECM-B3M-CM0604RJ1*** | 400 W | 3000 | 1.27 | 4.45 | 70 | 60 x 60 | 14 | **7 098.00** |
| **ECM-B3M-CM0807RJ1*** | 750 W | 3000 | 2.40 | 8.40 | 90 | 80 x 80 | 19 | **7 917.00** |
| **ECM-B3M-C21010RS1** | 1.0 kW | 3000 | 3.18 | 9.54 | 115 | 100 x 100 | 22 | **12 390.00** |
| **ECM-B3M-E21315RS1** | 1.5 kW | 3000 | 4.77 | 14.30 | 145 | 130 x 130 | 22 | **16 905.00** |
| **Motors for single-phase 220 VAC servo drives**- *with built-in 24VDC brake* | | | | | | | | |
| **ECM-B3M-CM0604SJ1*** | 400 W | 3000 | 1.27 | 4.45 | 70 | 60 x 60 | 14 | **13 650.00** |
| **ECM-B3M-CM0807SJ1*** | 750 W | 3000 | 2.40 | 8.40 | 90 | 80 x 80 | 19 | **14 385.00** |
| **Motors for three-phase 400 VAC servo drives** | | | | | | | | |
| **ECM-B3M-K21320RS1** | 2.0 kW | 2000 | 9.55 | 28.65 | 145 | 130 x 130 | 22 | **16 695.00** |
| **ECM-B3M-L21830RS1** | 3.0 kW | 1500 | 19.1 | 57.29 | 200 | 180 x 180 | 35 | **31 500.00** |
| **ECM-B3M-L21845RS1** | 4.5 kW | 1500 | 28.65 | 71.6 | 200 | 180 x 180 | 35 | **38 640.00** |
| **ECM-B3M-L21855R31** | 5.5 kW | 1500 | 35.01 | 105 | 200 | 180 x 180 | 42 | **49 245.00** |
| **ECM-B3M-LA1875R31** | 7.5 kW | 1500 | 47.75 | 119 | 200 | 180 x 180 | 42 | **63 210.00** |
| **ECM-B3M-LA221BR31** | 11 kW | 1500 | 70.03 | 175 | 235 | 220 x 220 | 42 | **96 075.00** |
| **ECM-B3M-LA221FR31** | 15 kW | 1500 | 95.49 | 238.5 | 235 | 220 x 220 | 55 | **124 950.00** |
| **A2/A3/B3 servo motors - 20 bit** incremental encoder | | | | | | | | |
| **Motors for single-phase 220 VAC servo drives** | | | | | | | | |
| **ECMA-C10401RS** | 100 W | 3000 | 0.32 | 0.96 | 46 | 40 x 40 | 8 | **8 463.00** |
| **ECMA-C10604RS** | 400 W | 3000 | 1.27 | 3.82 | 70 | 60 x 60 | 14 | **10 710.00** |
| **ECMA-C10807RS** | 750 W | 3000 | 2.39 | 7.16 | 90 | 80 x 80 | 19 | **11 655.00** |
| **ECMA-C11010RS** | 1.0 kW | 3000 | 3.18 | 9.54 | 115 | 100 x 100 | 22 | **17 325.00** |
| **ECMA-E11315RS** | 1.5 kW | 2000 | 7.16 | 21.48 | 145 | 130 x 130 | 22 | **21 840.00** |
| **Motors for single-phase 220 VAC servo drives**- *with 24 VDC brake* | | | | | | | | |
| **ECMA-C10807SS** | 750 W | 3000 | 2.39 | 7.16 | 90 | 80 x 80 | 19 | **22 470.00** |
| **ECMA-C11010SS** | 1.0 kW | 3000 | 3.18 | 9.54 | 115 | 100 x 100 | 22 | **26 355.00** |
| **ECMA-E11315SS** | 1.5 kW | 2000 | 7.16 | 21.48 | 145 | 130 x 130 | 22 | **32 550.00** |
| **Motors for three-phase 400 VAC servo drives** - *with 24 VDC brake* | | | | | | | | |
| **ECMA-K11320SS** | 2.0 kW | 2000 | 9.55 | 28.65 | 145 | 130 x 130 | 22 | **32 445.00** |
| **ECMA-L11830SS** | 3.0 kW | 1500 | 19.10 | 57.29 | 200 | 180 x 180 | 35 | **52 500.00** |
| **ECMA-L11845SS** | 4.5 kW | 1500 | 28.65 | 71.6 | 200 | 180 x 180 | 35 | **64 470.00** |

* *17-bit magnetic encoder*

# Delta A3 Servo Series:

## Unmatched Precision and Performance for Modern Automation

As the market of automated manufacturing rapidly develops, the need for servo products with higher performance, speed, precision, bandwidth, and functionality is widely increasing. To meet the requirements of the motion control market for industrial manufacturing machines, Delta presents a new high-end AC servo system, the ASDA-A3 series, with features such as multi-functionality, high-performance, energy-efficiency (DC-Bus sharing), and compact design.



Scan here


ASD-CAPWA205


ASD-CAEN1105


ASD-CAEN1005


ASD-BM-50A

## Cables and accessories for Servo drives and motors

| type | for drive | motor frame size | motor rating | with brake | description | cable length | price |
|---|---|---|---|---|---|---|---|
| **Power cables** | | | | | | | |
| **ACS3-CAPW1105** | A3/B3 | F40-80 | 100-750 W | – | motor power cable | 5 m | **844.20** |
| **ACS3-CAPW5105** | A3/B3 | F40-80 | 100-750 W | – | IP67 motor power cable | 5 m | **1 449.00** |
| **ACS3-CAPWA205** | A3/B3 | F100-130 | 1-2 kW | – | motor power cable | 5 m | **3 097.50** |
| **ACS3-CRPWA305** | A3/B3 | F100-130 | 1-2 kW | – | cable with 90º connector | 5 m | **4 210.50** |
| **ACS3-CAPWC405** | A3 | F180 | 3/4.5 kW | – | motor power cable | 5 m | **4 368.00** |
| **ACS3-CRPWC405** | A3 | F180 | 3/4.5 kW | – | cable with 90º connector | 5 m | **4 336.50** |
| **ACS3-CAPWE605** | A3 | F180-220 | 5.5-15 kW | – | motor power cable | 5 m | **9 376.50** |
| **ASD-ABPW0005** | A2 | F40-80 | 100-750 W | – | motor power cable | 5 m | **1 585.50** |
| **ASD-CAPW1005** | A2 | F100-130 | 1/1.5 kW | – | motor power cable | 5 m | **2 268.00** |
| **Brake cables** | | | | | | | |
| **ACS3-CAPW2105** | A3/B3 | F40-80 | 100-750 W | yes | motor brake cable | 5 m | **905.10** |
| **ACS3-CAPW6105** | A3/B3 | F40-80 | 100-750 W | yes | IP67 motor brake cable | 5 m | **1 722.00** |
| **ASD-ABPW0105** | A2 | F40-80 | 100-750 W | yes | motor brake cable | 5 m | **1 638.00** |
| **ASD-CAPW1105** | A2 | F100-130 | 1-1.5 kW | yes | motor brake cable | 5 m | **2 730.00** |
| **ASD-CAPW1305** | A2 | F130 | 2 kW | yes | motor brake cable | 5 m | **3 874.50** |
| **ASD-CAPW2305** | A2 | F180 | 3-4.5 kW | yes | motor brake cable | 5 m | **4 725.00** |
| **Encoder cables** | | | | | | | |
| **ACS3-CAEN0105** | A3/B3 | F40-80 | 100-750 W | | standard encoder cable | 5 m | **2 058.00** |
| **ACS3-CAEN1105** | A3/B3 | F40-80 | 100-750 W | | encoder cable IP67 conn. | 5 m | **1 963.50** |
| **ACS3-CAENA105** | A3/B3 | F100-220 | 1-15 kW | | standard encoder cable | 5 m | **2 352.00** |
| **ASD-ABEN0005** | A2 | F40-80 | 100-750 W | | standard encoder cable | 5 m | **1 575.00** |
| **ASD-CAEN1005** | A2 | F100-130 | 1-1.5 kW | | standard encoder cable | 5 m | **2 541.00** |
| **Power connectors - for servo drives and motors** | | | | | | | |
| **ASDBCAPW0000** | A2/A3/B3 | F40-80 | 100-750 W | – | std power connector | | **60.90** |
| **ASDBCAPW0100** | A2/A3/B3 | F40-80 | 100-750 W | yes | brake power connector | | **105.00** |
| **ACS3-CNPW1A00** | A3/B3 | F40-80 | 100-750 W | yes | IP67 power connector | | **357.00** |
| **ACS3-CAPWA000** | A3/B3 | F100-130 | 1-2 kW | – | Mil-spec power conn. | | **609.00** |
| **ACS3-CRPWA000** | A3/B3 | F100-130 | 1-2 kW | – | 90º Mil-spec power conn. | | **696.15** |
| **ACS3-CAPWC000** | A3/B3 | F180 | 3-4.5 kW | – | Mil-spec power conn. | | **826.35** |
| **ACS3-CAPWE000** | A3/B3 | F180-220 | 7.5-15 kW | – | Mil-spec power conn. | | **2 404.50** |
| **ASD-CAPW1000** | A2 | F100-130 | 1-2 kW | yes | Mil-spec power conn. | | **1 102.50** |
| **ASD-CAPW2000** | A2 | F180-220 | 3-7.5 kW | yes | Mil-spec power conn. | | **1 459.50** |
| **Encoder connectors** | | | | | | | |
| **ACS3-CNENC200** | A3/B3 | F40-220 | 0.1-15 kW | | encoder connection to drive | | **208.95** |
| **ACS3-CNEN2A00** | A3/B3 | F40-80 | 100-750 W | | IP67 connection to motor | | **391.65** |
| **ACS3-CAENA000** | A3/B3 | F100-180 | 1-15 kW | | Mil-spec power conn. | | **565.95** |
| **ASD-ABEN0000** | A2 | F40-80 | 100-750 W | | connection to motor | | **626.85** |
| **ASD-CAEN1000** | A2 | F100-130 | 1-1.5 kW | | connection to motor | | **1 575.00** |
| **Servo drive accessories** | | | | | | | |
| **ASD-CNSC0050** | 50-pin solder plug | | | for series | ASD-A2 | | **548.10** |
| **ASD-IF-SC5020** | 20-pin adaptor | | | for series | ASD-A2 | | **1 218.00** |
| **ASD-BM-50A** | 50-pin breakout board | | | for series | ASD-A2 | | **3 937.50** |
| **ACS3-CNADC150** | 50-pin CN1 I/O connector | | | for series | ASD-A3-M | | **557.55** |
| **ASD-CNSC0026** | 26-pin CN1 I/O connector | | | for series | ASD-A3-E | | **687.75** |
| **ACS3-IFSC5020** | 20-pin CN1 quick connector | | | for series | ASD-A3-M | | **1 113.00** |
| **ACS3-MDTB5000** | 50-pin CN1 break out module | | | for series | ASD-A3-M | | **4 305.00** |
| **ACS3-CAADC1** | A2 to A3 CN1 conversion cable | | | for series | ASD-A3 | | **2 866.50** |
| **ACS3-CAADC2** | A2 to A3 CN2 conversion cable | | | for series | ASD-A3 | | **2 992.50** |
| **ACS3-CAADC5** | A2 to A3 CN5 conversion cable | | | for series | ASD-A3 | | **253.05** |
| **ACS3-CNTB0500** | 26-pin CN1 I/O connector | | | for series | ASD-B3A | | **157.50** |
| **ACS3-IFSC2626** | 26-pin CN1 quick connector | | | for series | ASD-B3A | | **1 176.00** |
| **ACS3-MDTD2600** | 26-pin CN1 break out module | | | for series | ASD-B3A | | **2 761.50** |
| **ACS3-CABDC2** | B2 to B3 CN2 conversion cable | | | for series | ASD-B3A | | **913.50** |
| **UC-CMC010-01A** | CANopen comms cable RJ45 | | | for series | ASD-M | 1 m | **213.15** |
| **UC-EMC010-02B** | EtherCAT comms cable RJ45 | | | for series | ASD-E | 1 m | **483.00** |
| **TAP-CN03** | Canopen distribution box | | | for series | ASD-A2-M | | **1 680.00** |
| **UC-PRG030-02A** | USB type A - USB type B | | | for series | ASD-A2-M | | **254.10** |
| **ASD-CARS0003** | 9-pin D-SUB female - Firewire | | | for series | ASD-A2-M | | **417.90** |
| **ASD-CNIE0B06** | RS-485 Splitter 2x RJ45 | | | for series | ASD-A2-M | | **357.00** |



Above ZAR prices do not include VAT. E&OE



WAB...

## Gearboxes for ECMA series servo motors

High-precision gearboxes are widely used in robotics, machine tools and other industrial automation. Gearboxes in precision positioning applications are used to provide higher torques and higher resolutions in a compact package and at reduced power requirements.

A geared motor will output more running and holding torque than an ungeared, standard motor with higher torque output and strengthened rigidity.

**Products features:**

- Low noise, helical gears allow for smooth and quiet gear meshing
- Planetary wheel with needle design increases the contact area to improve the rigidity and output torque
- Synthetic lubricating grease and sealed IP65 design requires no maintenance during the product's lifetime
- Gears are carburised and quenched to HRC62 with low carbon steel surface for optimum wear and impact toughness

| type | ECMA motor | ratio | rated torque | backlash arcmin | dimensions (mm) PCD | flange | shaft Ø | price |
|---|---|---|---|---|---|---|---|---|
| **Straight gearboxes** | *(helical gears)* | | | | | | | |
| **WAB-060-005-K-P1** | 200 - 400 W | 5:1 | 60 | ≤3 | 70 | 60 x 60 | 16 | **11 445.00** |
| **WAB-060-007-K-P1** | 200 - 400 W | 7:1 | 50 | ≤3 | 70 | 60 x 60 | 16 | **11 445.00** |
| **WAB-060-010-K-P1** | 200 - 400 W | 10:1 | 40 | ≤3 | 70 | 60 x 60 | 16 | **11 445.00** |
| **WAB-090-003-K-P1** | 750 W | 3:1 | 130 | ≤3 | 100 | 90 x 90 | 22 | **15 960.00** |
| **WAB-090-007-K-P1** | 750 W | 7:1 | 140 | ≤3 | 100 | 90 x 90 | 22 | **15 960.00** |
| **WAB-090-010-K-P1** | 750 W | 10:1 | 100 | ≤3 | 100 | 90 x 90 | 22 | **15 960.00** |
| **WAB-090-020-K-P1** | 750 W | 20:1 | 140 | ≤3 | 100 | 90 x 90 | 22 | **20 895.00** |
| **WAB-090-040-K-P1** | 750 W | 40:1 | 120 | ≤3 | 100 | 90 x 90 | 22 | **20 895.00** |
| **WAB-115-003-K-P1** | 1.5 - 2 kW | 3:1 | 208 | ≤3 | 130 | 115 x 115 | 32 | **24 045.00** |
| **WAB-115-010-K-P1** | 1.5 - 2 kW | 10:1 | 230 | ≤3 | 130 | 115 x 115 | 32 | **24 045.00** |
| **WAB-142-003-K-P1** | 3 - 4.5 kW | 3:1 | 342 | ≤3 | 165 | 142 x 142 | 40 | **37 485.00** |
| **WAB-180-003-K-P1** | 5.5 kW | 3:1 | 588 | ≤3 | 165 | 142 x 142 | 40 | **59 535.00** |
| **Straight and angled gearbox accessories** | | | | | | | | |
| **WAB115-DZ-95-115-M8** | 1 kW F100 adaptor frame for WAB-115 | | | | | | | **1 995.00** |

### Assembling the **Planetary Gearbox with Motor**



**01** Confirm the compatibility of motor model and gearbox spec and clean the mounting surface



**02** Remove the motor key



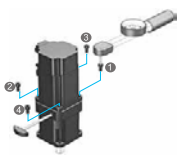
**03** Check the motor shaft size (Insert the bushing into the input bore if necessary)



**04** Remove the plug into the adapter plate. Loosen the set collar with a torque wrench and align with the bolt



**05** Vertically insert motor from the gearbox



**06** Tighten the mounting bolts from bolt 1 to bolt 4 with the torque wrench



**07** Tighten the set collar bolt with the torque wrench



**08** Assemble with the screw plug



HTR-3A...



HTR-5B...



HPN-6A-2500-3-PP



HTR-HN...



HJ-6X6



SCT...

## HTR series - Incremental encoders

Incremental encoders are devices that convert the angular motion or position of a shaft into an analog or digital value to determine position or motion. They are among the most commonly used rotary encoders, offering excellent speed and distance feedback. With fewer sensors involved, incremental encoders are both simple and cost-effective. However, incremental encoders are limited to providing only relative movement data, meaning a reference device is needed to determine absolute motion or position.

The range includes various optical encoders, such as solid shaft and hollow shaft models, with both light-duty and heavy-duty options. The HTR series encoders deliver precise positioning and speed-sensing capabilities, converting rotary motion or position data into electronic pulses for accurate speed and position detection. These high-quality incremental optical encoders are ideal for translating rotary or linear motion into a digital signal for monitoring or controlling speed, direction, distance, or position.

**Common characteristics**

- Output phase: ABZ phase *(std)*
- Output form: **P**: Push Pull — **HL:** Line Driver 5 - 26 VDC
- Resolution: 5 - 5000 ppr *(pulse per revolution)* — *model and output dependant*
- Protection: against polarity reversal

| type | resolution (ppr) | supply voltage | detection system | description | dimensions body | Ø mm shaft | price |
|---|---|---|---|---|---|---|---|
| **Solid shaft type** | | | | | | | |
| **Medium-duty incremental encoders** | | | *(IP50)* | *push-pull type* | | | |
| **HTR-3A-100A-P** | 100 | 5 - 26 VDC | incremental | rotary encoder | 38 | 6 | **2 919.00** |
| **HTR-3A-360A-P** | 360 | 5 - 26 VDC | incremental | rotary encoder | 38 | 6 | **2 919.00** |
| **HTR-3A-500A-P** | 500 | 5 - 26 VDC | incremental | rotary encoder | 38 | 6 | **2 919.00** |
| **HTR-3A-1024A-P** | 1024 | 5 - 26 VDC | incremental | rotary encoder | 38 | 6 | **3 612.00** |
| **HTR-5B-360A-P** | 360 | 5 - 26 VDC | incremental | rotary encoder | 50 | 8 | **2 919.00** |
| **HTR-5B-1024A-P** | 1024 | 5 - 26 VDC | incremental | rotary encoder | 50 | 8 | **3 612.00** |
| **HTR-5B-2000A-P** | 2000 | 5 - 26 VDC | incremental | rotary encoder | 50 | 8 | **5 103.00** |
| **Medium-duty incremental encoders** | | | *(IP50)* | *line driver type* | | | |
| **HTR-5B-360A-H** | 360 | 5 - 26 VDC | incremental | rotary encoder | 50 | 8 | **3 486.00** |
| **HTR-5B-1024A-H** | 1024 | 5 - 26 VDC | incremental | rotary encoder | 50 | 8 | **4 210.50** |
| **HTR-5B-2000A-H** | 2000 | 5 - 26 VDC | incremental | rotary encoder | 50 | 8 | **5 701.50** |
| *Other resolution (ppr) available on request* | | | | | | | |
| **Heavy-duty incremental encoders** | | | *(IP64)* | *push-pull type* | | | |
| • HPN square flange mount *(63.5 x 63.5 mm)* | | | | | | | |
| **HPN-6A-2500-3-PP** | 2500 | 5 - 26 VDC | incremental | rotary encoder | 63.5 □ | 10 | **9 324.00** |
| *Other resolution (ppr) available on request* | | | | | | | |
| **Hollow shaft incremental encoders** | | | **IP50** | *push-pull type* | | *hole* | |
| **HTR-HN-8-360A-P** | 360 | 5 - 26 VDC | incremental | rotary encoder | 38 | 8 | **3 549.00** |
| **HTR-HN-8-500A-P** | 500 | 5 - 26 VDC | incremental | rotary encoder | 38 | 8 | **3 549.00** |
| **HTR-HN-8-1024A-P** | 1024 | 5 - 26 VDC | incremental | rotary encoder | 38 | 8 | **3 780.00** |
| **HTR-HM15-600-3-PP** | 600 | 5 - 26 VDC | incremental | rotary encoder | 59 | 15 | **8 799.00** |
| **HTR-HM15-1024-3-PP** | 1024 | 5 - 26 VDC | incremental | rotary encoder | 59 | 15 | **8 274.00** |
| **HTR-HD30-600-3-PP** | 600 | 8 - 26 VDC | incremental | rotary encoder | 100 | 30 | **9 166.50** |
| **HTR-HD30-1024-3-PP** | 1024 | 8 - 26 VDC | incremental | rotary encoder | 100 | 30 | **9 838.50** |
| *Other resolution (ppr) available on request* | | | | | | | |

## A series - Absolute encoders — IP50

- Signal output — **G:** Gray code
- Output form — **C:** NPN open-collector

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **A2-G-256-C** | 256 | 10 - 26 VDC | absolute | rotary encoder | 44 | 6 | **6 195.00** |

*Other resolution (ppr) available on request*

## Encoder accessories

| type | material | rated torque (N.m) | bore (mm) hole Ø1 | bore (mm) hole Ø2 | wrench torque (N.m) | dimensions Ø mm body Ø | dimensions Ø mm length | price |
|---|---|---|---|---|---|---|---|---|
| **Flexible couplings** | | | | | | | | |
| **HJ-6X6** | plastic | 1.0 | 6 | 6 | 0.3 | 16 | 23 | **414.75** |
| **SCT-16-6X6** | aluminium | 0.3 | 6 | 6 | 0.7 | 16 | 23 | **828.45** |
| **SCT-20-8X8** | aluminium | 0.5 | 8 | 8 | 0.7 | 20 | 26 | **994.35** |
| **SCT-25-8X10** | aluminium | 1.0 | 8 | 10 | 1.7 | 25 | 31 | **1 165.50** |
| **SCT-25-10X10** | aluminium | 2.0 | 10 | 10 | 1.7 | 25 | 31 | **1 165.50** |



Above ZAR prices do not include VAT. E&OE



LRD10RA240

## Micro Programmable Logic Controllers (PLCs)

The Lovato's micro PLC is a compact, flexible, easy to use and highly cost-effective "intelligent relay". Base units with 10, 12 or 20 I/O points and can be expanded up to 44 digital I/O points with plug-in expansion modules.

Programming is simple and intuitive and can be done directly with the built-in keypad/display or by personal computer with **LRXSW** software and **LRXC03** programming USB cable.

Two common language logics are available for programming:
- LD *(relay ladder)* up to 300 lines of four instructions each
- FBD *(function block diagram)* up to 260 programmable blocks

### Advantages:

System control and supervision
- Contact status viewing in simple and small screen display
- Possibility to add the micro PLC equipped with **LREP00** Modbus to systems integrated on data networks by using Synergy *(supervision and energy management software)*

Quick control board installation
- Fewer number of components
- Less wiring with minor number of connections

Repetitiveness
- Less errors during panel building
- Considerable time-saving

Flexibility
- Quick correction of abnormal conditions at final testing
- Fast changes on control boards



LRD20R...

| type | supply | inputs | outputs | description | price |
|---|---|---|---|---|---|
| **Base units** | | | | | |
| • Addition-Subtraction on variables<br>• Multiplication-Division on variables<br>• Comparator on variables<br>• HMI display for parameter viewing and programming<br>• PWM output<br>• High-speed input (1kHz)<br>• PID function | | | | | |
| **LRD10RA240** | 100 - 240 VAC | 6 | 4 | intelligent relay | **4 788.00** |
| **LRD20RA240** | 100 - 240 VAC | 12 | 8 | intelligent relay | **6 709.50** |
| **LRD12RD024** | 24 VDC | 8* | 4 | intelligent relay | **4 557.00** |
| **LRD20RD024** | 24 VDC | 12* | 8 | intelligent relay | **6 709.50** |
| **LRD20RD012** | 12 VDC | 12* | 8 | intelligent relay | **9 418.50** |
| **LRD20RD024P1**❖ | 24 VDC | 12* | 8 | intelligent relay | **8 053.50** |

* *2/4 inputs can be analog (0-10 VDC)*
❖ *With* built-in RS-485 modbus port

**Expansion modules** *(plug-in)*



LRE08R...

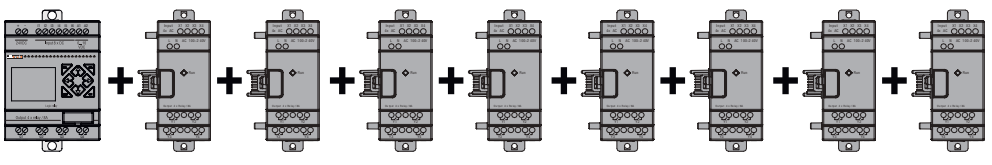
Inputs and outputs of the base relay unit can be increased with plug-in expansion modules. Up to three expansion modules can be added.

| | | | | | |
|---|---|---|---|---|---|
| **LRE08RA240** | 100 - 240 VAC | 4 | 4 | expansion module | **2 656.50** |
| **LRE08RD024** | 24 VDC | 4 | 4 | expansion module | **2 709.00** |
| **LREP00** | | | | modbus - RTU protocol communication unit | **10 153.50** |

**Accessories**

| | | |
|---|---|---|
| **LRXC03** | cable: PC (USB) to LRD relay connecting cable *(1.5 meters)* | **3 507.00** |
| **LRXSW** | programming and supervision software (CD-ROM) | **390.60** |
| **LRXM00** | plug-in program backup memory module | **883.05** |
| **LRXP01** | HMI operator panel, 24 VDC, RS-232, RS-485 | **7 917.00** |
| **LRXSWP01** | LRXP01 editor software (CD-ROM) | **390.60** |
| **LRXC02** | cable: PC (RS-232) - LRXP01 programming cable | **948.15** |

**Maximum combinations**



Base relay unit 12 inputs + 8 outputs | 4 inputs + 4 outputs | 4 inputs + 4 outputs | 4 inputs + 4 outputs | 4 PT100 temperature sensor inputs | 2 outputs, 0...10V or 0...20mA | 2 outputs, 0...10V or 0...20mA | 4 inputs, 0...10V or 0...20mA | RS485 Modbus®-RTU

- 24 digital inputs (4 configurable as analog 0-10V input)
- 20 digital outputs (relay, transistor or mixed)
- 4 analog inputs for PT100 temperature sensors
- 4 analog outputs configurable as 0...10V or 0/4...20mA
- 4 analog inputs configurable as 0...10V or 0/4...20mA
- 1 RS485 slave communication module.

N.B. The sequence of the products given above must be respected for correct operation.


RUN
TRIP
LOC REM
OFF
MAN AUTO




# D

# Control & Signalling

Interactive Catalogue

# Control & Signalling



Pushbuttons & Selector switches

D-1...8



Metal pushbuttons & Selector switches

D-4...6



One-piece control devices

D-9...10



Rotary cam switches

D-12...13



Indicating devices

D-14...17



Pendant control stations

D-19...20



Joystick controllers

D-21...22



Signalling devices

D-25...32/34...36

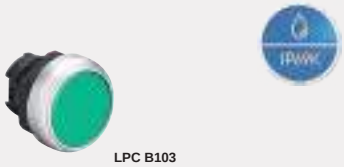


Industrial sirens

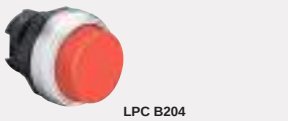
D-33

Need help navigating the interactive catalogue? Scan the QR code for a short tutorial video.

PLatinum Series



LPC B103



LPC B204



LPC B2104



LPC B6144



LPC B6644



LPC B6844



LPC B7191



LPC B7223



LPC B7355

## Platinum series Ø22 mm pushbuttons and selector switches

**LPC series** *(chromed plastic) - mounting by threaded ring*

**General features:**

- Elegant style ergonomic design *(combining aesthetics with industrial durability)*
- IP66, IP67 and IP69K degree of protection for use even in extreme temperatures -25°C...+70°C
- Material resistant to oils, solvents and hydrocarbons.
- Contact blocks and **LPX AU120** support *(see control device accessories)*

Actuators supplied without ***LPX AU120*** contact block support *(to be ordered separately)*

| type | colour | symbol | description | action | price |
|---|---|---|---|---|---|
| **Pushbutton actuators** | | | | | |
| **LPC B102** | black | – | flush momentary pushbutton actuator | spring return | **119.70** |
| **LPC B103** | green | – | flush momentary pushbutton actuator | spring return | **119.70** |
| **LPC B104** | red | – | flush momentary pushbutton actuator | spring return | **119.70** |
| **LPC B105** | yellow | – | flush momentary pushbutton actuator | spring return | **119.70** |
| **LPC B106** | blue | – | flush momentary pushbutton actuator | spring return | **119.70** |
| **LPC B202** | black | – | projecting head pushbutton actuator | spring return | **150.15** |
| **LPC B203** | green | – | projecting head pushbutton actuator | spring return | **150.15** |
| **LPC B204** | red | – | projecting head pushbutton actuator | spring return | **150.15** |
| **LPC B205** | yellow | – | projecting head pushbutton actuator | spring return | **150.15** |
| **LPC B206** | blue | – | projecting head pushbutton actuator | spring return | **150.15** |
| **Pushbutton actuators (with symbols on button)** | | | | | |
| **LPC B1104** | red | O | flush momentary pushbutton actuator | spring return | **154.35** |
| **LPC B1113** | green | I | flush momentary pushbutton actuator | spring return | **154.35** |
| **LPC B1134** | red | STOP | flush momentary pushbutton actuator | spring return | **154.35** |
| **LPC B1163** | green | START | flush momentary pushbutton actuator | spring return | **154.35** |
| **LPC B1142** | black | ← | flush momentary pushbutton actuator | spring return | **154.35** |
| **LPC B1152** | black | ↑ | flush momentary pushbutton actuator | spring return | **154.35** |
| **LPC B1196** | blue | RESET | flush momentary pushbutton actuator | spring return | **154.35** |
| **LPC B2104** | red | O | extended head pushbutton actuator | spring return | **195.30** |
| **Alternate action pushbutton actuator** *(push-on / push-off)* | | | | | |
| **LPC Q102** | black | – | flush alternate action p/button actuator | alternate | **249.90** |
| **LPC Q103** | green | – | flush alternate action p/button actuator | alternate | **249.90** |
| **LPC Q104** | red | – | flush alternate action p/button actuator | alternate | **249.90** |
| **LPC Q105** | yellow | – | flush alternate action p/button actuator | alternate | **249.90** |
| **LPC Q106** | blue | – | flush alternate action p/button actuator | alternate | **249.90** |
| **LPC Q202** | black | – | projecting head pushbutton actuator | alternate | **315.00** |
| **LPC Q203** | green | – | projecting head pushbutton actuator | alternate | **315.00** |
| **LPC Q204** | red | – | projecting head pushbutton actuator | alternate | **315.00** |
| **LPC Q205** | yellow | – | projecting head pushbutton actuator | alternate | **315.00** |
| **LPC Q206** | blue | – | projecting head pushbutton actuator | alternate | **315.00** |
| *Use only contact blocks **LPX C10A** (NO) and **LPX C01** (NC) on above alternate action pushbuttons.* | | | | | |
| **Mushroom head pushbutton actuators** | | | | | |
| **LPC B6144** | red | Ø40 mm | mushroom pushbutton actuator | spring return | **269.85** |
| **LPC B6164** | red | Ø60 mm | mushroom pushbutton actuator | spring return | **370.65** |
| **LPC B6344** | red | Ø40 mm | latching mushroom pushbutton actuator | twist release | **325.50** |
| **Emergency stopping (ISO 13850 compliant)** | | | | | |
| **LPC B6634** | red | Ø30 mm | latching mushroom pushbutton actuator | twist release | **528.15** |
| **LPC B6644** | red | Ø40 mm | latching mushroom pushbutton actuator | twist release | **472.50** |
| **LPC B6744** | red | Ø40 mm | latching mushroom pushbutton actuator | pull release | **505.05** |
| **LPC B6844** | red | Ø40 mm | latching mushroom pushbutton actuator | key release | **1 004.85** |
| **Multi pushbutton actuators** | | | | | |
| **Double-touch pushbutton actuators** | | | | | |
| **LPC B7113** | grn/red | – | double touch pushbutton actuator *(flush)* | spring return | **232.05** |
| **LPC B7191** | blk/blk | ↓↑ | double touch pushbutton actuator *(flush)* | spring return | **299.25** |
| **LPC B71S02** | grn/grn | + – | double touch pushbutton actuator *(flush)* | spring return | **389.55** |
| **LPC B7223** | grn/red | I-O | double touch actuator *(ext. red button)* | spring return | **313.95** |
| **LPC BL7223** | grn/red | I-O | double touch + indicator *(ext. red button)* | spring return | **425.25** |
| **Triple-touch pushbutton actuators** *(red extended stop button)* | | | | | |
| **LPC B7345** | grn/grn | I-STOP-II | triple-touch pushbutton actuator | spring return | **344.40** |
| **LPC B7355** | grn/grn | ↑-STOP-↓ | triple-touch pushbutton actuator | spring return | **344.40** |
| **LPC B7365** | grn/grn | ←-STOP-→ | triple-touch pushbutton actuator | spring return | **344.40** |
| **LPC B7375** | grn/grn | ↙-STOP-↗ | triple-touch pushbutton actuator | spring return | **277.20** |



Above ZAR prices do not include VAT. E&OE

PLatinum Series

**LPC series** *(chromed plastic) - mounting by threaded ring*


LPC S120


LPC S230


LPC S320


LPL 3


LPC BL103


LPC BL204


LPC BL6644

| type | colour | positions | | description | spring return | price |
|---|---|---|---|---|---|---|
| **Selector switch actuators** | | | | | | |
| **LPC S120** | black | 2 position | O - I | selector switch actuator | – | **266.70** |
| **LPC S121** | black | 2 position | O - I | selector switch actuator | from Right | **289.80** |
| **LPC S130** | black | 3 position | I - O - II | selector switch actuator | – | **276.15** |
| **LPC S131** | black | 3 position | I - O - II | selector switch actuator | from L+R | **322.35** |
| **LPC S132** | black | 3 position | I - O - II | selector switch actuator | from Left | **322.35** |
| **LPC S133** | black | 3 position | I - O - II | selector switch actuator | from Right | **322.35** |
| **Long lever selector switch actuators** | | | | | | |
| **LPC S220** | black | 2 position | O - I | lever selector actuator | – | **277.20** |
| **LPC S221** | black | 2 position | O - I | lever selector actuator | from Right | **301.35** |
| **LPC S230** | black | 3 position | I - O - II | lever selector actuator | – | **306.60** |
| **LPC S231** | black | 3 position | I - O - II | lever selector actuator | from L+R | **334.95** |
| **LPC S232** | black | 3 position | I - O - II | lever selector actuator | from Left | **334.95** |
| **LPC S233** | black | 3 position | I - O - II | lever selector actuator | from Right | **334.95** |

**Key selector switch actuators**

| type | colour | positions | key remove | description | spring return | price |
|---|---|---|---|---|---|---|
| **LPC S320** | black | 2 pos (O-I) | Left | key switch actuator | – | **600.60** |
| **LPC S321** | black | 2 pos (O-I) | L+R | key switch actuator | – | **600.60** |
| **LPC S340** | black | 2 pos (O-I) | Left | key switch actuator | from Right | **668.85** |
| **LPC S330** | black | 3 pos (I-O-II) | Centre | key switch actuator | – | **667.80** |
| **LPC S331** | black | 3 pos (I-O-II) | L+C+R | key switch actuator | – | **667.80** |
| **LPC S332** | black | 3 pos (I-O-II) | Left | key switch actuator | – | **667.80** |
| **LPC S333** | black | 3 pos (I-O-II) | Right | key switch actuator | – | **667.80** |
| **LPC S360** | black | 3 pos (I-O-II) | Centre | key switch actuator | from Right | **689.85** |
| **LPC S370** | black | 3 pos (I-O-II) | Centre | key switch actuator | from L+R | **689.85** |

*Versions with different key codes available on request*

**Illuminated Ø22 mm control devices**

**Pilot light heads - Ø22 mm**

| | | | | | |
|---|---|---|---|---|---|
| **LPL 3** | green | illuminated | Ø22 mm pilot light head only | pilot light | **90.30** |
| **LPL 4** | red | illuminated | Ø22 mm pilot light head only | pilot light | **90.30** |
| **LPL 5** | yellow | illuminated | Ø22 mm pilot light head only | pilot light | **90.30** |
| **LPL 6** | blue | illuminated | Ø22 mm pilot light head only | pilot light | **90.30** |
| **LPL 7** | t/parent | illuminated | Ø22 mm pilot light head only | pilot light | **90.30** |

**Flush illuminated pushbutton actuators**

| | | | | | |
|---|---|---|---|---|---|
| **LPC BL103** | green | illuminated | flush momentary pushbutton actuator | spring return | **218.40** |
| **LPC BL104** | red | illuminated | flush momentary pushbutton actuator | spring return | **218.40** |
| **LPC BL105** | yellow | illuminated | flush momentary pushbutton actuator | spring return | **218.40** |
| **LPC BL106** | blue | illuminated | flush momentary pushbutton actuator | spring return | **218.40** |

**Alternate action pushbutton actuators** *(push-on/push-off)*

| | | | | | |
|---|---|---|---|---|---|
| **LPC QL103** | green | illuminated | flush alternate action p/button actuator | alternate | **457.80** |
| **LPC QL104** | red | illuminated | flush alternate action p/button actuator | alternate | **457.80** |
| **LPC QL105** | yellow | illuminated | flush alternate action p/button actuator | alternate | **457.80** |
| **LPC QL106** | blue | illuminated | flush alternate action p/button actuator | alternate | **457.80** |

**Extended head illuminated pushbutton actuators**

| | | | | | |
|---|---|---|---|---|---|
| **LPC BL203** | green | illuminated | projecting head pushbutton actuator | spring return | **274.05** |
| **LPC BL204** | red | illuminated | projecting head pushbutton actuator | spring return | **274.05** |
| **LPC BL205** | yellow | illuminated | projecting head pushbutton actuator | spring return | **274.05** |
| **LPC BL206** | blue | illuminated | projecting head pushbutton actuator | spring return | **274.05** |
| **LPC BL207** | t/parent | illuminated | projecting head pushbutton actuator | spring return | **274.05** |

**Alternate action pushbutton actuators** *(push-on/push-off)*

| | | | | | |
|---|---|---|---|---|---|
| **LPC QL203** | green | illuminated | projecting head alternate action | alternate | **575.40** |
| **LPC QL204** | red | illuminated | projecting head alternate action | alternate | **575.40** |
| **LPC QL205** | yellow | illuminated | projecting head alternate action | alternate | **575.40** |
| **LPC QL206** | blue | illuminated | projecting head alternate action | alternate | **575.40** |
| **LPC QL207** | t/parent | illuminated | projecting head alternate action | alternate | **575.40** |

**Illuminated mushroom head pushbutton actuators**

| | | | | | |
|---|---|---|---|---|---|
| **LPC BL6144** | red | illuminated | Ø40 mm mushroom head actuator | spring return | **492.45** |
| **LPC BL6644** | red | illuminated | Ø40 mm latching mushroom actuator | twist release | **917.70** |

PLatinum SERIES



LPC SL1215



LPC SL1306



LPX DIN



LPC R1196



LPX AU120M



LPX C10

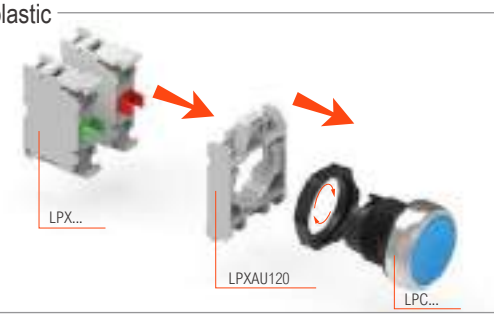



LPX CS10

**Platinum LPC series** *(chromed plastic)* **illuminated Ø22 mm control devices**

| type | colour | positions | description | action | price |
|---|---|---|---|---|---|
| **Illuminated selector switch actuators** | | | | | |
| **LPC SL1203** | green | 2 position | illuminated selector switch actuator | O - I | **371.70** |
| **LPC SL1204** | red | 2 position | illuminated selector switch actuator | O - I | **371.70** |
| **LPC SL1205** | yellow | 2 position | illuminated selector switch actuator | O - I | **371.70** |
| **LPC SL1206** | blue | 2 position | illuminated selector switch actuator | O - I | **371.70** |
| **LPC SL1208** | white | 2 position | illuminated selector switch actuator | O - I | **371.70** |
| **LPC SL1213** | green | 2 position | illuminated selector switch actuator | spring return from Right | **406.35** |
| **LPC SL1214** | red | 2 position | illuminated selector switch actuator | | **406.35** |
| **LPC SL1215** | yellow | 2 position | illuminated selector switch actuator | | **406.35** |
| **LPC SL1216** | blue | 2 position | illuminated selector switch actuator | | **406.35** |
| **LPC SL1218** | white | 2 position | illuminated selector switch actuator | | **406.35** |
| **LPC SL1303** | green | 3 position | illuminated selector switch actuator | I - O - II | **411.60** |
| **LPC SL1304** | red | 3 position | illuminated selector switch actuator | I - O - II | **411.60** |
| **LPC SL1305** | yellow | 3 position | illuminated selector switch actuator | I - O - II | **411.60** |
| **LPC SL1306** | blue | 3 position | illuminated selector switch actuator | I - O - II | **411.60** |
| **LPC SL1308** | white | 3 position | illuminated selector switch actuator | I - O - II | **411.60** |
| **LPC SL1313** | green | 3 position | illuminated selector switch actuator | spring return from L+R | **449.40** |
| **LPC SL1314** | red | 3 position | illuminated selector switch actuator | | **449.40** |
| **LPC SL1315** | yellow | 3 position | illuminated selector switch actuator | | **449.40** |
| **LPC SL1316** | blue | 3 position | illuminated selector switch actuator | | **449.40** |
| **LPC SL1318** | white | 3 position | illuminated selector switch actuator | | **449.40** |
| **DIN-rail mount adaptor for control devices** | | | | | |
| • To mount Ø22 mm control devices on DIN-rail. | | | | | |
| • Same profile as standard MCBs fits into standard distribution boards with *(45 mm cut-out)* | | | | | |
| **LPX DIN** | grey | DIN-rail | mounting adaptor for Ø22 mm pushbuttons | | **64.05** |
| **Mechanical reset pushbuttons** *(fine depth adjustment through face of button)* | | | | | |
| • Complete with shaft *(adjustable length 0 - 15 mm)* | | | | | |
| • Fine rod adjustment *(1 - 4 mm)* on front with screwdriver by removing actuator cap | | | | | |
| **LPC R1002** | black | – | mechanical reset button *(adj. length)* | 0-150 mm | **206.85** |
| **LPC R1004** | red | – | mechanical reset button *(adj. length)* | 0-150 mm | **206.85** |
| **LPC R1006** | blue | – | mechanical reset button *(adj. length)* | 0-150 mm | **206.85** |
| **LPC R1196** | blue | (RESET) | mechanical reset button *(adj. length)* | 0-150 mm | **268.80** |
| **Contact blocks and accessories** for **LPC / LPS / LPF** series | | | | | |
| **Contact block support for** *above series* | | | | | |
| **LPX AU120** | support | | contact block support for **LPC** - chromed plastic actuators | | **52.50** |
| **LPX AU120M** | support | | contact block support for **LPS** and **LPF** - metallic actuators | | **67.20** |
| **Contact blocks** | | | *(require LPXAU120M for metal actuators)* | | |
| • Self-cleaning, dual scrape/oscillating action contacts | | | | | |
| • Thermal current Ith: 10A - IEC rated insulation voltage: 690V (**C20 / C02 / C11:** 250V) | | | | | |
| • Can be clipped onto the back of another contact block | | | | | |
| **LPX C10** | 1 x NO | standard | screw | terminal contact block for control devices | **97.65** |
| **LPX C01** | 1 x NC | standard | screw | terminal contact block for control devices | **97.65** |
| **LPX C20** | 2 x NO | standard | screw | terminal contact block for control devices | **222.60** |
| **LPX C02** | 2 x NC | standard | screw | terminal contact block for control devices | **222.60** |
| **LPX C11** | 1NO+1NC | standard | screw | terminal contact block for control devices | **222.60** |
| **LPX C10A** | 1 x NO | early make | screw | terminal contact block for control devices | **163.80** |
| **LPX C01D** | 1 x NC | late break | screw | terminal contact block for control devices | **163.80** |
| **Push-in terminals for cables with ferrules** *(no tool required for insertion)* *guaranteed retaining force over time even in the presence of vibration and/or impact* | | | | | |
| **LPX CS10** | 1 x NO | standard | push-in | terminal contact block for control devices | **136.50** |
| **LPX CS01** | 1 x NC | standard | push-in | terminal contact block for control devices | **136.50** |

**Ø22MM** - Chromed plastic






Above ZAR prices do not include VAT. E&OE

PLatinum Series



LPS B102


LPS B203


LPS B2104


LPS B6144



LPS B6644


LPS B6844


LPS B7191


LPS B7223


LPS B7355


LPS S120


LPS S320

**Platinum LPS series** *(metal) - mounting securely by two screws*

The popular Ø22 mm chromed plastic version is complemented by a robust, impact-resistant Ø22 mm metal version and a Ø30 mm flat metal version with modern, attractive styling.

- Elegant style ergonomic design *(combining aesthetics with industrial durability)*
- IP66, IP67 and IP69K degree of protection for use even in extreme temperatures -25°C - +70°C
- Material resistant to oils, solvents and hydrocarbons
- Contact blocks and **LPX AU120M** support *(see control device accessories)*

Supplied without **LPX AU120M** mounting adaptor/contact support *(to be ordered separately)*

| type | colour | symbol | description | action | price |
|---|---|---|---|---|---|
| **Pushbutton actuators** | | | **Ø22 mm** | | |
| **LPS B102** | black | – | flush momentary pushbutton actuator | spring ret. | **145.95** |
| **LPS B103** | green | – | flush momentary pushbutton actuator | spring ret. | **145.95** |
| **LPS B104** | red | – | flush momentary pushbutton actuator | spring ret. | **145.95** |
| **LPS B105** | yellow | – | flush momentary pushbutton actuator | spring ret. | **145.95** |
| **LPS B106** | blue | – | flush momentary pushbutton actuator | spring ret. | **145.95** |
| **LPS B202** | black | – | projecting head pushbutton actuator | spring ret. | **183.75** |
| **LPS B203** | green | – | projecting head pushbutton actuator | spring ret. | **183.75** |
| **LPS B204** | red | – | projecting head pushbutton actuator | spring ret. | **183.75** |
| **Pushbutton actuators** *(with symbols on button)* | | | **Ø22 mm** | | |
| **LPS B1104** | red | O | flush momentary pushbutton actuator | spring ret. | **189.00** |
| **LPS B1113** | green | I | flush momentary pushbutton actuator | spring ret. | **189.00** |
| **LPS B1134** | red | STOP | flush momentary pushbutton actuator | spring ret. | **189.00** |
| **LPS B1163** | green | START | flush momentary pushbutton actuator | spring ret. | **189.00** |
| **LPS B1142** | black | ← | flush momentary pushbutton actuator | spring ret. | **189.00** |
| **LPS B1152** | black | ↑ | flush momentary pushbutton actuator | spring ret. | **189.00** |
| **LPS B1196** | blue | RESET | flush momentary pushbutton actuator | spring ret. | **189.00** |
| **LPS B2104** | red | O | extended head pushbutton actuator | spring ret. | **238.35** |
| **Mushroom head pushbutton actuators** | | | | | |
| **LPS B6144** | red | Ø40 mm | mushroom pushbutton actuator | spring ret. | **330.75** |
| **Emergency stopping** *(ISO 13850 compliant)* | | | | | |
| **LPS B6634** | red | Ø30 mm | latching mushroom pushbutton actuator | twist release | **647.85** |
| **LPS B6644** | red | Ø40 mm | latching mushroom pushbutton actuator | twist release | **616.35** |
| **LPS B6844** | red | Ø40 mm | latching mushroom pushbutton actuator | key release | **1 239.00** |
| **Multi pushbutton actuators** | | | **Ø22 mm** | | |
| **Double-touch pushbutton actuators** | | | | | |
| **LPS B7113** | grn/red | – | double touch pushbutton actuator (flush) | spring ret. | **283.50** |
| **LPS B7191** | blk/blk | ↓↑ | double touch pushbutton actuator (flush) | spring ret. | **366.45** |
| **LPS B7223** | grn/red | I-O | double touch actuator (ext. red button) | spring ret. | **384.30** |
| **Triple-touch pushbutton actuators** *(red extended stop button)* | | | | | |
| **LPS B7345** | grn/grn | I-STOP-II | triple-touch pushbutton actuator | spring ret. | **422.10** |
| **LPS B7355** | grn/grn | ↑-STOP-↓ | triple-touch pushbutton actuator | spring ret. | **422.10** |
| **LPS B7365** | grn/grn | ←-STOP-→ | triple-touch pushbutton actuator | spring ret. | **422.10** |
| **LPS B7375** | grn/grn | ↙-STOP-↗ | triple-touch pushbutton actuator | spring ret. | **422.10** |
| **Selector switch actuators** | | | **Ø22 mm** | | spring ret. |
| **LPS S120** | black | O - I | 2 position | selector switch actuator | – | **326.55** |
| **LPS S121** | black | O - I | 2 position | selector switch actuator | from Right | **354.90** |
| **LPS S130** | black | I - O - II | 3 position | selector switch actuator | – | **361.20** |
| **LPS S131** | black | I - O - II | 3 position | selector switch actuator | from L+R | **393.75** |
| **LPS S132** | black | I - O - II | 3 position | selector switch actuator | from Left | **393.75** |
| **LPS S133** | black | I - O - II | 3 position | selector switch actuator | from Right | **393.75** |

**Key selector switch actuators** *versions with different key codes available on request*

| type | colour | positions | key remove | description | spring return | price |
|---|---|---|---|---|---|---|
| **LPS S320** | black | O - I | Left | 2 pos key switch actuator | – | **737.10** |
| **LPS S321** | black | O - I | L+R | 2 pos key switch actuator | – | **737.10** |
| **LPS S340** | black | O - I | Left | 2 pos key switch actuator | from Right | **821.10** |
| **LPS S330** | black | I - O - II | Centre | 3 pos key switch actuator | – | **817.95** |
| **LPS S331** | black | I - O - II | L+C+R | 3 pos key switch actuator | – | **817.95** |
| **LPS S333** | black | I - O - II | Right | 3 pos key switch actuator | – | **817.95** |
| **LPS S360** | black | I - O - II | Centre | 3 pos key switch actuator | from Right | **845.25** |
| **LPS S370** | black | I - O - II | Centre | 3 pos key switch actuator | from L+R | **845.25** |

PLatinum Series



LPS J400



LPS J210




LPX AU109EN



LPSL3



LPS BL103



LPS BL204



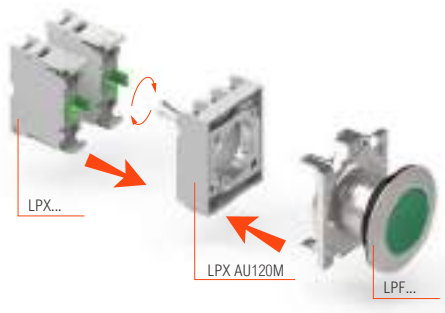
LPS SL1205

**Platinum LPS series Ø22 mm** *(metal) - mounting securely by two screws*

| type | colour | positions | contacts | description | operation | price |
|---|---|---|---|---|---|---|
| **Joystick operators** | | | **Ø22 mm** | | | |
| Supplied complete with contact block support and contact blocks | | | | | | |
| **Without mechanical interlock** | | | | | | |
| **LPS J200** | black | 2 position | 2 NO | joystick control no interlock | spring ret. | **1 239.00** |
| **LPS J201** | black | 2 position | 2 NO | joystick control no interlock | latch | **1 239.00** |
| **LPS J400** | black | 4 position | 4 NO | joystick control no interlock | spring ret. | **1 669.50** |
| **LPS J401** | black | 4 position | 4 NO | joystick control no interlock | latch | **1 669.50** |
| **With mechanical interlock - in centre position** | | | | | | |
| **LPS J210** | black | 2 position | 2 NO | joystick control interlocked | spring ret. | **1 491.00** |
| **LPS J211** | black | 2 position | 2 NO | joystick control interlocked | latch | **1 491.00** |
| **LPS J410** | black | 4 position | 4 NO | joystick control interlocked | spring ret. | **2 005.50** |
| **LPS J411** | black | 4 position | 4 NO | joystick control interlocked | latch | **2 005.50** |
| **LPX AU101** | black | Ø22 mm | | legend holder for joystick controllers | *12 mm (H)* | **92.40** |
| **LPX AU109** | silver | engraveable | | clip-in label for *(above)* holders | *12 mm (H)* | **26.99** |
| **LPX AU109EN** | silver | engraved | | label *(provide required engraving)* | *12 mm (H)* | **25.41** |
| **Illuminated control devices** | | | **Ø22 mm** | | | |
| **LPXAU120M** mounting adaptor/contact support *(to be ordered separately)* | | | | | | |
| **Pilot light heads - Ø22mm** | | | | | | |
| **LPS L3** | green | illuminated | Ø22 mm | pilot light head only | pilot light | **156.45** |
| **LPS L4** | red | illuminated | Ø22 mm | pilot light head only | pilot light | **156.45** |
| **LPS L5** | yellow | illuminated | Ø22 mm | pilot light head only | pilot light | **156.45** |
| **LPS L6** | blue | illuminated | Ø22 mm | pilot light head only | pilot light | **156.45** |
| **LPS L7** | t/parent | illuminated | Ø22 mm | pilot light head only | pilot light | **156.45** |
| **Illuminated pushbutton actuators** | | | **Ø22 mm** | | | |
| **LPS BL103** | green | illuminated | | flush head pushbutton actuator | spring ret. | **267.75** |
| **LPS BL104** | red | illuminated | | flush head pushbutton actuator | spring ret. | **267.75** |
| **LPS BL105** | yellow | illuminated | | flush head pushbutton actuator | spring ret. | **267.75** |
| **LPS BL106** | blue | illuminated | | flush head pushbutton actuator | spring ret. | **267.75** |
| **LPS BL203** | green | illuminated | | projecting head pushbutton actuator | spring ret. | **336.00** |
| **LPS BL204** | red | illuminated | | projecting head pushbutton actuator | spring ret. | **336.00** |
| **LPS BL205** | yellow | illuminated | | projecting head pushbutton actuator | spring ret. | **336.00** |
| **LPS BL206** | blue | illuminated | | projecting head pushbutton actuator | spring ret. | **336.00** |
| **Illuminated mushroom head pushbutton actuators Ø40 mm** | | | | | | |
| **LPS BL6644** | red | illuminated | | latching mushroom head actuator | twist release | **1 134.00** |
| **Illuminated selector switch actuators** | | | **Ø22 mm** | | | |

| type | colour | positions | description | action | price |
|---|---|---|---|---|---|
| **LPS SL1203** | green | 2 position | illuminated selector switch actuator | O - I | **454.65** |
| **LPS SL1204** | red | 2 position | illuminated selector switch actuator | O - I | **454.65** |
| **LPS SL1205** | yellow | 2 position | illuminated selector switch actuator | O - I | **454.65** |
| **LPS SL1206** | blue | 2 position | illuminated selector switch actuator | O - I | **454.65** |
| **LPS SL1303** | green | 3 position | illuminated selector switch actuator | I - O - II | **504.00** |
| **LPS SL1304** | red | 3 position | illuminated selector switch actuator | I - O - II | **504.00** |
| **LPS SL1305** | yellow | 3 position | illuminated selector switch actuator | I - O - II | **504.00** |
| **LPS SL1306** | blue | 3 position | illuminated selector switch actuator | I - O - II | **504.00** |

**Ø30MM** - Chromed metal




*Refer to* ***D-6...***



Above ZAR prices do not include VAT. E&OE

PLatinum SERIES



LPF B106



LPF B204



LPF S120



LPF S320



LPF L3



LPF SL1204

## Platinum LPF - Ø30 mm series *(flat-metal)* - *Vandal proof*

- Actuator profile of only 4 mm
- Screw panel fixing by two screws for secure mounting and vandal-proof installation
- Elegant style ergonomic design *(combining aesthetics with industrial durability)*
- IP66, IP67 and IP69K degree of protection for use even in extreme temperatures -25°C...+70°C
- Contact blocks, LED modules and **LPX AU120M** support

Actuators are supplied without **LPX AU120M** contact block support *(to be ordered separately)*

| type | colour | style | description | action | price |
|---|---|---|---|---|---|
| **Pushbutton actuators** | | | **Ø30 mm** | | |
| **LPF B102** | black | flush | momentary action pushbutton actuator | spring return | **218.40** |
| **LPF B103** | green | flush | momentary action pushbutton actuator | spring return | **218.40** |
| **LPF B104** | red | flush | momentary action pushbutton actuator | spring return | **218.40** |
| **LPF B105** | yellow | flush | momentary action pushbutton actuator | spring return | **218.40** |
| **LPF B106** | blue | flush | momentary action pushbutton actuator | spring return | **218.40** |
| **LPF B204** | red | projecting | momentary action pushbutton actuator | spring return | **276.15** |
| **Selector switch actuators** | | | **Ø30 mm** | spring return | |
| **LPF S120** | black | 2 position | O - I selector switch actuator | – | **489.30** |
| **LPF S121** | black | 2 position | O - I selector switch actuator | from R | **532.35** |
| **LPF S130** | black | 3 position | I - O - II selector switch actuator | – | **541.80** |
| **LPF S131** | black | 3 position | I - O - II selector switch actuator | from L+R | **590.10** |
| **LPF S133** | black | 3 position | I - O - II selector switch actuator | from R | **590.10** |
| **Key switch actuators** | | | **Ø30 mm** | key release | |
| **LPF S320** | black | 2 position | (O-I) Left key switch actuator | – | **1 113.00** |
| **LPF S321** | black | 2 position | (O-I) L+R key switch actuator | – | **1 113.00** |
| **LPF S340** | black | 2 position | (O-I) Left key switch actuator | from Left | **1 239.00** |
| **LPF S330** | black | 3 position | (I-O-II) Centre key switch actuator | – | **1 228.50** |
| **LPF S331** | black | 3 position | (I-O-II) L+C+R key switch actuator | – | **1 228.50** |
| **LPF S370** | black | 3 position | (I-O-II) Centre key switch actuator | from L+R | **1 270.50** |
| **Illuminated control and signalling devices** | | | **Ø30 mm** | | |
| **Pilot light head** | | | | | |
| **LPF L3** | green | illuminated | pilot light head *(with diffuser)* | pilot light | **234.15** |
| **LPF L4** | red | illuminated | pilot light head *(with diffuser)* | pilot light | **234.15** |
| **LPF L5** | yellow | illuminated | pilot light head *(with diffuser)* | pilot light | **234.15** |
| **LPF L6** | blue | illuminated | pilot light head *(with diffuser)* | pilot light | **234.15** |
| **Illuminated pushbuttons** *(with side visibility)* | | | | | |
| **LPF BL103** | green | illuminated | flush momentary action actuator | spring return | **400.05** |
| **LPF BL104** | red | illuminated | flush momentary action actuator | spring return | **400.05** |
| **LPF BL105** | yellow | illuminated | flush momentary action actuator | spring return | **400.05** |
| **LPF BL106** | blue | illuminated | flush momentary action actuator | spring return | **400.05** |
| **Illuminated selector switch actuators** | | | | | |
| **LPF SL1203** | green | 2 position | illuminated selector switch actuator | O - I | **682.50** |
| **LPF SL1204** | red | 2 position | illuminated selector switch actuator | O - I | **682.50** |
| **LPF SL1303** | green | 3 position | illuminated selector switch actuator | I - O - II | **756.00** |

*Other colours and configurations available on request.*

### Contact blocks and support for LPF series

| | | | |
|---|---|---|---|
| **LPX AU120M** | support | contact block support for **LPS** and **LPF** - metallic actuators | **67.20** |

**Contact blocks** - *require* **LPX AU120M** *for metal actuators*

- Self cleaning, dual scrape/oscillating action contacts
- Thermal current Ith: 10A - IEC rated insulation voltage: 690V (**C20 / C02 / C11:** 250V)

| | | | | | |
|---|---|---|---|---|---|
| **LPX C10** | 1 x NO | standard | screw | contact block for control devices | **97.65** |
| **LPX C01** | 1 x NC | standard | screw | contact block for control devices | **97.65** |
| **LPX C20** | 2 x NO | standard | screw | contact block for control devices | **222.60** |
| **LPX C02** | 2 x NC | standard | screw | contact block for control devices | **222.60** |
| **LPX C11** | 1NO+1NC | standard | screw | contact block for control devices | **222.60** |
| **LPX CS10** | 1 x NO | standard | push-in | contact block for control devices | **136.50** |
| **LPX CS01** | 1 x NC | standard | push-in | contact block for control devices | **136.50** |

### Accessories for above LPF actuators

| | | | | |
|---|---|---|---|---|
| **LPFX AU100G** | black | holder | legend holder for AU109 labels | *12 mm (H)* | **31.50** |
| **LPX AU109** | silver | engravable | clip-in label for above holder | *12 mm (H)* | **26.99** |
| **LPX AU109EN** | silver | engraved | label *(provide required engraving)* | *12 mm (H)* | **25.41** |

PLatinum Series

## Contact blocks and accessories


LPX AU120


LPX AU120M


LPX C01


LPX C20


LPX LF...


LPX LPSB...


LPX LFB3


LPX LPSM...

| type | contact | supply | description | price |
|---|---|---|---|---|
| **Contact block supports** - *for* **LPC**, **LPS** *and* **LPF** *series control devices* | | | | |
| • Supports up to 9 contact blocks *(3 rows of 3 contact blocks)* | | | | |
| **LPX AU120** | support | contact block support | for **LPC** | chromed plastic actuators **52.50** |
| **LPX AU120M** | support | contact block support | **LPS/LPF** | metallic actuators **67.20** |
| **Contact blocks** *require* ***LPX AU120*** *for plastic and* ***LPX AU120M*** *for metal actuators* | | | | |
| All versions LPC, LPS, LPF use the same contact elements, LED light elements and a wide range of accessories. | | | | |
| • Thermal current Ith: 10A - IEC rated insulation voltage: 690V (**C20 / C02 / C11:** 250V) | | | | |
| • Self-cleaning, dual scrape/oscillating action contacts | | | | |
| • Can be clipped onto the back of another contact block | | | | |
| **LPX C10** | 1 x NO | standard | screw terminal contact block for control devices | **97.65** |
| **LPX C01** | 1 x NC | standard | screw terminal contact block for control devices | **97.65** |
| **LPX C20** | 2 x NO | standard | screw terminal contact block for control devices | **222.60** |
| **LPX C02** | 2 x NC | standard | screw terminal contact block for control devices | **222.60** |
| **LPX C11** | 1NO+1NC | standard | screw terminal contact block for control devices | **222.60** |
| **LPX C10A** | 1 x NO | early make | screw terminal contact block for control devices | **163.80** |
| **LPX C01D** | 1 x NC | late break | screw terminal contact block for control devices | **163.80** |
| **Push-in terminals - for cables with ferrules** *(no tool required for insertion).* *Guaranteed retaining force over time even in the presence of vibration and/or impact.* | | | | |
| **LPX CS10** | 1 x NO | standard | push-in terminal contact block for control devices | **136.50** |
| **LPX CS01** | 1 x NC | standard | push-in terminal contact block for control devices | **136.50** |

New

## LED indicating modules *(protected)* *for all control devices*

- Overvoltage protection
- Electrical life: 100.000 hours
- Total protection against overvoltage/stray currents in wiring, reduced flickering phenomenon
- Clips onto **LPXAU120** and **LPXAU120M** supports

| type | colour | supply voltage | lamp | state | description | price |
|---|---|---|---|---|---|---|
| **LED module** *(steady light)* | | | | | | |
| **LPX LPB3** | green | 12 - 30 VAC/DC | LED | steady | integrated lamp module | **237.30** |
| **LPX LPB4** | red | 12 - 30 VAC/DC | LED | steady | integrated lamp module | **237.30** |
| **LPX LPB5** | yellow | 12 - 30 VAC/DC | LED | steady | integrated lamp module | **237.30** |
| **LPX LPB6** | blue | 12 - 30 VAC/DC | LED | steady | integrated lamp module | **237.30** |
| **LPX LPB8** | white | 12 - 30 VAC/DC | LED | steady | integrated lamp module | **237.30** |
| **LPX LPE3** | green | 85 - 140 VAC | LED | steady | integrated lamp module | **337.05** |
| **LPX LPE4** | red | 85 - 140 VAC | LED | steady | integrated lamp module | **337.05** |
| **LPX LPE5** | yellow | 85 - 140 VAC | LED | steady | integrated lamp module | **337.05** |
| **LPX LPE6** | blue | 85 - 140 VAC | LED | steady | integrated lamp module | **337.05** |
| **LPX LPE8** | white | 85 - 140 VAC | LED | steady | integrated lamp module | **337.05** |
| **LPX LPM3** | green | 185 - 265 VAC | LED | steady | integrated lamp module | **354.90** |
| **LPX LPM4** | red | 185 - 265 VAC | LED | steady | integrated lamp module | **354.90** |
| **LPX LPM5** | yellow | 185 - 265 VAC | LED | steady | integrated lamp module | **354.90** |
| **LPX LPM6** | blue | 185 - 265 VAC | LED | steady | integrated lamp module | **354.90** |
| **LPX LPM8** | white | 185 - 265 VAC | LED | steady | integrated lamp module | **354.90** |
| **LED module** *(flashing light)* | | | | | | |
| **LPX LFB3** | green | 18 - 30 VAC/DC | LED | flashing | integrated lamp module | **541.80** |
| **LPX LFB4** | red | 18 - 30 VAC/DC | LED | flashing | integrated lamp module | **541.80** |
| **LPX LFB5** | yellow | 18 - 30 VAC/DC | LED | flashing | integrated lamp module | **541.80** |
| **LPX LFB6** | blue | 18 - 30 VAC/DC | LED | flashing | integrated lamp module | **541.80** |
| **LPX LFB8** | white | 18 - 30 VAC/DC | LED | flashing | integrated lamp module | **541.80** |
| **LPX LFM3** | green | 185 - 265 VAC | LED | flashing | integrated lamp module | **812.70** |
| **LPX LFM4** | red | 185 - 265 VAC | LED | flashing | integrated lamp module | **812.70** |
| **LPX LFM5** | yellow | 185 - 265 VAC | LED | flashing | integrated lamp module | **812.70** |
| **LPX LFM6** | blue | 185 - 265 VAC | LED | flashing | integrated lamp module | **812.70** |
| **LPX LFM8** | white | 185 - 265 VAC | LED | flashing | integrated lamp module | **812.70** |
| **LED module** *(push-in terminals)* | | | | | | |
| • For cables with ferrules - simply push ferrule into terminals *(no tool required for insertion)* guaranteed retaining force over time even in presence of vibration and/or impact | | | | | | |
| **LPX LPSB*** | * | 12 - 30 VAC/DC | LED | steady | integrated lamp module | **270.90** |
| **LPX LPSM*** | * | 185 - 265 VAC | LED | steady | integrated lamp module | **408.45** |
| **LPX LFE*** | * | 85 - 140 VAC | LED | steady | integrated lamp module | **777.00** |

* *Replace with:* **3** *(green)* / **4** *(red)* / **5** *(yellow)* / **6** *(blue)* / **8** *(white)* - *for colours*



Above ZAR prices do not include VAT. E&OE

PLatinum Series



LPX AU100



LPX AU108




LPX AU109EN




LPX DAU115...



LPX AU158




LPX AU113



LPX A200



LPX AU136



LPX B104



LPX DIN

## Accessories for control and signalling devices

All versions LPC, LPS, LPF use the same contact elements, LED light elements and a wide range of accessories.

| type | colour | supply | description | | price |
|---|---|---|---|---|---|
| **Legend plates and labels -** *for* **LPC, LPS** *and* **LPF** *series control devices* | | | | | |
| **LPX AU100** | black | Ø22 mm | legend holder for AU109 labels | *12 mm (H)* | **21.00** |
| **LPFX AU100G** | black | Ø30 mm | legend holder for AU109 labels | *12 mm (H)* | **31.50** |
| **LPX AU101** | black | Ø22 mm | legend holder for joystick controllers | *12 mm (H)* | **92.40** |
| **LPX AU109** | silver | engraveable | clip-in label for *(above)* holders | *12 mm (H)* | **26.99** |
| **LPX AU109EN** | silver | engraved | label *(provide required engraving)* | *12 mm (H)* | **25.41** |
| **LPX AU105** | black | Ø22 mm | legend holder for AU108 labels | *15 mm (H)* | **28.25** |
| **LPX AU108** | silver | engraveable | clip-in label for *(above)* holders | *15 mm (H)* | **28.25** |
| **LPX AU108EN** | silver | engraved | label *(provide required engraving)* | *15 mm (H)* | **26.57** |
| **Illuminated "Emergency Stop" disc** *- for 22 mm mushroom head pushbuttons* | | | | | |
| • To enhance visibility of the emergency button ensuring its operation in conditions of low visibility<br>• Two light functions: Steady or flashing *(selectable)* | | | | | |
| **LPX DAU115024** | yellow | 24 VAC/DC | LED | illuminated emergency disc Ø60 mm | **563.85** |
| **LPX DAU115230** | yellow | 240 VAC | LED | illuminated emergency disc Ø60 mm | **619.50** |
| **Protection shrouds** *- (to prevent inadvertent operation of mushroom pushbuttons)* | | | | | |
| **LPX AU158** | yellow | shroud | padlockable for latching mushroom pushbutton | | **143.85** |
| **LPX AU159** | yellow | half shroud | prevents inadvertent operation of mushroom p/button | | **256.20** |
| **Emergency labels** *(to be mounted behind mushroom pushbuttons)* | | | | | |
| **LPX AU113** | yellow | "emergency stop" plastic label/disc for pushbuttons | | Ø90 mm | **78.75** |
| **LPX AU115** | yellow | "emergency stop" plastic label/disc for pushbuttons | | Ø60 mm | **76.65** |
| **LPX AU110** | yellow | "emergency stop" adhesive label for pushbuttons | | 65 x 35 mm | **75.60** |
| **Accessories for control and signalling device** | | | | | |
| **LPX A130** | grey | | Ø22 mm hole blanking plug *(threaded)* | | **29.51** |
| **LPX A140** | grey | | action plug for using central position on actuators | | **17.01** |
| **LPX A150** | grey | | spare rod *(150 mm)* for mechanical reset pushbuttons | | **52.50** |
| **LPX A170** | silver | No. 455 | replacement standard key set for key switches | | **195.30** |
| **LPX A170R*** | silver | | special key set for key switches with different keys | | **253.05** |
| * *Add:* **421E, 458A, 520E, 3131A, 3433E** *(for different key requirement)* | | | | | |
| **LPX AU00** | black | | spare plastic threaded nut for mounting plastic actuators | | **10.50** |
| **LPX AU01** | silver | | replacement ring *(steel)* with teeth to avoid turning when mounted | | **64.05** |
| **LPX A162** | silver | | reduction ring to mount Ø22 mm LPC through Ø30 mm hole | | **166.95** |
| **LPX A162M** | silver | | reduction ring to mount Ø22 mm LPS through Ø30 mm hole | | **216.30** |
| **LPX A200** | silver | | socket spanner for actuator fixing ring tightening | | **189.00** |
| **Rubber protection boots for pushbuttons** | | | | | |
| **LPX AU13*** | * | rubber boot | protection boot for flush pushbutton actuators | | **57.75** |
| **LPX AU14*** | * | rubber boot | rubber protection boot for extended pushbuttons | | **61.95** |
| **LPX AU157** | t/parent | rubber boot | protection boot for double/triple touch pushbuttons | | **174.30** |
| **LPX AU167** | t/parent | rubber boot | rubber protection boot for mushroom pushbuttons | | **392.70** |
| **LPX AU170** | t/parent | rubber boot | protection cover *(hinged)* for Ø22 mm pushbuttons | | **240.45** |
| * *Replace with:* **2** *(black)* / **3** *(green)* / **4** *(red)* / **5** *(yellow)* / **6** *(blue)* / **8** *(white) - for colours* | | | | | |
| **Spares for pushbuttons** | | | | | |
| **LPX B10*** | * | | replacement front cap for flush pushbutton actuators | | **19.53** |
| **LPX B20*** | * | | replacement front cap for extended head pushbutton actuators | | **21.00** |
| **LPX BL10*** | * | | replacement lens for illuminated flush pushbutton actuators | | **65.10** |
| **LPX BL20*** | * | | replacement lens for illuminated ext. head pushbutton actuators | | **81.90** |
| * *Replace with:* **2** *(black)* / **3** *(green)* / **4** *(red)* / **5** *(yellow)* / **6** *(blue)* / **8** *(white) - for colours* | | | | | |
| **DIN-rail mount adaptor for control devices** | | | | | |
| • To mount Ø22 mm control devices on DIN-rail<br>• Same profile as standard MCBs fits into standard distribution boards with *(45 mm cut-out)* | | | | | |
| **LPX DIN** | grey | DIN-rail | mounting adaptor for Ø22 mm pushbuttons | | **64.05** |

**Ø22MM** - Mounting adaptor









LMP B104T01


LMP B204T11


LMP B6144T11


LMP B6644T11


LMP S120T10


LMP S330T20


LPM LB3


LPM LB5

## Ø22 mm Monoblock control devices - Actuator with built-in contact arrangement

- Contact rating: 5A - 240 VAC
- Protection: **IP66/67/69K** *(rear terminals IP20)*

| type | colour | contact | | description | action | price |
|---|---|---|---|---|---|---|
| **Pushbutton switches** | | | | Lens: Ø29 x 13 - Body: L 42.5 mm | | |
| **LMP B104T01** | red | 1 NO | flush | momentary pushbutton | spring ret. | **69.30** |
| **LMP B103T10** | green | 1 NC | flush | momentary pushbutton | spring ret. | **69.30** |
| **LMP B103T11** | green | 1NO + 1NC | flush | momentary pushbutton | spring ret. | **90.30** |
| **LMP B104T11** | red | 1NO + 1NC | flush | momentary pushbutton | spring ret. | **90.30** |
| **LMP B102T11** | black | 1NO + 1NC | flush | momentary pushbutton | spring ret. | **90.30** |
| **LMP B108T11** | white | 1NO + 1NC | flush | momentary pushbutton | spring ret. | **90.30** |
| **LMP B204T11** | red | 1NO + 1NC | project | projecting head pushbutton | spring ret. | **99.75** |
| **Alternate action pushbutton actuator** *(push-on / push-off)* | | | | | | |
| **LMP Q102T11** | black | 1NO + 1NC | | flush alternate action p/button actuator | alternate | **173.25** |
| **Mushroom head pushbutton switches** | | | | Lens: Ø40 x 21/33 - Body: L 42.5 mm | | |
| **LMP B6144T11** | red | 1NO + 1NC | | mushroom head pushbutton | spring ret. | **90.30** |
| **LMP B6644T01** | red | 1 NC | latching | mushroom head pushbutton | twist rel. | **107.10** |
| **LMP B6644T11** | red | 1NO + 1NC | latching | mushroom head pushbutton | twist rel. | **126.00** |
| **Selector switches** | | | | Lens: Ø29 x 26 - Body: L 42.5 mm | | |
| **2 position selector switches** | | | | | spring ret. | |
| **LMP S120T10** | black | 1NO | O - I | 2 position selector switch | – | **78.75** |
| **LMP S120T11** | black | 1NO + 1NC | O - I | 2 position selector switch | – | **97.65** |
| **3 position selector switches** | | | | | | |
| **LMP S130T20** | black | 2 NO | I - O - II | 3 position selector switch | – | **106.05** |
| **LMP S131T20** | black | 2 NO | I - O - II | 3 position selector switch | from L+R | **106.05** |
| **Key operated selector switch** | | | | Lens: Ø29 x 46.2 - Body: L 42.5 mm | | |
| **2 position key switches** | | | | *(key removable from left position)* | | |
| **LMP S320T10** | black | 1NO | O - I | 2 position key actuated selector switch | | **296.10** |
| **3 position key switches** | | | | *(key removable from centre position)* | | |
| **LMP S330T20** | black | 2 NO | I - O - II | 3 position key actuated selector switch | | **301.35** |

## Monoblock LED pilot lights

LPM series are designed as single units, integrating the LED light source, lens, and housing into a compact space-saving form factor. This makes them ideal for applications where space is limited or where multiple indicators need to be installed in close proximity.

- Electrical life: >30.000 hours
- Compliant with standards: IEC/EN 60947-1, IEC/EN60947-5-1, UL508, CSA C22.2 no 14
- Protection: IP66/67/69K *(rear terminals IP20)*

| type | colour | supply | | | description | price |
|---|---|---|---|---|---|---|
| **LPM LB1** | orange | 24 VAC/DC | Ø22 mm | monoblock | panel-mount LED pilot light | **102.90** |
| **LPM LB3** | green | 24 VAC/DC | Ø22 mm | monoblock | panel-mount LED pilot light | **102.90** |
| **LPM LB4** | red | 24 VAC/DC | Ø22 mm | monoblock | panel-mount LED pilot light | **102.90** |
| **LPM LB5** | yellow | 24 VAC/DC | Ø22 mm | monoblock | panel-mount LED pilot light | **102.90** |
| **LPM LB6** | blue | 24 VAC/DC | Ø22 mm | monoblock | panel-mount LED pilot light | **102.90** |
| **LPM LB7** | t/parent | 24 VAC/DC | Ø22 mm | monoblock | panel-mount LED pilot light | **102.90** |
| **LPM LE1** | orange | 110 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **274.05** |
| **LPM LE3** | green | 110 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **274.05** |
| **LPM LE4** | red | 110 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **274.05** |
| **LPM LE5** | yellow | 110 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **274.05** |
| **LPM LE6** | blue | 110 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **274.05** |
| **LPM LE7** | t/parent | 110 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **274.05** |
| **LPM LM1** | orange | 230 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **118.65** |
| **LPM LM3** | green | 230 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **118.65** |
| **LPM LM4** | red | 230 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **118.65** |
| **LPM LM5** | yellow | 230 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **118.65** |
| **LPM LM6** | blue | 230 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **118.65** |
| **LPM LM7** | t/parent | 230 VAC | Ø22 mm | monoblock | panel-mount LED pilot light | **118.65** |



Above ZAR prices do not include VAT. E&OE

PLatinum SERIES

## Monoblock control and signalling devices Ø22 mm

- Protection: **IP66, IP67** and **IP69K**
- Service life: >30.000 hours

## Ø22 mm control and signalling devices


LPC ZS...





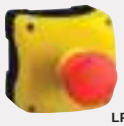
LPC D01

| type | colour | supply voltage | IP | dB/10cm | description | price |
|---|---|---|---|---|---|---|
| **Monoblock buzzers - Continuous or pulse tone sound** | | | | | | |
| Monoblock buzzers are used as acoustic indication in automation systems and on-board machinery in production processes and manufacturing environments. Long life - low consumption - compact dimensions<br>• Continuous or pulse tone<br>• Service life: >30.000 hours *(permanently energised)*<br>• Operating temperature: -25...+70°C<br>• Side cable entry | | | | | | |
| **IP40 version** | | (90 dB/10cm) | | | | |
| **LPC ZSA** | black | 9 - 15 VAC/DC | IP40 | 90dB | Ø22 mm panel-mount buzzer | **294.00** |
| **LPC ZSB** | black | 18 - 30 VAC/DC | IP40 | 90dB | Ø22 mm panel-mount buzzer | **294.00** |
| **LPC ZSM** | black | 185 - 265 VAC/DC | IP40 | 90dB | Ø22 mm panel-mount buzzer | **294.00** |
| **IP66/67/69K version** | | (80 dB/10cm) | | | | |
| **LPC ZSAIP** | black | 9 - 15 VAC/DC | 66-69K | 80dB | Ø22 mm panel-mount buzzer | **1 113.00** |
| **LPC ZSBIP** | black | 18 - 30 VAC/DC | 66-69K | 80dB | Ø22 mm panel-mount buzzer | **1 113.00** |
| **LPC ZSMIP** | black | 185 - 265 VAC/DC | 66-69K | 80dB | Ø22 mm panel-mount buzzer | **1 270.50** |
| **Monoblock potentiometers** *UL-certified for use in demanding ambient conditions* | | | | | | |
| Monoblock potentiometers are compact, single-unit potentiometers which consist of shafts and feature a rotary design, allowing users to adjust resistance by turning the knob. By integrating the shaft and knob into a single unit, making it more space-efficient and easier to install. Potentiometers are typically used for regulating parameters of many devices *(e.g. the speed of electric motors through static converters, temperature regulation etc.)* Mounts through standard **Ø22 mm** pushbutton mounting hole.<br>• Protection degree: **IP66, IP67** and **IP69K**<br>• Monoblock body: With 1-turn graduated scale<br>• Insulation voltage Ui: 250 VAC<br>• Resistance tolerance: ±10%<br>• Operating temperature: -25...+70°C<br>• Cermet technology ensures stable, constant resistance values over time | | | | | | |
| **LPC PA001** | black | 0…1kΩ | 66-69K | | panel-mounting potentiometer | **443.10** |
| **LPC PA005** | black | 0…5kΩ | 66-69K | | panel-mounting potentiometer | **443.10** |
| **LPC PA010** | black | 0…10kΩ | 66-69K | | panel-mounting potentiometer | **443.10** |
| **USB and RJ45 communication interfaces Ø22mm** IP65 *(with cap closed)* | | | | | | |
| USB and RJ45 communication interface connectors are used in industrial environments, which in recent years have seen an increase in the number of connections between machines, production lines, equipment and measuring instruments. These interfaces provide the transmission of data in both directions between the various devices. Overall these connectors offer reliable communication and connectivity within compact and durable monoblock designs, ensuring optimal performance in demanding environments. | | | | | | |
| **LPC D01** | black | USB | A-A | | panel-mount communication interface | **865.20** |
| **LPC D03** | black | USB | A-B | | panel-mount communication interface | **865.20** |
| **LPC D05** | black | USB | B-A | | panel-mount communication interface | **865.20** |
| **LPC D06** | black | RJ45 | Ethernet | | panel-mount communication interface | **903.00** |

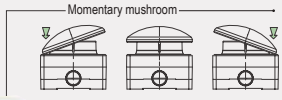
PLatinum SERIES



Scan to watch



LPZ P1B5600






LP9S01R



LPZ P2B8901



LPZ P1A5P



LPZP1A8



LPZ P3A8



LPZ M5A8



LPZ M4A8



LPZ M2A8

## Polycarbonate pushbutton control stations

- High protection degree: IP66, IP67, IP69K
- New styling with incorporated anti-rotation facility for actuators
- M16 or M20/25 cable gland knock-outs on all sides and base
- Easy wiring with internal contact identification on cover and on base
- Contact blocks and lamp modules are base mounted with screw terminals facing forward

| type | button colour | contact | cover colour | button symbol | description | dimensions(mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **Complete pushbutton stations** | | | | | | | | | |
| **1-way pushbutton stations** | | | | | | | | | |
| **LPZ P1B8100** | green | 1 x NO | grey | I | flush pushbutton station | | | | **632.10** |
| **LPZ P1B8102** | red | 1 x NC | grey | O | extended pushbutton station | 72 | 72 | 56 | **632.10** |
| **LPZ P1B5600** | red | 1 x NC | yellow | – | latch mushroom twist release | | | | **1 060.50** |
| **LP9S01R** | red | 1 x NC | grey | | palm pushbutton station | 94 | 94 | 90 | **749.70** |
| **LP9P02R** | red | 2 x NC | yellow | | palm latching pull release station | | | | **1 060.50** |
| **2-way pushbutton stations** | | | | | | | | | |
| **LPZ P2B8901** | green<br>red | 1 x NO<br>1 x NC | grey<br>grey | I<br>O | flush pushbutton station<br>extended pushbutton station | 117 | 72 | 56 | **1 081.50** |
| **LPZ P2B802ZA*** | green<br>red | 1 x NO<br>1 x NC | grey<br>grey | I<br>– | flush pushbutton<br>latch mushroom twist release | 151 | 72 | 56 | **929.25** |
| **3-way pushbutton stations** | | | | | | | | | |
| **LPZ P3B8907** | green<br>red<br>green | 1 x NO<br>1 x NC<br>1 x NO | grey<br>grey<br>grey | ↑<br>O<br>↓ | flush pushbutton<br>extended pushbutton<br>flush pushbutton | 151 | 72 | 56 | **1 480.50** |

***** *Taller housing (H) 151 mm to accommodate padlock shroud* ***LPX AU158*** *(see page* ***D-8****)*

## Empty pushbutton stations *(without actuators and contact blocks)*

| type | holes | rows | cover | description | (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **LPZ P1A5** | 1-hole | 1 | yellow | empty polycarb pushbutton station | 72 | 72 | 56 | **132.30** |
| **LPZ P1A5P** | 1-hole | 1 | yellow | empty p/button station with shroud | 73 | 72 | 56 | **594.30** |
| **LPZ P1A8** | 1-hole | 1 | grey | empty polycarb pushbutton station | 72 | 72 | 56 | **134.40** |
| **LPZ P2A8** | 2-hole | 1 | grey | empty polycarb pushbutton station | 117 | 72 | 56 | **162.75** |
| **LPZ P3A8** | 3-hole | 1 | grey | empty polycarb pushbutton station | 151 | 72 | 56 | **189.00** |
| **LPZ P4A8** | 4-hole | 1 | grey | empty polycarb pushbutton station | 186 | 72 | 56 | **296.10** |
| **LPZ P5A8** | 5-hole | 1 | grey | empty polycarb pushbutton station | 220 | 72 | 56 | **364.35** |
| **LPZ P6A8** | 6-hole | 1 | grey | empty polycarb pushbutton station | 256 | 72 | 56 | **437.85** |
| **LPZ XP5** | 4-piece set yellow screw protection caps for pushbutton stations | | | | | | 4pcs | **79.80** |
| **LPZ XP8** | 4-piece set grey screw protection caps for pushbutton stations | | | | | | 4pcs | **79.80** |

## Base mounting contact blocks and indicating modules *for above stations*

| | | | | |
|---|---|---|---|---|
| **LPX CB10** | green | 1 x NO | base-mount screw-terminal contact block for above stations | **124.95** |
| **LPX CB01** | red | 1 x NC | base-mount screw-terminal contact block for above stations | **124.95** |
| **LPX LPBB*** | * | 12 - 30 VAC/DC | base-mount LED-integrated lamp module for above stations | **247.80** |
| **LPX LPBM*** | * | 185 - 265 VAC | base-mount LED-integrated lamp module for above stations | **372.75** |

***** *Replace with:* ***3*** *(green) /* ***4*** *(red) /* ***5*** *(yellow) /* ***6*** *(blue) /* ***8*** *(white) - for colours*

## Metallic control stations IP66, IP67

- Without actuators and contact blocks
- Enclosures made of aluminium alloy suitable for pushbuttons, selector switches and pilot lights
- Cable entry Ø21 mm *(for M20 or PG13.5 cable glands)*
  - No cable entry for 8/12/16-way

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **LPZ M1A5** | 1-hole | 1 | yellow | industrial metal pushbutton station | 80 | 80 | 73 | **725.55** |
| **LPZ M1A5P** | 1-hole | 1 | yellow | p/button station *(with half shroud)* | 80 | 80 | 73 | **1 017.45** |
| **LPZ M1A8** | 1-hole | 1 | grey | industrial metal pushbutton station | 80 | 80 | 73 | **725.55** |
| **LPZ M2A8** | 2-hole | 1 | grey | industrial metal pushbutton station | 130 | 80 | 73 | **901.95** |
| **LPZ M3A8** | 3-hole | 1 | grey | industrial metal pushbutton station | 170 | 80 | 73 | **1 081.50** |
| **LPZ M4A8** | 4-hole | 1 | grey | industrial metal pushbutton station | 170 | 80 | 73 | **1 197.00** |
| **LPZ M5A8** | 5-hole | 1 | grey | industrial metal pushbutton station | 230 | 80 | 73 | **1 575.00** |
| **LPZ M6A8** | 6-hole | 1 | grey | industrial metal pushbutton station | 230 | 80 | 73 | **1 690.50** |
| **LPZ M8CA8** | 8-hole | 2 x 4 | grey | industrial metal pushbutton station | 160 | 160 | 90 | **1 953.00** |
| **LPZ M12CA8** | 12-hole | 3 x 4 | grey | industrial metal pushbutton station | 170 | 190 | 90 | **2 142.00** |
| **LPZ M16CA8** | 16-hole | 4 x 4 | grey | industrial metal pushbutton station | 190 | 250 | 90 | **2 551.50** |



Above ZAR prices do not include VAT. E&OE


GX16...


GX32...U25


GX16 52U


GXM6

## GX series - Rotary cam switches

| type | poles | contact rating AC1 (A) | contact rating AC23A (kW at 400V) | description | action | price |
|---|---|---|---|---|---|---|
| • **16A/20A** switches *(std. 48 x 48 mm)*, **32A/40A** switches *(std. 65 x 65 mm)* front plate | | | | | | |
| **ON/OFF switches** | | | | | | |
| **GX16 90U** | 1-pole | 16A | 5.5 kW | on-off switch | (O-I) | **315.00** |
| **GX16 91U** | 2-pole | 16A | 5.5 kW | on-off switch | (O-I) | **367.50** |
| **GX16 10U** | 3-pole | 16A | 5.5 kW | on-off switch | (O-I) | **420.00** |
| **GX16 92U** | 4-pole | 16A | 5.5 kW | on-off switch | (O-I) | **596.40** |
| **GX20 90U** | 1-pole | 20A | 7.5 kW | on-off switch | (O-I) | **378.00** |
| **GX20 91U** | 2-pole | 20A | 7.5 kW | on-off switch | (O-I) | **441.00** |
| **GX20 10U** | 3-pole | 20A | 7.5 kW | on-off switch | (O-I) | **525.00** |
| **GX20 92U** | 4-pole | 20A | 7.5 kW | on-off switch | (O-I) | **716.10** |
| **GX32 90U** | 1-pole | 32A | 15 kW | on-off switch | (O-I) | **493.50** |
| **GX32 91U** | 2-pole | 32A | 15 kW | on-off switch | (O-I) | **630.00** |
| **GX32 10U** | 3-pole | 32A | 15 kW | on-off switch | (O-I) | **766.50** |
| **GX32 92U** | 4-pole | 32A | 15 kW | on-off switch | (O-I) | **1 270.50** |
| **GX40 90U** | 1-pole | 40A | 18.5 kW | on-off switch | (O-I) | **978.60** |
| **GX40 91U** | 2-pole | 40A | 18.5 kW | on-off switch | (O-I) | **1 218.00** |
| **GX40 10U** | 3-pole | 40A | 18.5 kW | on-off switch | (O-I) | **1 543.50** |
| **GX40 92U** | 4-pole | 40A | 18.5 kW | on-off switch | (O-I) | **1 774.50** |
| **ON/OFF isolators** with padlockable red/yellow operating handle | | | | | | |
| **GX16 10U25** | 3-pole | 16A | 5.5 kW | main isolator | (0-I) | **635.25** |
| **GX16 92U25** | 4-pole | 16A | 5.5 kW | main isolator | (0-I) | **697.20** |
| **GX32 10U25** | 3-pole | 32A | 15 kW | main isolator | (0-I) | **1 026.90** |
| **GX32 92U25** | 4-pole | 32A | 15 kW | main isolator | (0-I) | **1 386.00** |
| **Changeover switches with "OFF" position** | | | | | | |
| **GX16 51U** | 1-pole | 16A | 5.5 kW | changeover switch | (I-O-II) | **367.50** |
| **GX16 52U** | 2-pole | 16A | 5.5 kW | changeover switch | (I-O-II) | **472.50** |
| **GX16 53U** | 3-pole | 16A | 5.5 kW | changeover switch | (I-O-II) | **588.00** |
| **GX16 75U** | 4-pole | 16A | 5.5 kW | changeover switch | (I-O-II) | **894.60** |
| **GX20 51U** | 1-pole | 20A | 7.5 kW | changeover switch | (I-O-II) | **441.00** |
| **GX20 52U** | 2-pole | 20A | 7.5 kW | changeover switch | (I-O-II) | **588.00** |
| **GX20 53U** | 3-pole | 20A | 7.5 kW | changeover switch | (I-O-II) | **735.00** |
| **GX20 75U** | 4-pole | 20A | 7.5 kW | changeover switch | (I-O-II) | **1 081.50** |
| **GX32 51U** | 1-pole | 32A | 15 kW | changeover switch | (I-O-II) | **609.00** |
| **GX32 52U** | 2-pole | 32A | 15 kW | changeover switch | (I-O-II) | **871.50** |
| **GX32 53U** | 3-pole | 32A | 15 kW | changeover switch | (I-O-II) | **1 155.00** |
| **GX32 75U** | 4-pole | 32A | 15 kW | changeover switch | (I-O-II) | **2 026.50** |
| **GX40 51U** | 1-pole | 40A | 18.5 kW | changeover switch | (I-O-II) | **1 218.00** |
| **GX40 52U** | 2-pole | 40A | 18.5 kW | changeover switch | (I-O-II) | **1 774.50** |
| **GX40 53U** | 3-pole | 40A | 18.5 kW | changeover switch | (I-O-II) | **2 331.00** |
| **GX40 75U** | 4-pole | 40A | 18.5 kW | changeover switch | (I-O-II) | **2 887.50** |
| **Changeover switches without "OFF" position** | | | | | | |
| **GX16 54U** | 1-pole | 16A | 5.5 kW | changeover switch | (I-II) | **447.30** |
| **GX16 55U** | 2-pole | 16A | 5.5 kW | changeover switch | (I-II) | **596.40** |
| **GX16 56U** | 3-pole | 16A | 5.5 kW | changeover switch | (I-II) | **745.50** |
| **GX16 69U** | 4-pole | 16A | 5.5 kW | changeover switch | (I-II) | **894.60** |
| **GX20 54U** | 1-pole | 20A | 7.5 kW | changeover switch | (I-II) | **536.55** |
| **GX20 55U** | 2-pole | 20A | 7.5 kW | changeover switch | (I-II) | **716.10** |
| **GX20 56U** | 3-pole | 20A | 7.5 kW | changeover switch | (I-II) | **894.60** |
| **GX20 69U** | 4-pole | 20A | 7.5 kW | changeover switch | (I-II) | **1 081.50** |
| **GX32 54U** | 1-pole | 32A | 15 kW | changeover switch | (I-II) | **887.25** |
| **GX32 55U** | 2-pole | 32A | 15 kW | changeover switch | (I-II) | **1 270.50** |
| **GX32 56U** | 3-pole | 32A | 15 kW | changeover switch | (I-II) | **1 648.50** |
| **GX32 69U** | 4-pole | 32A | 15 kW | changeover switch | (I-II) | **2 026.50** |
| **Voltmeter selector switches** | | | | | | |
| **GX16 67U** | – | 16A | | voltmeter selector switch | ph-ph + off | **475.65** |
| **GX16 66U** | – | 16A | | voltmeter selector switch | ph-ph/ph-n + off | **605.85** |
| **Ammeter selector switches** | | | | | | |
| **GX16 97U** | – | 16A | | ammeter selector switch | direct reading | **871.50** |
| **GX16 98U** | – | 16A | | ammeter selector switch | for 3 CTs | **588.00** |
| **Accessories for GX series cam switches** | | | | | | |
| **GXM5** | 48 x 60 mm | | | front plate with legend for GX switches | 16/20A | **180.60** |
| **GXM6** | 65 x 80 mm | | | front plate with legend for GX switches | 32/40A | **194.25** |



227603



227622



227636



WE40

## PR ONE series - Rotary cam switches

- 45° switching angle
- Forced opened contacts
- IP40 front protection, IP20 rear terminal *(finger protection)*
- Fulfils load break requirements up to 690V
- Operating temperature limits: -20°C...70°C
- Front bezel: 48 mm ☐ - engraved aluminium plate with black handle
- Standards: IEC EN 60947-1, 60947-3, UL508, UL-CSA

| type | contact rating AC-21 | (AC-23 at 400V) | poles | description | action | price |
|---|---|---|---|---|---|---|
| **ON-OFF switches** | | | | | | |
| **227600** | 16A | 7.5 kW | 1-pole | on-off rotary cam switch | (O-I) | **414.75** |
| **227601** | 16A | 7.5 kW | 2-pole | on-off rotary cam switch | (O-I) | **486.15** |
| **227602** | 16A | 7.5 kW | 3-pole | on-off rotary cam switch | (O-I) | **557.55** |
| **227603** | 25A | 11 kW | 1-pole | on-off rotary cam switch | (O-I) | **569.10** |
| **227604** | 25A | 11 kW | 2-pole | on-off rotary cam switch | (O-I) | **679.35** |
| **227605** | 25A | 11 kW | 3-pole | on-off rotary cam switch | (O-I) | **814.80** |
| **227606** | 32A | 11 kW | 1-pole | on-off rotary cam switch | (O-I) | **657.30** |
| **227608** | 32A | 11 kW | 3-pole | on-off rotary cam switch | (O-I) | **1 025.85** |
| **Change-over switches** *(with "OFF" position)* | | | | | | |
| **227609** | 16A | 7.5 kW | 1-pole | changeover rotary cam switch | (I-O-II) | **486.15** |
| **227610** | 16A | 7.5 kW | 2-pole | changeover rotary cam switch | (I-O-II) | **624.75** |
| **227611** | 16A | 7.5 kW | 3-pole | changeover rotary cam switch | (I-O-II) | **788.55** |
| **227612** | 25A | 11 kW | 1-pole | changeover rotary cam switch | (I-O-II) | **679.35** |
| **227613** | 25A | 11 kW | 2-pole | changeover rotary cam switch | (I-O-II) | **907.20** |
| **227614** | 25A | 11 kW | 3-pole | changeover rotary cam switch | (I-O-II) | **1 134.00** |
| **227615** | 32A | 11 kW | 1-pole | changeover rotary cam switch | (I-O-II) | **811.65** |
| **227616** | 32A | 11 kW | 2-pole | changeover rotary cam switch | (I-O-II) | **1 165.50** |
| **227617** | 32A | 11 kW | 3-pole | changeover rotary cam switch | (I-O-II) | **1 543.50** |
| **2 to 5 way switches with** *(with "OFF" position)* | | | | | | |
| **2-way switches with OFF** | | | | | | |
| **227618** | 16A | 7.5 kW | 1-pole | 2-contact rotary cam switch | (O-I-II) | **486.15** |
| **227619** | 16A | 7.5 kW | 2-pole | 4-contact rotary cam switch | (O-I-II) | **624.75** |
| **227620** | 16A | 7.5 kW | 3-pole | 6-contact rotary cam switch | (O-I-II) | **788.55** |
| **227624** | 25A | 11 kW | 1-pole | 2-contact rotary cam switch | (O-I-II) | **679.35** |
| **227625** | 25A | 11 kW | 2-pole | 4-contact rotary cam switch | (O-I-II) | **907.20** |
| **227626** | 25A | 11 kW | 3-pole | 6-contact rotary cam switch | (O-I-II) | **1 134.00** |
| **227630** | 32A | 11 kW | 1-pole | 2-contact rotary cam switch | (O-I-II) | **811.65** |
| **227631** | 32A | 11 kW | 2-pole | 4-contact rotary cam switch | (O-I-II) | **1 165.50** |
| **227632** | 32A | 11 kW | 3-pole | 6-contact rotary cam switch | (O-I-II) | **1 543.50** |
| **3-way switches with OFF** | | | | | | |
| **227621** | 16A | 7.5 kW | 1-pole | 3-contact rotary cam switch | O-I-2-3 | **557.55** |
| **227627** | 25A | 11 kW | 1-pole | 3-contact rotary cam switch | O-I-2-3 | **811.65** |
| **4-way switches with OFF** | | | | | | |
| **227622** | 16A | 7.5 kW | 1-pole | 4-contact rotary cam switch | O-I-2-3-4 | **624.75** |
| **5-way switches with OFF** | | | | | | |
| **227623** | 16A | 7.5 kW | 1-pole | 5-contact rotary cam switch | O-I-2-3-4-5 | **746.55** |
| **Binary code switches** *(Ideal for VSD panels up to 11 preset positions)* | | | | | (set point) | |
| **N62338A** | – | – | 4-pole | binary cam switch | (0-3) | **786.45** |
| **N13484A** | – | – | 4-pole | binary cam switch | (0-5) | **918.75** |
| **NR56EQ10A** | – | – | 4-pole | binary cam switch | (0-7) | **890.40** |
| **NR51UQ10A** | – | – | 4-pole | binary cam switch | (0-11) | **1 017.45** |
| **Instrument switches** | | | | | | |
| **Voltmeter switch, with neutral** | | | | | | |
| **227636** | 16A | 7.5 kW | 1-pole | voltmeter selector switch (ph-ph/ph-N+off) | | **788.55** |
| **Ammeter switch, 3 CTs with common point** | | | | | | |
| **227637** | 16A | 7.5 kW | 1-pole | ammeter selector switch *(for 3 CTs)* | | **788.55** |
| **Accessories** for above cam switches | | | | | | |
| **WE40** | ☐ 48 mm | | aluminium | engravable blank legend plate insert | | **32.87** |
| **Q048** | ☐ 48 mm | | aluminium | engravable duty label for legend | | **31.50** |
| **IF9** | – | | aluminium | insert for above duty label | | **54.60** |



Above ZAR prices do not include VAT. E&OE


AD16-16DSR02


AD16-16DSY22


AD16-16DSG22


AD16-16MR22


AD22-22DSR01


AD22-22DSG02


AD22-22DSB38


AD22-22D/KW22

**LED pilot lights** - Super bright multi-chip LED pilot lights *(with diffuser/legend insert)*

- Shock resistant, low power consumption ≥ 20mA
- Brightness: ≥ 100cd/m²
- Long life ≥ 30.000 hrs

| type | lens colour | voltage ± 20% | mounting hole Ø | description | price |
|---|---|---|---|---|---|
| **Ø16 mm LED pilot lights** *(high brightness)* | | | | *Lens: Ø19 x 10 - Body: L 24 mm* | |
| • **IP65** *(IP20 terminal protection)* | | | | | |
| **AD16-16DSR02** | red | 24 VAC/DC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSG02** | green | 24 VAC/DC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSY02** | yellow | 24 VAC/DC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSB02** | blue | 24 VAC/DC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSW02** | white | 24 VAC/DC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSR11** | red | 110 VAC/DC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSG11** | green | 110 VAC/DC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSY11** | yellow | 110 VAC/DC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSB11** | blue | 110 VAC/DC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSW11** | white | 110 VAC/DC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSR22** | red | 220 VAC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSG22** | green | 220 VAC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSY22** | yellow | 220 VAC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSB22** | blue | 220 VAC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **AD16-16DSW22** | white | 220 VAC | Ø16 mm | panel-mount LED pilot light | **37.38** |
| **Self-flashing LED pilot light and electronic buzzer** | | | | Lens: Ø19 x 10 - Body: L 41.5 mm | |
| **AD16-16MR02** | red | 24 VAC/DC | Ø16 mm | self-flash LED p/light + buzzer | **75.60** |
| **AD16-16MR22** | red | 220 VAC | Ø16 mm | self-flash LED p/light + buzzer | **75.60** |
| **Ø22 mm LED pilot lights** *(high brightness)* **-** *4 LEDs* | | | | Lens: Ø29 x13 mm - Body: L 39 mm | |
| • **IP65** *(IP20 terminal protection)* | | | | | |
| **AD22-22DSR01** | red | 12 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSG01** | green | 12 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSA01** | amber | 12 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSY01** | yellow | 12 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSB01** | blue | 12 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSW01** | white | 12 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSR02** | red | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSG02** | green | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSA02** | amber | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSY02** | yellow | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSB02** | blue | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSW02** | white | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSR11** | red | 110 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSG11** | green | 110 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSA11** | amber | 110 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSY11** | yellow | 110 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSB11** | blue | 110 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSW11** | white | 110 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSR22** | red | 220 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSG22** | green | 220 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSA22** | amber | 220 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSY22** | yellow | 220 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSB22** | blue | 220 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSW22** | white | 220 VAC/DC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSR38** | red | 380 VAC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSG38** | green | 380 VAC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSA38** | amber | 380 VAC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSY38** | yellow | 380 VAC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSB38** | blue | 380 VAC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **AD22-22DSW38** | white | 380 VAC | Ø22 mm | panel-mount LED pilot light | **37.38** |
| **Ø22 mm LED pilot lights with anti-interference** | | | | Longer body: L 50 mm | |
| • Longer body accommodates built-in anti-interference circuit *(threshold value - below 40V)* | | | | | |
| • Prevents unwanted illuminating in presence of slight voltage backfeed in certain applications | | | | | |
| **AD22-22D/KR22** | red | 230 VAC | Ø22 mm | panel-mount LED pilot light | **52.50** |
| **AD22-22D/KG22** | green | 230 VAC | Ø22 mm | panel-mount LED pilot light | **52.50** |
| **AD22-22D/KA22** | amber | 230 VAC | Ø22 mm | panel-mount LED pilot light | **52.50** |
| **AD22-22D/KY22** | yellow | 230 VAC | Ø22 mm | panel-mount LED pilot light | **52.50** |
| **AD22-22D/KB22** | blue | 230 VAC | Ø22 mm | panel-mount LED pilot light | **52.50** |
| **AD22-22D/KW22** | white | 230 VAC | Ø22 mm | panel-mount LED pilot light | **52.50** |

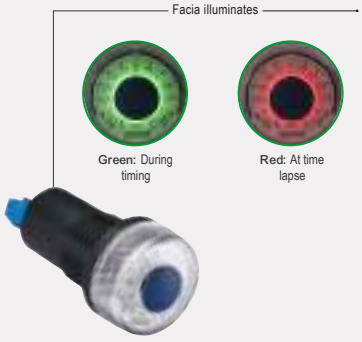
## Panel-mount control / indicating devices Ø22/30 mm


AD22-22MR02

| type | colour | voltage ± 20% | mounting hole Ø | description | price |
|---|---|---|---|---|---|
| **Ø22 mm dual colour LED pilot light** | | | **IP65** | | |
| • Dual light - red or green LED indication on one pilot light *(white lens)* | | | | | |
| • Lens: Ø29 x 13 - Body: L 54 mm | | | | | |
| **AD22-22DRG02** | red/green | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **131.25** |
| **AD22-22DRG11** | red/green | 110 VAC/DC | Ø22 mm | panel-mount LED pilot light | **131.25** |
| **AD22-22DRG22** | red/green | 220 VAC | Ø22 mm | panel-mount LED pilot light | **131.25** |
| **Self-flashing LED pilot light** | | *(intermittent flashing - 2 Hz)* | | | |
| **AD22-22SR02** | red | 24 VAC/DC | Ø22 mm | self-flashing LED pilot light | **112.35** |
| **AD22-22SR22** | red | 220 VAC | Ø22 mm | self-flashing LED pilot light | **112.35** |


AD22-22MK02

| | | | | | |
|---|---|---|---|---|---|
| **Ø22 mm panel-mount buzzer** | | | **IP40** | | |
| • Continuous sound buzzer *(80dB - 10 cm)* | | | | | |
| • Lens: Ø30 x 13 - Body: L 49 mm | | | | | |
| **AD22-22MK02** | black | 24 VAC/DC | Ø22 mm | panel-mounting buzzer | **102.90** |
| **AD22-22MK22** | black | 220 VAC | Ø22 mm | panel-mounting buzzer | **102.90** |
| **Combination buzzer / flashing LED pilot light** | | | | | |
| • Intermittent sound and flashing pilot light | | | | | |
| **AD22-22MR02** | red | 24 VAC/DC | Ø22 mm | self-flash LED p/light + buzzer | **102.90** |
| **AD22-22MR22** | red | 220 VAC | Ø22 mm | self-flash LED p/light + buzzer | **102.90** |



RZ3A1A60S3

| | | | | | |
|---|---|---|---|---|---|
| **Ø22 mm panel-mount electronic timer** | | | **IP65** | | |
| • Function: | | On-delay timer range: 0 - 60 seconds | | | |
| • Mounting: | | Mounts through standard Ø22.5 mm pushbutton hole | | | |
| • Supply voltage: | | 24 VDC | | | |
| • Switching current: | | 200 mA | | | |
| • Indication: | | Facia illuminates - green during timing / red - at time lapse | | | |
| • Operating temp: | | -5°C...+55°C | | | |
| **RZ3A1A60S3** | 0...60 sec | 10...30 VDC | Ø22 mm | on-delay p/mount analog timer | **534.45** |

| | | | | | |
|---|---|---|---|---|---|
| **Ø30 mm panel-mount indicating devices** | | | **IP65** | | |
| • Ø30 mm LED pilot lights *(high brightness)* | | | | | |
| • Lens: *Ø36.2 x 15 - Body: L 40 mm* | | | | | |
| **AD30-30DSR02** | red | 24 VAC/DC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSG02** | green | 24 VAC/DC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSY02** | yellow | 24 VAC/DC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSB02** | blue | 24 VAC/DC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSW02** | white | 24 VAC/DC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSR22** | red | 220 VAC/DC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSG22** | green | 220 VAC/DC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSY22** | yellow | 220 VAC/DC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSB22** | blue | 220 VAC/DC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSW22** | white | 220 VAC/DC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSR38** | red | 380 VAC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSG38** | green | 380 VAC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSY38** | yellow | 380 VAC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSB38** | blue | 380 VAC | Ø30 mm | panel-mount LED pilot light | **75.60** |
| **AD30-30DSW38** | white | 380 VAC | Ø30 mm | panel-mount LED pilot light | **75.60** |


AD30-30DSG22

| | | | | | |
|---|---|---|---|---|---|
| **Ø30 mm panel-mount buzzer** | | | **IP40** | | |
| **Combination buzzer / flashing LED pilot light** | | | | | |
| Combining a buzzer with a flashing LED pilot light into a single 22 mm unit offers space-saving convenience and dual alerting methods for improved safety in industrial environments. | | | | | |
| • Brightness: | | ≥ 100cd/m$^2$ | | | |
| • Long life | | ≥ 30.000 hrs | | | |
| • Lens: Ø36.2 x 15 - Body: L 40 mm | | | | | |
| • Continuous sound buzzer (80dB - 10 cm) | | | | | |
| • Intermittent sound and flashing pilot light | | | | | |
| • Shock resistant, low power consumption ≥ 20mA | | | | | |
| • Super bright multi-chip LED pilot lights *(with diffuser / legend insert)* | | | | | |
| **AD30-30MR02** | red | 24 VAC/DC | Ø22 mm | self-flash LED pilot light + buzzer | **131.25** |
| **AD30-30MR22** | red | 220 VAC/DC | Ø22 mm | self-flash LED pilot light + buzzer | **131.25** |


AD30-30MR02


Above ZAR prices do not include VAT. E&OE

## Panel-mount control / indicating devices Ø22 mm


AD101-22VMR


AD101-22AMG


AD101-22TMW


AD22-22VMG


AD22-22VAM...

| type | colour | voltage ± 20% | mounting hole Ø | description | price |
|---|---|---|---|---|---|
| **AD101 series - Ø22 mm panel meter indicators** | | | | Lens: Ø30 x 15 - Body: L 31 mm | |
| **AD101 - Ø22 mm** panel meter indicators with crystal screen offer large digit indication with sharp, defined, easy to read digits. Combination panel indicator/meter, providing indication such as Volts, Amps, Frequency or Temperature. | | | | | |
| **Voltmeter indicator AC** | | 20...500 VAC | | | |
| **AD101-22VMR** | red | 20...500 VAC | Ø22 mm | voltmeter panel indicator | **102.90** |
| **AD101-22VMG** | green | 20...500 VAC | Ø22 mm | voltmeter panel indicator | **102.90** |
| **AD101-22VMY** | yellow | 20...500 VAC | Ø22 mm | voltmeter panel indicator | **102.90** |
| **AD101-22VMB** | blue | 20...500 VAC | Ø22 mm | voltmeter panel indicator | **102.90** |
| **AD101-22VMW** | white | 20...500 VAC | Ø22 mm | voltmeter panel indicator | **102.90** |
| **Ammeter indicator AC** | | 0...100A *(with mini current transformer)* | | | |
| **AD101-22AMR** | red | 0...100A | Ø22 mm | ammeter panel indicator | **215.25** |
| **AD101-22AMG** | green | 0...100A | Ø22 mm | ammeter panel indicator | **215.25** |
| **AD101-22AMY** | yellow | 0...100A | Ø22 mm | ammeter panel indicator | **215.25** |
| **AD101-22AMB** | blue | 0...100A | Ø22 mm | ammeter panel indicator | **215.25** |
| **AD101-22AMW** | white | 0...100A | Ø22 mm | ammeter panel indicator | **215.25** |
| **Frequency meter indicator** | | 0…99Hz | | | |
| **AD101-22HZR** | red | 0…99Hz | Ø22 mm | frequency panel indicator | **102.90** |
| **AD101-22HZG** | green | 0…99Hz | Ø22 mm | frequency panel indicator | **102.90** |
| **AD101-22HZY** | yellow | 0…99Hz | Ø22 mm | frequency panel indicator | **102.90** |
| **AD101-22HZB** | blue | 0…99Hz | Ø22 mm | frequency panel indicator | **102.90** |
| **AD101-22HZW** | white | 0…99Hz | Ø22 mm | frequency panel indicator | **102.90** |
| **Temperature indicator** | | -22…+199°C | | | |
| **AD101-22TMR** | red | -22…+199°C | Ø22 mm | temperature panel indicator | **242.55** |
| **AD101-22TMG** | green | -22…+199°C | Ø22 mm | temperature panel indicator | **242.55** |
| **AD101-22TMY** | yellow | -22…+199°C | Ø22 mm | temperature panel indicator | **242.55** |
| **AD101-22TMB** | blue | -22…+199°C | Ø22 mm | temperature panel indicator | **242.55** |
| **AD101-22TMW** | white | -22…+199°C | Ø22 mm | temperature panel indicator | **242.55** |
| **AD22 series - Ø22 mm panel-mount indicators** | | | | Lens: Ø30 x 15 - Body: L 36 mm | |
| Combination panel indicator / panel meter, providing indication as Volts, Amps, Frequency | | | | | |
| **Voltmeter indicator AC** | | 20...500 VAC | | | |
| **AD22-22VMR** | red | 20...500 VAC | Ø22 mm | voltmeter panel indicator | **123.90** |
| **AD22-22VMG** | green | 20...500 VAC | Ø22 mm | voltmeter panel indicator | **123.90** |
| **AD22-22VMY** | yellow | 20...500 VAC | Ø22 mm | voltmeter panel indicator | **123.90** |
| **AD22-22VMB** | blue | 20...500 VAC | Ø22 mm | voltmeter panel indicator | **123.90** |
| **AD22-22VMW** | white | 20...500 VAC | Ø22 mm | voltmeter panel indicator | **123.90** |
| **Voltmeter indicator DC** | | 5...60 VDC | | | |
| **AD22-22VBR** | red | 5...60 VDC | Ø22 mm | voltmeter panel indicator | **141.75** |
| **AD22-22VBG** | green | 5...60 VDC | Ø22 mm | voltmeter panel indicator | **141.75** |
| **AD22-22VBY** | yellow | 5...60 VDC | Ø22 mm | voltmeter panel indicator | **141.75** |
| **AD22-22VBB** | blue | 5...60 VDC | Ø22 mm | voltmeter panel indicator | **141.75** |
| **AD22-22VBW** | white | 5...60 VDC | Ø22 mm | voltmeter panel indicator | **141.75** |
| **Ammeter indicator AC** | | 0...100A *(with mini current transformer)* | | | |
| **AD22-22AMR** | red | 0...100A | Ø22 mm | ammeter panel indicator | **233.10** |
| **AD22-22AMG** | green | 0...100A | Ø22 mm | ammeter panel indicator | **233.10** |
| **AD22-22AMY** | yellow | 0...100A | Ø22 mm | ammeter panel indicator | **233.10** |
| **AD22-22AMB** | blue | 0...100A | Ø22 mm | ammeter panel indicator | **233.10** |
| **AD22-22AMW** | white | 0...100A | Ø22 mm | ammeter panel indicator | **233.10** |
| **Frequency meter indicator** | | 0…99Hz | | | |
| **AD22-22HZR** | red | 0…99Hz | Ø22 mm | frequency panel indicator | **123.90** |
| **AD22-22HZG** | green | 0…99Hz | Ø22 mm | frequency panel indicator | **123.90** |
| **AD22-22HZY** | yellow | 0…99Hz | Ø22 mm | frequency panel indicator | **123.90** |
| **AD22-22HZB** | blue | 0…99Hz | Ø22 mm | frequency panel indicator | **123.90** |
| **AD22-22HZW** | white | 0…99Hz | Ø22 mm | frequency panel indicator | **123.90** |
| **Combination AC Volt / Ammeter** | | 20...500V / 0...100A *(with mini current transformer)* | | | |
| **AD22-22VAMR** | red | 500V/100A | Ø22 mm | volt/ammeter panel indicator | **317.10** |
| **AD22-22VAMG** | green | 500V/100A | Ø22 mm | volt/ammeter panel indicator | **317.10** |
| **AD22-22VAMY** | yellow | 500V/100A | Ø22 mm | volt/ammeter panel indicator | **317.10** |
| **AD22-22VAMB** | blue | 500V/100A | Ø22 mm | volt/ammeter panel indicator | **317.10** |
| **AD22-22VAMW** | white | 500V/100A | Ø22 mm | volt/ammeter panel indicator | **317.10** |



GQ10T-JN/02/R



GQ10T-JN/22/G



GQ12T-JN/02/Y



GQ16T-LN/02/R



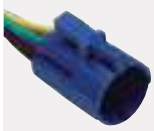
GQ22T-LN/02/G



AGQ22F-11/JS



AGQ22F-11/E/JS/22/R



HBD-T1

**Indicator lights** *(panel-mounting)* **IP67**

- Super bright LED pilot lights
- Long life ≥ 50.000 hrs

| type | lens colour | voltage ± 20% | mounting hole Ø | description | price |
|---|---|---|---|---|---|
| **HBD series - Metallic panel-mount LED pilot lights** | | | | **IP67** | |
| **Ø10 mm mounting hole** | | *solder / push-on* | | Lens: Ø11.5 x 1.5 mm - Body: L 30 mm | |
| **GQ10T-JN/02/R** | red | 24 VAC/DC | Ø10 mm | panel-mount LED pilot light | **122.85** |
| **GQ10T-JN/02/G** | green | 24 VAC/DC | Ø10 mm | panel-mount LED pilot light | **122.85** |
| **GQ10T-JN/02/Y** | yellow | 24 VAC/DC | Ø10 mm | panel-mount LED pilot light | **122.85** |
| **GQ10T-JN/02/B** | blue | 24 VAC/DC | Ø10 mm | panel-mount LED pilot light | **122.85** |
| **GQ10T-JN/02/W** | white | 24 VAC/DC | Ø10 mm | panel-mount LED pilot light | **122.85** |
| **GQ10T-JN/22/R** | red | 220 VAC/DC | Ø10 mm | panel-mount LED pilot light | **122.85** |
| **GQ10T-JN/22/G** | green | 220 VAC/DC | Ø10 mm | panel-mount LED pilot light | **122.85** |
| **GQ10T-JN/22/Y** | yellow | 220 VAC/DC | Ø10 mm | panel-mount LED pilot light | **122.85** |
| **GQ10T-JN/22/B** | blue | 220 VAC/DC | Ø10 mm | panel-mount LED pilot light | **122.85** |
| **GQ10T-JN/22/W** | white | 220 VAC/DC | Ø10 mm | panel-mount LED pilot light | **122.85** |
| **Ø12 mm mounting hole** | | *solder / push-on* | | Lens: Ø13.5 x 1.5 mm - Body: L 33 mm | |
| **GQ12T-JN/02/R** | red | 24 VAC/DC | Ø12 mm | panel-mount LED pilot light | **134.40** |
| **GQ12T-JN/02/G** | green | 24 VAC/DC | Ø12 mm | panel-mount LED pilot light | **134.40** |
| **GQ12T-JN/02/Y** | yellow | 24 VAC/DC | Ø12 mm | panel-mount LED pilot light | **134.40** |
| **GQ12T-JN/02/B** | blue | 24 VAC/DC | Ø12 mm | panel-mount LED pilot light | **134.40** |
| **GQ12T-JN/02/W** | white | 24 VAC/DC | Ø12 mm | panel-mount LED pilot light | **134.40** |
| **GQ12T-JN/22/R** | red | 220 VAC/DC | Ø12 mm | panel-mount LED pilot light | **134.40** |
| **GQ12T-JN/22/G** | green | 220 VAC/DC | Ø12 mm | panel-mount LED pilot light | **134.40** |
| **GQ12T-JN/22/Y** | yellow | 220 VAC/DC | Ø12 mm | panel-mount LED pilot light | **134.40** |
| **GQ12T-JN/22/B** | blue | 220 VAC/DC | Ø12 mm | panel-mount LED pilot light | **134.40** |
| **GQ12T-JN/22/W** | white | 220 VAC/DC | Ø12 mm | panel-mount LED pilot light | **134.40** |
| **Ø16 mm mounting hole** | | *screw terminal* | | Lens: Ø18 x 2 mm - Body: L 34 mm | |
| **GQ16T-LN/02/R** | red | 24 VAC/DC | Ø16 mm | panel-mount LED pilot light | **155.40** |
| **GQ16T-LN/02/G** | green | 24 VAC/DC | Ø16 mm | panel-mount LED pilot light | **155.40** |
| **GQ16T-LN/02/Y** | yellow | 24 VAC/DC | Ø16 mm | panel-mount LED pilot light | **155.40** |
| **GQ16T-LN/02/B** | blue | 24 VAC/DC | Ø16 mm | panel-mount LED pilot light | **155.40** |
| **GQ16T-LN/02/W** | white | 24 VAC/DC | Ø16 mm | panel-mount LED pilot light | **155.40** |
| **GQ16T-LN/22/R** | red | 220 VAC/DC | Ø16 mm | panel-mount LED pilot light | **155.40** |
| **GQ16T-LN/22/G** | green | 220 VAC/DC | Ø16 mm | panel-mount LED pilot light | **155.40** |
| **GQ16T-LN/22/Y** | yellow | 220 VAC/DC | Ø16 mm | panel-mount LED pilot light | **155.40** |
| **GQ16T-LN/22/B** | blue | 220 VAC/DC | Ø16 mm | panel-mount LED pilot light | **155.40** |
| **GQ16T-LN/22/W** | white | 220 VAC/DC | Ø16 mm | panel-mount LED pilot light | **155.40** |
| **Ø22 mm mounting hole** | | *screw terminal* | | Lens: Ø25 x 2.5 mm - Body: L 32 mm | |
| **GQ22T-LN/02/R** | red | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **246.75** |
| **GQ22T-LN/02/G** | green | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **246.75** |
| **GQ22T-LN/02/Y** | yellow | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **246.75** |
| **GQ22T-LN/02/B** | blue | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **246.75** |
| **GQ22T-LN/02/W** | white | 24 VAC/DC | Ø22 mm | panel-mount LED pilot light | **246.75** |
| **GQ22T-LN/22/R** | red | 220 VAC/DC | Ø22 mm | panel-mount LED pilot light | **246.75** |
| **GQ22T-LN/22/G** | green | 220 VAC/DC | Ø22 mm | panel-mount LED pilot light | **246.75** |
| **GQ22T-LN/22/Y** | yellow | 220 VAC/DC | Ø22 mm | panel-mount LED pilot light | **246.75** |
| **GQ22T-LN/22/B** | blue | 220 VAC/DC | Ø22 mm | panel-mount LED pilot light | **246.75** |
| **GQ22T-LN/22/W** | white | 220 VAC/DC | Ø22 mm | panel-mount LED pilot light | **246.75** |
| **HBDS1 series - Vandal-proof 304 stainless steel pushbuttons** | | | | **IP67** | |
| Vandalproof stainless steel pushbuttons *(mount through standard Ø22 mm hole)* | | | | | |
| • 5A 250 VAC | | | • Termination: solder/push-on 2.8 x 0.5 mm | | |
| **AGQ22F-11/JS** | silver | momentary | Ø22 mm | 1NO + 1NC pushbutton only | **407.40** |
| **AGQ22F-11/Z/JS** | silver | alternate | Ø22 mm | 1NO + 1NC pushbutton only | **457.80** |
| **Illuminated pushbuttons** *(ring type LED)* | | | *(momentary action)* | | |
| Illuminated versions feature LED ring-type illumination with clear visibility from a distance. | | | | | |
| **AGQ22F-11/E/JS/02/R** | red | 24 VAC/DC | Ø22 mm | 1NO + 1NC illuminated p/button | **457.80** |
| **AGQ22F-11/E/JS/02/G** | green | 24 VAC/DC | Ø22 mm | 1NO + 1NC illuminated p/button | **457.80** |
| **AGQ22F-11/E/JS/02/Y** | yellow | 24 VAC/DC | Ø22 mm | 1NO + 1NC illuminated p/button | **457.80** |
| **AGQ22F-11/E/JS/02/B** | blue | 24 VAC/DC | Ø22 mm | 1NO + 1NC illuminated p/button | **457.80** |
| **AGQ22F-11/E/JS/02/W** | white | 24 VAC/DC | Ø22 mm | 1NO + 1NC illuminated p/button | **457.80** |
| **AGQ22F-11/E/JS/22/R** | red | 220 VAC/DC | Ø22 mm | 1NO + 1NC illuminated p/button | **457.80** |
| **AGQ22F-11/E/JS/22/G** | green | 220 VAC/DC | Ø22 mm | 1NO + 1NC illuminated p/button | **508.20** |
| **AGQ22F-11/E/JS/22/Y** | yellow | 220 VAC/DC | Ø22 mm | 1NO + 1NC illuminated p/button | **457.80** |
| **AGQ22F-11/E/JS/22/B** | blue | 220 VAC/DC | Ø22 mm | 1NO + 1NC illuminated p/button | **457.80** |
| **AGQ22F-11/E/JS/22/W** | white | 220 VAC/DC | Ø22 mm | 1NO + 1NC illuminated p/button | **457.80** |
| **HBD-T1** | connector | | with 150 mm wire leads for connecting HBDS1 pushbuttons | | **77.70** |



Above ZAR prices do not include VAT. E&OE

Lovato electric

# PV Interface Protection Unit

The PMVF81 is a reliable grid protection device designed to safely disconnect PV systems when they operate in parallel with the electric utility. It monitors voltage and frequency limits and complies with key industry standards. In case of grid issues, the PMVF81 trips the interface switch to isolate the system.




## Features & Benefits:

- Compact design only 4 modules wide
- Manages both primary and backup interface switches
- Supports AC and DC power supplies, enhancing versatility
- Complies with key standards: VDE-AR-N4105
- Optional expansion modules for USB, RS-232, RS-485, and Ethernet
- Monitors voltage and frequency with programmable thresholds and delays

MADE IN ITALY
EST. 1922

Scan the QR to learn more



F70AY...



F70BY...



F71EY00-1 + PRSL1880PI



F71GG00-1

(Shown populated)

## Mike series - Pendant control stations

**Mike** pendant stations are designed for heavy-duty applications. Rubber pushbuttons guarantee total protection from dust and liquid penetration. Moulded two-colour button discs offer permanent, clear symbols and text. The ergonomic design, compact dimensions with antislip grooves reduce fatigue, improving ease of use under any working conditions. Wiring is improved by separating the actuators *(mounted on top cover)* from the contact blocks *(fixed to the base)* with the cable inlet.

- Weather-resistant materials with guaranteed protection against penetration of water and dust
- Additional actuator with up to 3 contacts can be mounted to the pendant station *(front or bottom base)*
- Operational ambient temperature limits: -40°C...+80°C
- Protection degree: IP66 / IP67 / IP69K
- Mechanical life: 10 x $10^6$ operations
- Insulation category: Class II
- Conformity to standards: IEC/EN 60204-1, 60947-1, 60947-5-1/5, 60529, EN418, CSA-C22.2 No 14-13, UL 508

| type | no. of ways | description | reset/ alarm **2NO** | Mushroom E/stop **1NC** | 1 speed button **1NO** | 2 speed button **1NO+1NO** | price |
|---|---|---|---|---|---|---|---|
| **Mike series** | | *single row pendant control station* | **IP66** | | | | |
| **F70AY120200-2** | 4-way | pendant station | 1 | 1 | 2 | – | **2 446.50** |
| **F70AY120002-2** | 4-way | pendant station | 1 | 1 | – | – | **2 856.00** |
| **F70AY000400-1** | 4-way | pendant station | – | – | 4 | – | **2 247.00** |
| **F70AY000202-5** | 4-way | pendant station | – | – | 2 | 2 | **2 656.50** |
| **F70AY000004-1** | 4-way | pendant station | – | – | – | 4 | **3 034.50** |
| **F70EY120400-1** | 6-way | pendant station | 1 | 1 | 4 | – | **2 929.50** |
| **F70EY120004-1** | 6-way | pendant station | 1 | 1 | – | 4 | **3 748.50** |
| **F70EY120202-2** | 6-way | pendant station | 1 | 1 | 2 | 2 | **3 339.00** |
| **F70BY120600-2** | 8-way | pendant station | 1 | 1 | 6 | – | **3 444.00** |
| **F70BY120006-2** | 8-way | pendant station | 1 | 1 | – | 6 | **4 672.50** |
| **F70CY121000-2** | 12-way | pendant station | 1 | 1 | 10 | – | **4 798.50** |
| **F70DY121200-2** | 14-way | pendant station | 1 | 1 | 12 | – | **5 376.00** |

**Extra charges** *on request, standard elements can be replaced by others (see below)*

| | | |
|---|---|---|
| **1/2 SPD** | double depression 2-speed button and contact instead of 1 speed | **POR** |
| **1/2 MSRM** | double depression 2-speed button and contact instead of mushroom + reset | **POR** |
| **1/1 MSRM** | single depression 1-speed button and contact instead of mushroom + reset | **POR** |

**Accessories for Mike pendants stations** *(above)* (W) 84.5 x (D) 59.5 x (H) mm

| | | | | | |
|---|---|---|---|---|---|
| **F70AY00-1** | 4-way | black/yellow | empty pendant housing only | 427 | **1 027.95** |
| **F70EY00-1** | 6-way | black/yellow | empty pendant housing only | 487 | **1 638.00** |
| **F70BY00-1** | 8-way | black/yellow | empty pendant housing only | 547 | **1 081.50** |
| **F70CY00-1** | 12 way | black/yellow | empty pendant housing only | 667 | **1 680.00** |
| **F70DY00-1** | 14-way | black/yellow | empty pendant housing only | 727 | **2 037.00** |

*Also available in all black colour on request*

## Victor series - Wall-mounted control stations *(empty housings)*

**Victor** has been designed to facilitate wiring and maintenance. Contact blocks are installed in the base together with the cable inlet and are separated from the actuators installed on the cover, reducing time, cost of installation and maintenance down time.

- Protection degree: IP66/IP67/IP69K
- Operational ambient temp: -40°C...+80°C
- Insulation category: Class II
- Cable entry: Cable clamp M20 x 1.5

| type | holes | colour *(top cover)* | description *(W) 72.7 x (D) 61.9 x (H) mm* | | price |
|---|---|---|---|---|---|
| **F71EY00-1** | 1-hole | yellow | empty surface mnt control station | 73 | **900.90** |
| **F71EG00-1** | 1-hole | grey | empty surface mnt control station | 73 | **487.20** |
| **F71FG00-1** | 2-hole | grey | empty surface mnt control station | 122 | **663.60** |
| **F71GG00-1** | 3-hole | grey | empty surface mnt control station | 152 | **715.05** |
| **F71HG00-1** | 4-hole | grey | empty surface mnt control station | 182 | **699.30** |
| **F71IG00-1** | 6-hole | grey | empty surface mnt control station | 242 | **1 060.50** |
| **F71JG00-1** | 8-hole | grey | empty surface mnt control station | 302 | **1 102.50** |

*Actuators - pushbuttons, selector switches on (page **D-20**) contact blocks (below)*

**Contact blocks for pendant and control stations** *(screw termination)*

- Rated operational current 3A (AC15) / voltage 250V • Thermal current: 10A
- NC contact blocks are of positive operating type

| | | | | |
|---|---|---|---|---|
| **PRSL1800PI** | 1 NO | contact block | for above control stations | **165.90** |
| **PRSL1801PI** | 1 NC | contact block | for above control stations | **165.90** |
| **PRSL1820PI** | LED | 24/48 VAC/DC | LED indicating lamp element | **1 323.00** |
| **PRSL1821PI** | LED | 110/230 VAC | LED indicating lamp element | **1 323.00** |



Above ZAR prices do not include VAT. E&OE


PRSL1811PI


PRSL1890PI


PRSL1858BIC


PRSL1831PI


PRTA...


PF3903...

| type | colour return | positions remove | description | spring return | key remove | price |
|---|---|---|---|---|---|---|
| **Actuators for Mike and Victor pendant stations** | | | | | | |
| **PRSL1811PI** | black | – | pushbutton actuator *(no disc)* | 1-speed | – | **194.25** |
| **PRSL1810PI** | black | – | pushbutton actuator *(no disc)* | 2-speed | – | **248.85** |
| **PRSL1880PI** | red | – | latch mushroom actuator | twist rel | – | **509.25** |
| **PRSL1890PI** | red | – | latch mushroom actuator | key rel | – | **996.45** |
| **PRSL1885ROC** | red | – | impulse mushroom actuator | – | – | **544.95** |
| **PRSL1840PI** | red | – | pilot light head only | – | – | **365.40** |
| **PRSL1841PI** | green | – | pilot light head only | – | – | **365.40** |
| **PRSL1842PI** | yellow | – | pilot light head only | – | – | **365.40** |
| **PRSL1846PI** | blue | – | pilot light head only | – | – | **365.40** |
| **PRSL1856BIC** | blk/wht | 2 (0-1) | selector switch actuator | – | – | **802.20** |
| **PRSL1862BIC** | blk/wht | 2 (1-2) | selector switch actuator | – | – | **802.20** |
| **PRSL1858BIC** | blk/wht | 3 (1-0-2) | selector switch actuator | – | – | **802.20** |
| **PRSL1868PI** | – | 2 (0-1) | key switch actuator | – | 0 pos | **885.15** |
| **PRSL1870PI** | – | 3 (1-0-2) | key switch actuator | – | 0 pos | **885.15** |

| type | | description | price |
|---|---|---|---|
| **Accessories for control stations** | | | |
| **PRSL1850PI** | interlock | mechanical interlock between two pushbuttons for pendant stations | **266.70** |
| **PRSL8512PI** | spacer | pushbutton to contact block spacer *(required for single pushbuttons)* | **77.70** |
| **PRSL8750PI** | support | contact block support *(3 contacts)* for additional pushbutton | **205.80** |
| **PRSL1830PI** | cover | shallow protection cover for bottom mounted actuators | **360.15** |
| **PRSL1831PI** | cover | deep protection cover for bottom mounted actuators | **376.95** |
| **PRTR1035PE** | clip | stainless steel pendant case securing spring clip | **235.20** |
| **PRSL0145PE** | sleeve | spare rubber cable sleeve for Mike pendants Ø14 - 26 mm | **405.30** |
| **PRGA0012PE** | hook | pendant hanging hook *(top or bottom mounting)* | **59.85** |
| **PRET0215PE** | label | label sheet with selection of pendant symbols | **438.90** |
| **PRSL1845PI** | black | blanking plug *(blind pushbutton)* | **189.00** |

| type | background colour | symbol | description | price |
|---|---|---|---|---|
| **Colour discs with symbols for control station pushbuttons** | | | | |
| **PRTA001MPI** | green | start | symbol disc insert for control stations | **82.95** |
| **PRTA002MPI** | red | stop | symbol disc insert for control stations | **82.95** |
| **PRTA003MPI** | yellow | alarm | symbol disc insert for control stations | **82.95** |
| **PRTA004MPI** | green | start alarm | symbol disc insert for control stations | **82.95** |
| **PRTA005MPI** | white | arrow | symbol disc insert for control stations | **82.95** |
| **PRTA006MPI** | black | arrow | symbol disc insert for control stations | **82.95** |
| **PRTA007MPI** | white | arrow-fast | symbol disc insert for control stations | **82.95** |
| **PRTA008MPI** | black | arrow-fast | symbol disc insert for control stations | **82.95** |
| **PRTA011MPI** | white | arrow-2 spd | symbol disc insert for control stations | **82.95** |
| **PRTA012MPI** | black | arrow-2 spd | symbol disc insert for control stations | **82.95** |
| **PRTA018MPI** | black | spin left | symbol disc insert for control stations | **82.95** |
| **PRTA019MPI** | white | spin right | symbol disc insert for control stations | **82.95** |
| **PRTA022MPI** | black | spin left-fast | symbol disc insert for control stations | **82.95** |
| **PRTA023MPI** | white | spin right-fast | symbol disc insert for control stations | **82.95** |
| **PRTA026MPI** | black | spin left-2 spd | symbol disc insert for control stations | **82.95** |
| **PRTA027MPI** | white | spin right-2 spd | symbol disc insert for control stations | **82.95** |
| **PRTA095MPI*** | red | plain colour | symbol disc insert for control stations | **82.95** |

* *Replace the **5** with: **6**-green / **7**-yellow / **9**-black*

**Charlie pendant control stations** *double row pistol grip pendant* **IP65**

The Charlie Series introduces a compact-sized pendant station for auxiliary control, boasting a modern, user-friendly design engineered to minimize installation time, costs, and maintenance downtime.

| type | | description | m/room 1NC | reset/ alarm 2NO | 1-speed 1NO+1NO + common | 2-speed 1NO+1NO 1NO+com | price |
|---|---|---|---|---|---|---|---|
| **PF39020001** | 2-way | pendant station | – | – | 2 | – | **892.50** |
| **PF39020002** | 2-way | pendant station | – | – | – | 2 | **959.70** |
| **PF39030001** | 3-way | pendant station | 1 | – | 2 | – | **991.20** |
| **PF39030002** | 3-way | pendant station | 1 | – | – | 2 | **1 060.50** |

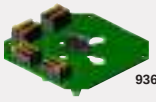
| type | | | description | price |
|---|---|---|---|---|
| **Spares and accessories for Charlie pendants** | | | | |
| **PRSL1000PI** | contact | 1 x NO | 1 NO single contact element | **243.60** |
| **PRSL1001PI** | contact | 1 x NC | 1 NC single contact element | **243.60** |
| **PRSL1002PI** | contact | 1-speed | 1-speed double interlocked contact element | **316.05** |
| **PRSL1003PI** | contact | 2-speed | 2-speed double interlocked contact element | **549.15** |
| **PRSL1009PI** | stop | | E\stop mushroom *(latching - twist release)* | **694.05** |


F661...


F662AL...


PRVV9035PE


PRTA0152PE


93621


PRSL0191PI

The **Hercules** joystick has a new design for applications in harsh environments. Attention to design, ergonomics, operation accuracy ensure reliability and extended mechanical life. Available with up to 5 speeds in each direction with cross or 360° movement.

- IP protection degree: IP65 *(enclosure dependant)*
- Ambient temperature: Operational -25°C...+70°C
- Mechanical life: 5 x $10^6$ operations
- Connections: Screw type terminals
- Utilisation category: AC 15
- Conformity to standards: IEC/EN 60204-1, 60947-1, 60947-5-1, 61000-6-2/3

| type | no. steps ↕ | no. steps ↔ | movement 360° | movement cross | movement mech. interlock | description | price |
|---|---|---|---|---|---|---|---|
| **Hercules - Version with micro switch-board** *(rated thermal current 8A)* | | | | | | | |
| • Standard version with switch board and mounted high-reliability micro switches<br>• Knob-type lever with **dead man safety** mechanically interlocked and 1CO contact<br>• Inductive loads: 1A 125 VAC, 0.5A 250 VAC, 1A 30 VDC<br>• Resistive loads: 3A 125 VAC, 2A 250 VAC, 3A 30 VDC | | | | | | | |
| **F661AC0110** | 1 | 0 | | × | × | industrial joystick controller | **10 479.00** |
| **F661AL0111** | 1 | 1 | × | | × | industrial joystick controller | **10 479.00** |
| **F661AC0220** | 2 | 0 | | × | × | industrial joystick controller | **10 479.00** |
| **F661AL0222** | 2 | 2 | × | | × | industrial joystick controller | **10 479.00** |
| **F661AC0330** | 3 | 0 | | × | × | industrial joystick controller | **10 479.00** |
| **F661AL0331** | 3 | 1 | × | | × | industrial joystick controller | **10 479.00** |
| **F661AL0332** | 3 | 2 | × | | × | industrial joystick controller | **10 479.00** |
| **F661AL0333** | 3 | 3 | × | | × | industrial joystick controller | **11 445.00** |
| **F661AC0440** | 4 | 0 | | × | × | industrial joystick controller | **12 705.00** |
| **F661AL0441** | 4 | 1 | × | | × | industrial joystick controller | **12 705.00** |
| **F661AL0442** | 4 | 2 | × | | × | industrial joystick controller | **12 705.00** |
| **F661AL0443** | 4 | 3 | × | | × | industrial joystick controller | **12 705.00** |
| **F661AL0444** | 4 | 4 | × | | × | industrial joystick controller | **12 705.00** |
| **F661AC0550** | 5 | 0 | | × | × | industrial joystick controller | **12 705.00** |
| **F661AC0551** | 5 | 1 | × | | × | industrial joystick controller | **12 705.00** |
| **F661AC0552** | 5 | 2 | × | | × | industrial joystick controller | **12 705.00** |
| **F661AL0553** | 5 | 3 | × | | × | industrial joystick controller | **12 705.00** |
| **F661AL0555** | 5 | 5 | × | | × | industrial joystick controller | **12 705.00** |
| **Hercules-CK - Version with independent switches** *(rated thermal current 10A)* | | | | | | | |
| • Knob-type lever mechanically interlock and 2 x NC contacts<br>• Rated current: 3A 250 VAC | | | | | | | |
| **F662AC0220** | 2 | 0 | | × | × | industrial joystick controller | **10 815.00** |
| **F662AL0333** | 3 | 3 | × | | × | industrial joystick controller | **14 595.00** |
| **F662AL0444** | 4 | 4 | × | | × | industrial joystick controller | **12 390.00** |
| **F662AL0551** | 5 | 1 | | × | × | industrial joystick controller | **11 340.00** |
| **F662AL0555** | 5 | 5 | × | | × | industrial joystick controller | **12 810.00** |

**Accessories for Hercules joysticks** *(above)*

| | | | | |
|---|---|---|---|---|
| **PA66301** | mount kit | | for 1 potentiometer onto Hercules joystick controller | **634.20** |
| **PA66302** | mount kit | | for 2 potentiometer onto Hercules joystick controller | **1 102.50** |
| **PA66303** | mount kit | | for 1 potentiometer onto Hercules-CK joystick controller | **1 045.80** |
| **PA66304** | mount kit | | for 2 potentiometer onto Hercules-CK joystick controller | **1 900.50** |
| **PRVV9035PE** | 2.2 kΩ | | Megatron potentiometer for joystick controller | **6 772.50** |
| **PRVV9020PE** | 4.7 kΩ | | Megatron potentiometer for joystick controller | **6 373.50** |
| **PRVV9025PE** | 10 kΩ | | Megatron potentiometer for joystick controller | **6 373.50** |
| **PRTA0150PE** | label | blank | label/legend plate for joystick controller | **609.00** |
| **PRTA0151PE** | label | "lifting-traverse" | label/legend plate for joystick controller | **609.00** |
| **PRTA0152PE** | label | "trolley-rotation" | label/legend plate for joystick controller | **609.00** |

**Spares for above Hercules joystick switches**

| | | | | |
|---|---|---|---|---|
| **93621** | switch board | 3-speed *(8 switches)* | for Hercules joystick controller | **5 323.50** |
| **93625** | switch board | 5-*speed (12 switches)* | for Hercules joystick controller | **7 339.50** |
| **PRSL4540PI** | switch | 2 x NC | for Hercules-CK joystick controller | **638.40** |
| **PRSL4541PI** | 2 x switches | 2 x NC | for Hercules-CK joystick controller | **1 270.50** |
| **PRSL0191PI** | switch | 2 x NC | interlock for Hercules-CK joystick controller | **278.25** |
| **PRGU6050PE** | bellows | | spare rubber bellows for Hercules joystick controller | **1 281.00** |
| **PRSL9890PI** | half guide | | half cross guide for lever of joysticks *(2 x required)* | **103.95** |

**Stepless proportional joystick** *with buit-in analog actuator* *(resolution: 10 bit)*

- Supply voltage: 12 - 48 VAC/DC
- Proportional outputs: 2 x current 4 - 20mA (or) 2 x voltage 0 - 5 VDC
- Directional switches: 4 x directional switches

| | | | |
|---|---|---|---|
| **F661EC25555002** | stepless | proportional output joystick controller | **24 150.00** |



Above ZAR prices do not include VAT. E&OE


PF34...

**Juliet** - Small-sized, compact joystick for control of industrial machinery. Controllers with different configurations are made up by using standard 3 or 5 step 4 direction units with lever guides which define final movement steps. Available with up to 5 speeds in each direction with cross or 360° movement.

- Ambient temperature: Operational -25°C...+70°C
- Mechanical life: 5x $10^6$ operations
- Utilisation category: AC 15
- Rated operational current: 2 A • Thermal current: 8A
- Rated operational voltage: 48 VAC
- Conformity to standards: EN 60204-1, 60947-1, 60947-5-1

| type | no. steps ↕ | no. steps ↔ | movement 360° | movement cross | movement lever guide | description | price |
|---|---|---|---|---|---|---|---|
| **Juliet series - Joystick control switches** IP65 *(enclosure dependant)* | | | | | | | |
| **PF34021004** | 1 | 0 | | x | 9872PI | Juliet joystick controller | **3 811.50** |
| **PF34021101** | 1 | 1 | x | | 9871PI | Juliet joystick controller | **3 811.50** |
| **PF34022004** | 2 | 0 | | x | 9880PI | Juliet joystick controller | **4 431.00** |
| **PF34022201** | 2 | 2 | x | | 9876PI | Juliet joystick controller | **4 546.50** |
| **PF34023004** | 3 | 0 | | x | 9824PI | Juliet joystick controller | **3 811.50** |
| **PF34023301** | 3 | 3 | x | | 9826PI | Juliet joystick controller | **5 281.50** |
| **PF34024004** | 4 | 0 | | x | 9835PI | Juliet joystick controller | **5 418.00** |
| **PF34023501** | 3 | 5 | x | | 9842PI | Juliet joystick controller | **6 888.00** |
| **PF34025501** | 5 | 5 | x | | 9830PI | Juliet joystick controller | **8 200.50** |


PRSL9873PI

**Replacement lever guides for other switching configurations**

| | | | | | |
|---|---|---|---|---|---|
| **PRSL9873PI** | 2 | 1 | lever guide | for Juliet joystick controllers | **312.90** |
| **PRSL9838PI** | 3 | 1 | lever guide | for Juliet joystick controllers | **87.15** |
| **PRSL9841PI** | 3 | 2 | lever guide | for Juliet joystick controllers | **87.15** |
| **PRSL9844PI** | 4 | 1 | lever guide | for Juliet joystick controllers | **87.15** |
| **PRSL9845PI** | 4 | 3 | lever guide | for Juliet joystick controllers | **312.90** |
| **PRSL9849PI** | 4 | 4 | lever guide | for Juliet joystick controllers | **312.90** |
| **PRSL9839PI** | 5 | 1 | lever guide | for Juliet joystick controllers | **87.15** |
| **PRSL9828PI** | 5 | 2 | lever guide | for Juliet joystick controllers | **87.15** |
| **PRSL9825PI** | 5 | 4 | lever guide | for Juliet joystick controllers | **87.15** |


PRTR0160PE

| | | | |
|---|---|---|---|
| **PRTR0160PE** | cross | cross lever guide | for Juliet joystick controllers **92.40** |

**Spares for Juliet joystick controllers**

| | | | | |
|---|---|---|---|---|
| **93558** | switch board | 3-speed *(8 switches)* | for Juliet joystick controller | **4 756.50** |
| **93547** | switch board | 5-speed *(12 switches)* | for Juliet joystick controller | **6 205.50** |
| **PRSL0173PI** | bellows | spare rubber bellows | for Juliet joystick controllers | **657.30** |


PF21270100

**Slip ring collectors** *Suitable for AC currents only*

Slip ring collectors are sets of rings coupled with brushes designed to allow current to pass from a fixed to a rotating part. Used to supply crane motors and cable winders.

- Rated operational voltage: 400 V • Insulation voltage: 660 V
- Conformity to standards: EN 60204-1, EN60309-1, EN60529

| type | current | No. of rings 30A | No. of rings 10A | description | price |
|---|---|---|---|---|---|
| **10A series - Slip ring collectors** *6.6 mm faston connections* | | | | | |
| **PF21270100** | 10A | – | 4 | slip ring collector with driving slot | **2 362.50** |
| **PF21270101** | 10A | – | 4 | slip ring collector without driving slot | **2 341.50** |


PF21270101

**30A series - Slip ring collectors** *(or combined with 10A auxiliary contacts)*

The 30A slip ring collectors can be supplied with additional 10A auxiliary rings.
Shock-resistant thermoplastic protection preventing accidental contact of live parts.

| | | | | | |
|---|---|---|---|---|---|
| **PF2304B001** | 30A | 4 | – | 30A line slip ring collector | **9 670.50** |
| **PF2306B002** | 30A | 6 | – | 30A line slip ring collector | **10 920.00** |
| **PF2309B002** | 30A | 9 | – | 30A line slip ring collector | **13 965.00** |

**Combined 30A and 10A auxiliary rings**

| | | | | | |
|---|---|---|---|---|---|
| **PF2306B003** | 30A | 4 | 2 | combined 30/10A slip ring collector | **10 153.50** |
| **PF2308B001** | 30A | 4 | 4 | combined 30/10A slip ring collector | **11 655.00** |
| **PF2310B001** | 30A | 4 | 6 | combined 30/10A slip ring collector | **13 020.00** |

Additional 30A rings *(up to a max. of 20 rings)* price per ring *(on request only)* **POR**
Additional 10A rings *(up to a max. of 40 rings)* price per ring *(on request only)* **POR**

*Larger sizes 50A - 300A - 500A available on request*


PF23...


PFA9...


PFB9...




PFC9...


PA0...

Rotary limit switches are used to control and measure movement of industrial machinery by reading the rotation angle and/or counting the number of revolutions of a shaft. They operate as an auxiliary controller for electric motors through a power interface. The switch shaft can be connected to a motor, after a preset number of revolutions the cams operate a switch.

Each cam can be set with high accuracy due to precision cam adjusting screws.

- Utilisation category: AC 15
- Rated operational voltage: 250 VAC
- Operational temperature -40°C...+80°C
- Rated current: 3A operational / 10A thermal
- Conformity to standards: EN 60204-1/35, 60947-1/5-1, 60529, CSA-C22.2 No 14-13, UL 508

| type | ratio | no. micro's | description | price |
|---|---|---|---|---|
| **Base series - Wormgear limit switches** | | **1 x CO** | (H) 84.5 x (W) 70 x (D) 106 mm | |
| • Protection degree: IP42 | | | | |
| • Mechanical life: 1 x $10^6$ operations | | | | |
| • Connections: Faston 6.3 mm | | | | |
| **PFA9142A0015001** | 15:1 | 2 | Base miniature wormgear limit switch | **1 323.00** |
| **PFA9142A0025001** | 25:1 | 2 | Base miniature wormgear limit switch | **1 323.00** |
| **PFA9142A0050001** | 50:1 | 2 | Base miniature wormgear limit switch | **1 270.50** |
| **PFA9142A0075001** | 75:1 | 2 | Base miniature wormgear limit switch | **1 344.00** |
| **PFA9142A0103001** | 100:1 | 2 | Base miniature wormgear limit switch | **1 323.00** |
| **PFA9142A0158001** | 150:1 | 2 | Base miniature wormgear limit switch | **1 354.50** |
| **Fox / Oscar series - Wormgear limit switches** | | **1NO + 1NC** | | |
| • Protection degree: IP66, IP67, IP69K | | | | |
| • Mechanical life: 10 x $10^6$ operations | | | | |
| • Connections: Screw-type terminals with self-raising clamps | | | | |
| **Fox series - Wormgear limit switches** | | | (H) 117 x (W) 75 x (D) 141 mm | |
| **PFB9067L0016010** | 15:1 | 2 | Fox industrial wormgear limit switch | **3 087.00** |
| **PFB9067L0027007** | 25:1 | 2 | Fox industrial wormgear limit switch | **2 908.50** |
| **PFB9067L0062033** | 50:1 | 2 | Fox industrial wormgear limit switch | **2 793.00** |
| **PFB9067L0103037** | 100:1 | 2 | Fox industrial wormgear limit switch | **2 887.50** |
| **PFB9067L0162007** | 150:1 | 2 | Fox industrial wormgear limit switch | **2 887.50** |
| **PFB9067L0222011** | 200:1 | 2 | Fox industrial wormgear limit switch | **2 887.50** |
| **PFB9067L0254019** | 250:1 | 2 | Fox industrial wormgear limit switch | **3 780.00** |
| *Cam set and switches can be replaced with a potentiometer or encoder (below) on Fox switches* | | | | |
| **Oscar series - Wormgear limit switches** | | | (H) 134.5 x (W) 119 x (D) 146.5 mm | |
| Can be equipped with up to two cam sets *(up to 10 switches)* with potentiometers *(alone or on top of cam sets with up to 3 switches)* and Yankee absolute encoders *(on top of cam sets with up to 4 switches)* | | | | |
| **PFC9067L0031032** | 25:1 | 2 | Oscar industrial wormgear limit switch | **4 210.50** |
| **PFC9067L0062004** | 50:1 | 2 | Oscar industrial wormgear limit switch | **4 137.00** |
| **PFC9067L0107014** | 100:1 | 2 | Oscar industrial wormgear limit switch | **4 357.50** |
| **PFC9067L0156004** | 150:1 | 2 | Oscar industrial wormgear limit switch | **4 662.00** |
| **PFC9067L0214004** | 200:1 | 2 | Oscar industrial wormgear limit switch | **4 578.00** |
| **PFC9067L0254004** | 250:1 | 2 | Oscar industrial wormgear limit switch | **4 641.00** |
| **PFC9067L0313023** | 300:1 | 2 | Oscar industrial wormgear limit switch | **4 588.50** |

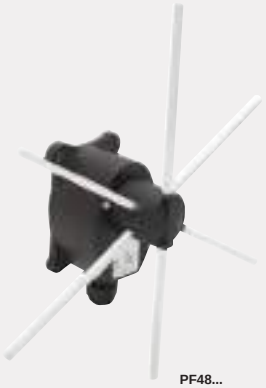
| **Accessories for above Fox and Oscar switches** | | | | | | |
|---|---|---|---|---|---|---|
| **Standard cam set and switches** | | *for Fox and Oscar switches* | | | | |
| **FCL20001** | cam set | 2 | | | std. cam set with switches for Fox/Oscar | **1 522.50** |
| **FCL40003** | cam set | 4 | | | std. cam set with switches for Fox/Oscar | **2 436.00** |
| **Potentiometer** | | **10 kΩ -** *others available on request* | | | | |
| **PA020001** | 10 | kΩ | | | potentiometer with support for Fox/Oscar | **8 001.00** |
| **Incremental encoders** | | **Push - Pull output** | | | | |
| **PA030001** | 36 | pulses/rev | 4.5 - 30 VDC | | encoder with support | **9 376.50** |
| **PA030002** | 150 | pulses/rev | 4.5 - 30 VDC | | encoder with support | **12 390.00** |
| **Yankee absolute encoders** | | **12 bit** | *4096 points per revolution* | | | |
| **PA01AA01** | current | 4 - 20mA | 12 - 48 VAC/DC | | absolute encoder | **4 059.50** |
| **PA01AB01** | voltage | 0 - 10V | 12 - 48 VAC/DC | | absolute encoder | **6 583.50** |
| **PA01AC01** | PWM | 0 - 100% | 12 - 48 VAC/DC | | absolute encoder | **5 943.00** |
| **Mounting accessories for Base, Fox, Oscar limit switches** | | | | | | |
| **PRSL0356PI** | flange | | | | mounting flange + screws and pins for Base/Fox/Oscar | **609.00** |
| **PRSL0981PI** | coupling | | | | coupling with pin for Base/Fox/Oscar | **1 218.00** |
| **PRSL0920PI** | coupling | | | | female coupling with pin for Base/Fox/Oscar | **182.70** |
| **PRSL0919PI** | coupling | | | | male coupling with pin for Base/Fox/Oscar | **182.70** |



Above ZAR prices do not include VAT. E&OE


F201120001


F202210001


PF48...


PF26755100

## Position limit switches

Cross-position limit switches are designed to control the movement of overhead travelling cranes, hoists and complex machine tools. Choice of materials and technical solutions adopted and heads with different types of rods and movements enable use in harsh operating conditions.

**General features:**

- Utilisation category: AC 15
- Rated operational voltage: 250 VAC
- Insulation voltage: 500 VAC
- Conformity to standards: EN 60421-1, EN 60947-1, EN60947-5-1, EN60529

| type | actuators | positions | micro sw | description | price |
|---|---|---|---|---|---|
| **Arke series - Position limit switches** | | **IP65, IP66, IP67** | | **Class II** | |

- Particularly suitable for use in harsh operating conditions with extreme temperature resistance
- Cross rods with 4 maintained positions every 90° or single rod with 65° spring return movement
- Enclosure and head in thermoplastic material *(Nylon reinforced with fibreglass)*
- Positive opening NC contacts for safety functions

- Thermal current: 10A
- Rated operational current: 6A
- Operating temperature: -40°C...+80°C
- Mechanical life: 5 x $10^6$ operations
- Cable entry: Bottom or side (L or R) *(supplied with **M20** cable gland)*
- Supplied with: 2 x *(6 x 8 mm)* aluminium rods (*200 mm*)

| | | | | | |
|---|---|---|---|---|---|
| **F201110001** | X-rod | 4 *(fixed)* 90° | 2NC *(1 staggered)* | stop at 180° | **4 620.00** |
| **F201120001** | X-rod | 4 *(fixed)* 90° | 2NC *(1 staggered)* | free rotation | **4 620.00** |
| **F201110002** | X-rod | 3 *(fixed)* 90° | 1NO + 1NC | position limit switch | **4 347.00** |
| **F202210001** | rod-roller | spring ret 65° | 1NO + 1NC | position limit switch | **4 347.00** |

| | | | | | |
|---|---|---|---|---|---|
| **Tango series - Position limit switches** | | **IP65** | | **Class II** | |

Cross-position limit switches are designed to control the movement of overhead travelling cranes, hoists and complex machine tools.

- 3 rods with maintained positions every 60°
- Equipped with 1NC double break slow action switches

- Thermal current: 10A
- Rated operational current: 3A
- Operating temperature: -25°C...+70°C
- Mechanical life: 1 x $10^6$ operations
- Cable entry: Bottom *(supplied with **M20** cable gland)*
- Supplied with: Three 6 x 6 mm aluminium rods *(300 mm)*

| | | | | | |
|---|---|---|---|---|---|
| **PF48020001** | X-rod | 4 *(fixed)* 60° | 2NC | position limit switch | **2 226.00** |
| **PF48030001** | X-rod | 4 *(fixed)* 60° | 3NC | position limit switch | **2 383.50** |
| **PF48040001** | X-rod | 4 *(fixed)* 60° | 4NC | position limit switch | **2 541.00** |

| | | | | | |
|---|---|---|---|---|---|
| **X-FSC series - Position limit switches** | | **IP65** | | **Class II** | |

- Features cross rods with 3 or 4 maintained positions
- T rods with 3 maintained position every 90°
- Equipped with 2 x 1NO + 1NC snap action switches
- Enclosure and head in thermoplastic material *(Nylon reinforced with fibreglass)*

- Thermal current: 10A
- Rated operational current: 3A
- Operating temperature: -25°C...+70°C
- Mechanical life: 1 x $10^6$ operations

| | | | | | |
|---|---|---|---|---|---|
| **PF33710100** | T-rod | 3 *(fixed)* 90° | 1NO+1NC | position limit switch | **2 730.00** |

| | | | | | |
|---|---|---|---|---|---|
| **7551 series - Position limit switches** | | **IP65** | | **Class I** | |

Designed for the control of complex operating equipment. The choice of materials, technical solutions and ample dimensions make these switches ideal for use in strongly aggressive environments when exposed to severe operating conditions.

- Rods with 4 maintained positions every 90°
- Die-cast aluminium alloy to guarantee maximum resistance to violent impact, chemical aggression and rust

- Thermal current: 10A
- Rated operational current: 3A
- Operating temperature: -40°C...+70°C
- Mechanical life: 1 x $10^6$ operations

| | | | | | |
|---|---|---|---|---|---|
| **PF26755100** | X-rod | 4 *(fixed)* 90° | 2 x 1NO+1NC | position limit switch | **4 840.50** |



38603



38654



38792



27762



30107

**Multifunctional technology, permitting different selectable signalling levels**

Luminous devices engineered for industrial applications on machinery.

| type | lens colour | dB @ 1 meter | supply voltage | description | dimensions (mm) Ø | dimensions (mm) ext. | price |
|---|---|---|---|---|---|---|---|
| **MICROLAMP LED - LED signalling beacon -** Surface mount | | | | | | **IP54** | |
| • Double insulated | | | | | | | |
| • M16 cable gland entry *(gland supplied)* | | | | | | | |
| • Multi-voltage: | | | 12/24 VAC/DC (or) 90 - 240 VAC | | | | |
| • 2 light effects: | | | Steady - flashing (selectable via terminals) | | | | |
| • LED flash rate: | | | 140fpm ± 10% | | | | |
| • Construction: | | | Polycarbonate base and lens | | | | |
| • Luminous intensity *(Candela)*: | | | 2 cd max | | | | |
| **38602** | amber | – | 12 - 24 VAC/DC | surface mnt signalling device | 86 | 90 | **1 711.50** |
| **38603** | red | – | 12 - 24 VAC/DC | surface mnt signalling device | 86 | 90 | **1 711.50** |
| **38604** | green | – | 12 - 24 VAC/DC | surface mnt signalling device | 86 | 90 | **1 711.50** |
| **38622** | amber | – | 90 - 240 VAC | surface mnt signalling device | 86 | 90 | **1 942.50** |
| **38623** | red | – | 90 - 240 VAC | surface mnt signalling device | 86 | 90 | **1 942.50** |
| **38624** | green | – | 90 - 240 VAC | surface mnt signalling device | 86 | 90 | **1 942.50** |
| **MICROLAMP LED and ACOUSTIC -** signalling beacon | | | | | | **IP30** | |
| • Tone: 2700Hz | | | | | | | |
| • Audible signal option with continuous or intermittent sound. | | | | | | | |
| • 2 alarm levels: | | | Continuous sound with steady light / intermittent sound with flashing light | | | | |
| • Luminous intensity *(Candela)*: | | | 2 cd max | | | | |
| **38632** | amber | 72 | 12 - 24 VAC/DC | surface mnt signalling device | 86 | 111 | **2 247.00** |
| **38633** | red | 72 | 12 - 24 VAC/DC | surface mnt signalling device | 86 | 111 | **2 247.00** |
| **38634** | green | 72 | 12 - 24 VAC/DC | surface mnt signalling device | 86 | 111 | **2 247.00** |
| **38652** | amber | 72 | 90 - 240 VAC | surface mnt signalling device | 86 | 111 | **2 562.00** |
| **38653** | red | 72 | 90 - 240 VAC | surface mnt signalling device | 86 | 111 | **2 562.00** |
| **38654** | green | 72 | 90 - 240 VAC | surface mnt signalling device | 86 | 111 | **2 562.00** |
| *Other colours available on request* | | | | | | | |
| **OVOLUX LED - Multifunctional LED** signalling beacon | | | | | | **IP66** | |
| • Bright LED with maximised performance | | | | | | | |
| • "R" panel-mount (through 1/2" NPT hole) or "M" surface mounting | | | | | | | |
| • Multi-voltage: | | | 12/24 VAC/DC (or) 90 - 240 VAC | | | | |
| • 4 light effects: | | | Steady - single - double - triple flash - *(selectable via dip-switches)* | | | | |
| • Luminous intensity *(Candela)*: | | | 35 cd max | | | | |
| **Panel-mount "R" version** | | | *mounts through 1/2" NPT (22 mm) hole with (provided) lock ring* | | | | |
| **38782** | amber | – | 12 - 24 VAC/DC | panel-mount signalling device | 76 | 69 | **2 289.00** |
| **38783** | red | – | 12 - 24 VAC/DC | panel-mount signalling device | 76 | 69 | **2 289.00** |
| **38784** | green | – | 12 - 24 VAC/DC | panel-mount signalling device | 76 | 69 | **2 289.00** |
| **38792** | amber | – | 90 - 240 VAC | panel-mount signalling device | 76 | 69 | **2 667.00** |
| **38793** | red | – | 90 - 240 VAC | panel-mount signalling device | 76 | 69 | **2 667.00** |
| **38794** | green | – | 90 - 240 VAC | panel-mount signalling device | 76 | 69 | **2 667.00** |
| **Surface mount "M" version** | | | *M16 cable gland entry* | *(IP65)* | | | |
| **38802** | amber | – | 12 - 24 VAC/DC | surface mount signalling device | 114 | 115 | **2 572.50** |
| **38803** | red | – | 12 - 24 VAC/DC | surface mount signalling device | 114 | 115 | **2 572.50** |
| **38812** | amber | – | 90 - 240 VAC | surface mount signalling device | 114 | 115 | **2 950.50** |
| **38813** | red | – | 90 - 240 VAC | surface mount signalling device | 114 | 115 | **2 950.50** |
| *Other colours available on request* | | | | | | | |
| **OVOLUX RGB - multicolour steady light - LED beacon** | | | | | | | |
| • Multi-coloured: | | | White, amber, red, yellow, green, magenta, blue (7 colours in one beacon) | | | | |
| • Luminous intensity *(Candela)*: | | | 10 cd max | | | | |
| **30107** | multi | – | 12 - 24 VAC/DC | panel-mount signalling device | 76 | 69 | **3 108.00** |
| **30108** | multi | – | 90 - 240 VAC | panel-mount signalling device | 76 | 69 | **3 496.50** |
| **Mounting accessories** *(for above panel-mount beacons)* | | | | | | | |
| **27697** | adaptor | | for mounting Ovolux beacons onto a foot or wall mount base | | | | **181.65** |
| **27762** | wall | | wall mounting bracket for Ovolux *(requires **27697** adaptor)* | | | | **363.30** |
| **27764** | base | | surface mount base with extended foot (100 mm) *(requires **27697** adaptor)* | | | | **454.65** |



Above ZAR prices do not include VAT. E&OE


66502


66513


66554


90063

**Multifunctional technology permitting different selectable signalling levels**

| type | lens colour | supply voltage | description | dimensions (mm) Ø | ext. | price |
|---|---|---|---|---|---|---|
| **MINIFLASH LED medium size multifunctional beacons** | | | | **IP54** | | |

Medium-size multifunctional LED beacon, developed with a multichannel technology. MINIFLASH LED is available in **MINIFLASH FLR** *(steady, flashing, rotating light)* or in **MINIFLASH SLR** *(flashing, strobe, random light)* version.

- Surface mounting with M16 cable gland entry *(cable gland supplied)*
- Dome-shaped Fresnel lens intensifies the luminous beam of these devices
- 3 x lighting effects controllable via independent electric contacts

**MINIFLASH LED FLR**

- LEDs allows a rotating effect perfectly simulating traditional rotating beacon without moving parts
- 32x bright LEDs
- Luminous intensity *(Candela):* 50 cd max
- Three luminous effects: Steady light, Flashing light, Rotating light

| | | | | | | |
|---|---|---|---|---|---|---|
| **66502** | amber | 12 - 24 VAC/DC | multifunctional LED beacon | 99 | 146 | **7 602.00** |
| **66503** | red | 12 - 24 VAC/DC | multifunctional LED beacon | 99 | 146 | **7 602.00** |
| **66504** | green | 12 - 24 VAC/DC | multifunctional LED beacon | 99 | 146 | **7 602.00** |
| **66512** | amber | 90 - 240 VAC | multifunctional LED beacon | 99 | 146 | **7 602.00** |
| **66513** | red | 90 - 240 VAC | multifunctional LED beacon | 99 | 146 | **7 602.00** |
| **66514** | green | 90 - 240 VAC | multifunctional LED beacon | 99 | 146 | **7 602.00** |

**MINIFLASH LED SLR**

- SuperBright LEDs unique uneven flashing pattern designed for attracting attention
- Luminous intensity *(Candela):* 230 cd max
- Three luminous effects: Flashing light 1F, Strobe effect 5F, Random lighting effect

| | | | | | | |
|---|---|---|---|---|---|---|
| **66542** | amber | 12 - 24 VAC/DC | multifunctional LED beacon | 99 | 146 | **7 602.00** |
| **66543** | red | 12 - 24 VAC/DC | multifunctional LED beacon | 99 | 146 | **7 602.00** |
| **66544** | green | 12 - 24 VAC/DC | multifunctional LED beacon | 99 | 146 | **7 602.00** |
| **66552** | amber | 90 - 240 VAC | multifunctional LED beacon | 99 | 146 | **7 602.00** |
| **66553** | red | 90 - 240 VAC | multifunctional LED beacon | 99 | 146 | **7 602.00** |
| **66554** | green | 90 - 240 VAC | multifunctional LED beacon | 99 | 146 | **7 602.00** |

*Other colours available on request*

**Mounting accessories**

| | | | |
|---|---|---|---|
| **72692** | grey | wall mounting bracket for above MINIFLASH beacons | **1 386.00** |

| **ROTALLARM S LED multifunctional beacon** | | | | **IP65** | | |
|---|---|---|---|---|---|---|

**ROTALLARM S LED** features a powerful multivoltage/multifunction SMD LED electronic circuit offering outstanding performances together with the highest life expectancy in todays market. The structure guarantees high impact and vibration resistance.

- PC/ABS base with M20 cable gland, self-extinguishing polycarbonate dome
- Polyurethane gasket on base
- 32 x 5050 bright LEDs for improved visibility
- Luminous intensity *(Candela):* 40 cd max
- Lighting effect: Steady, Rotating, Flashing

**ROTALLARM S LED rotating beacons** (H) 212 x Ø 142 mm

| | | | | | | |
|---|---|---|---|---|---|---|
| **90061** | blue | 12 - 24 VAC/DC | multifunctional LED beacon | 142 | 212 | **6 583.50** |
| **90062** | amber | 12 - 24 VAC/DC | multifunctional LED beacon | 142 | 212 | **6 583.50** |
| **90063** | red | 12 - 24 VAC/DC | multifunctional LED beacon | 142 | 212 | **6 583.50** |
| **90064** | green | 12 - 24 VAC/DC | multifunctional LED beacon | 142 | 212 | **6 583.50** |
| **90081** | blue | 90 - 240 VAC | multifunctional LED beacon | 142 | 212 | **9 051.00** |
| **90082** | amber | 90 - 240 VAC | multifunctional LED beacon | 142 | 212 | **9 051.00** |
| **90083** | red | 90 - 240 VAC | multifunctional LED beacon | 142 | 212 | **9 051.00** |
| **90084** | green | 90 - 240 VAC | multifunctional LED beacon | 142 | 212 | **9 051.00** |

*Other colours available on request*

**Mounting accessories**

| | | | |
|---|---|---|---|
| **72692** | grey | wall mounting bracket for above ROTALLARM beacons | **1 386.00** |



91363

## P50 series - Panel-mount LED signalling devices Ø50 mm

Multifunctional technology permits different selectable alarm levels via independent electric contacts. Illuminated dome *(Ø50 mm)* provides easy-to-see operator guidance and indication.

- Mounts through Ø22 mm pushbutton hole

| type | lens colour | dB @ 1 meter | supply voltage | description | dimensions (mm) Ø | dimensions (mm) ext. | price |
|---|---|---|---|---|---|---|---|
| **P50 series - Panel-mount LED signalling devices Ø50 mm** | | | | | | | **IP66** |
| • Mounts through Ø22 mm standard pushbutton hole secured with *(provided)* locking ring<br>• Polycarbonate dome with 360° light-diffusion design - 6 bright LEDs<br>• M12 4 PIN electrical connector *(plug and cable supplied separately)* | | | | | | | |
| **P50 S - Multifunctional LED signalling panel beacon** | | | | | | | **IP66** |
| • 7 different light effects - *(steady, slow / fast flashing, double / triple flash, strobe, random flash)*<br>• Luminous intensity *(Candela):* 10 cd max | | | | | | | |
| **91362** | amber | – | 12 - 24 VAC/DC | panel-mount signalling device | 50 | 26.5 | **3 370.50** |
| **91363** | red | – | 12 - 24 VAC/DC | panel-mount signalling device | 50 | 26.5 | **3 370.50** |
| **91364** | green | – | 12 - 24 VAC/DC | panel-mount signalling device | 50 | 26.5 | **3 370.50** |
| **P50 RGB - Multicolour LED panel beacon** | | | | | | | **IP66** |
| • Steady light with 7 different selectable colours - *(white, amber, red, yellow, green, magenta, blue)*<br>• Luminous intensity *(Candela):* 10 cd max | | | | | | | |
| **91430** | multi | – | 24 VDC | multicoloured LED beacon | 50 | 26.5 | **3 003.00** |
| **P50 A - Panel-mount piezoelectric acoustic sounder** | | | | | | | **IP65** |
| • Seven different types of audible alarms *(controllable via independent electric contacts) (continuous, intermittent, double intermittent, triple intermittent, telegraph, random)* | | | | | | | |
| **91367** | grey | 88/92 | 12 - 24 VAC/DC | panel-mount audible sounder | 50 | 27.5 | **3 234.00** |
| **P50 A LED - Combination sounder and signal beacon** | | | | | | | **IP65** |
| • Allows 7 different types of sound/light effects - *(controllable via independent electric contacts)* (Steady light, Continuous sound, Steady light + Continuous sound, 2/3 Flashes - sync sound/light, Intermittent - sync sound/light, Random)<br>• Luminous intensity *(Candela):* 10 cd max | | | | | | | |
| **91382** | amber | 88/92 | 12 - 24 VAC/DC | panel-mount sounder/beacon | 50 | 27.5 | **3 874.50** |
| **91383** | red | 88/92 | 12 - 24 VAC/DC | panel-mount sounder/beacon | 50 | 27.5 | **3 874.50** |
| *Other colours available on request* | | | | | | | |



91364



91430



91153

## P40 S - Multifunctional LED signalling panel beacon Ø41 mm IP65

- Mounts through Ø30 mm hole - *(internal depth max. 37 mm)*
- Light-diffusion through a light-concentrating lens for maximize frontal performance
- Screw terminal connection
- Ø41 mm domed lens 360°

| type | lens colour | dB @ 1 meter | supply voltage | description | dimensions (mm) Ø | dimensions (mm) ext. | price |
|---|---|---|---|---|---|---|---|
| **3 alarm levels:** steady - flashing - strobe *(selectable via electrical contacts)* | | | | | | | |
| • Luminous intensity *(Candela):* 20 cd max | | | | | | | |
| **91132** | amber | – | 12 - 24 VAC/DC | panel-mount signalling device | 41 | 46 | **2 520.00** |
| **91133** | red | – | 12 - 24 VAC/DC | panel-mount signalling device | 41 | 46 | **2 520.00** |
| **91134** | green | – | 12 - 24 VAC/DC | panel-mount signalling device | 41 | 46 | **2 520.00** |
| **91152** | amber | – | 48 - 240 VAC | panel-mount signalling device | 41 | 46 | **2 520.00** |
| **91153** | red | – | 48 - 240 VAC | panel-mount signalling device | 41 | 46 | **2 520.00** |
| **91154** | green | – | 48 - 240 VAC | panel-mount signalling device | 41 | 46 | **2 520.00** |
| **P40 A - Piezoelectric acoustic sounder - selectable continuous - intermittent sound** | | | | | | | |
| **91177** | grey | 85dB | 12 - 24 VAC/DC | panel-mount audible sounder | 41 | 34 | **1 512.00** |
| **91179** | grey | 85dB | 48 - 240 VAC | panel-mount audible sounder | 41 | 34 | **1 995.00** |
| **P40 A LED - Combination sounder and signal beacon** | | | | | | | **IP65** |
| **3 alarm levels:** flashing only / flashing + intermittent sound / steady light + continuous sound | | | | | | | |
| • Luminous intensity *(Candela):* 20 cd max | | | | | | | |
| **91182** | amber | 85dB | 12 - 24 VAC/DC | panel-mount sounder/beacon | 41 | 34 | **1 785.00** |
| **91183** | red | 85dB | 12 - 24 VAC/DC | panel-mount sounder/beacon | 41 | 34 | **1 785.00** |
| **91202** | amber | 85dB | 48 - 240 VAC | panel-mount sounder/beacon | 41 | 34 | **2 278.50** |
| **91203** | red | 85dB | 48 - 240 VAC | panel-mount sounder/beacon | 41 | 34 | **2 278.50** |
| *Other colours available on request* | | | | | | | |



91132





91177



91183



Above ZAR prices do not include VAT. E&OE


28241

## E-LITE - Economic LED beacons IP66

LED signalling device available in 5 colours with steady light. Other luminous effects via PLC are possible. E-LITE offers virtually zero maintenance thanks to the built-in LED technology that guarantees up to 100.000 hours of product life.

Clear lens with coloured LED light source (14 LEDs). The vertically lined refractor allows a perfect light distribution over 360° *(steady light)*. Other luminous effects via PLC.

- Suitable for indoor or outdoor use
- Opaline *(no colour dome)* illuminated in the colour of internal LEDs
- Self-extinguishing PC body with high impact resistance IK06
- M12 - 4pin plug connection *(cable and plug supplied separately)*
- Integrated mounting base *(3 mounting holes 120°)*


28242

| type | lens colour | dB @ 1 meter | supply voltage | description | dimensions (mm) Ø | ext. | price |
|---|---|---|---|---|---|---|---|
| **E-LITE series - Econo steady light LED beacon Ø70 mm** | | | | | **IP66** | | |
| • Available in 5 different steady light colours *(other luminous effects via a PLC are possible)* | | | | | | | |
| • Luminous intensity *(Candela):* 15 cd max | | | | | | | |
| **28241** | blue | | 24 VDC | econo LED steady signal light | 70 | 56 | **1 176.00** |
| **28242** | amber | | 24 VDC | econo LED steady signal light | 70 | 56 | **1 176.00** |
| **28243** | red | | 24 VDC | econo LED steady signal light | 70 | 56 | **1 176.00** |
| **28244** | green | | 24 VDC | econo LED steady signal light | 70 | 56 | **1 176.00** |
| **28246** | clear | | 24 VDC | econo LED steady signal light | 70 | 56 | **1 176.00** |


28246

### E-LITE RGB - Multicolour LED panel beacon

- 7 different selectable colours - *(white, amber, red, yellow, green, magenta, blue)* on one unit
- Available in steady light or with flashing *(single flash)* versions
- Luminous intensity *(Candela):* 2-11 cd *(colour dependant)*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **28323** | multi | steady | 24 VDC | multi coloured steady signal light | 70 | 56 | **2 457.00** |
| **28325** | multi | flashing | 24 VDC | multi coloured flashing signal light | 70 | 56 | **2 457.00** |

**Accessories -** *for above* **E-LITE and P50** *signalling devices*

| type | gender | pin | term. | plug angle | description | price |
|---|---|---|---|---|---|---|
| **120104-02-022** | female | 4 | screw | straight | M12 connector | **197.40** |
| **120104-02-024** | female | 4 | screw | 90º | M12 connector | **197.40** |
| **120104-06-053** | female | 4 | cable | straight | 2 meter cable + M12 connector | **231.00** |
| **120104-06-061** | female | 4 | cable | straight | 5 meter cable + M12 connector | **465.15** |
| **120104-06-017** | female | 4 | cable | 90º | 2 meter cable + M12 connector | **231.00** |
| **120104-06-010** | female | 4 | cable | 90º | 5 meter cable + M12 connector | **420.00** |

*For more connectors with cable see page* ***K-23-24***


36901

## EOS WM series - LED stacklights Ø70 mm IP66, IP69K

Modular pre-assembled LED stacklight in versions with 2 or 3 steady light modules. Offers virtually zero maintenance thanks to built-in LED technology guaranteeing up to 100.000 hours life.

- Integrated LED steady light modules *(other luminous effects via PLC)*
- Opaline clear lens with coloured light source permits perfect light distribution over 360°
- Versions with piezoelectric sounder (75dB 1m)
- Smooth design that aides in dirt build-up on the surface
- Ideal for environments with high-brightness
- Clear distinction between ON and OFF state
- Luminous intensity *(Candela):* 4 cd max

**Two module stacklight** *(green / red)*

| | | | | | | |
|---|---|---|---|---|---|---|
| **36901** | green / red | 12 - 24 VAC/DC | econo LED steady light stacklight | 70 | 208 | **3 528.00** |
| **36903** | green / red | 12 - 24 VAC/DC | econo LED stacklight with sounder | 70 | 248 | **4 525.50** |

**Three module stacklight** *(green / amber / red)*

| | | | | | | |
|---|---|---|---|---|---|---|
| **36900** | green/amber/red | 12 - 24 VAC/DC | econo LED steady light stacklight | 70 | 248 | **4 441.50** |
| **36904** | green/amber/red | 12 - 24 VAC/DC | econo LED stacklight with sounder | 70 | 288 | **5 386.50** |

**Multi-coloured** (single) **stacklight with incorporated sounder**

| | | | | | | |
|---|---|---|---|---|---|---|
| **36909** | multi-coloured | 12 - 24 VAC/DC | econo LED stacklight with sounder | 70 | 208 | **4 305.00** |

**Mounting accessories for above EOS stacklights**

| | | | | | |
|---|---|---|---|---|---|
| **36911** | light grey | wall mounting base for lateral mounting | 61 | 97 | **479.85** |
| **27760** | light grey | flat base for surface mounting | 67.5 | 34 | **273.00** |
| **27761** | light grey | extension for above flat base | *(100 mm)* | | **259.35** |


36900



**MLINE - M**ultivoltage - **M**ultifunction - **M**odular - **M**ultichannel *(NPN version)*

**MLINE** is a unique, flexible, modular concept permitting different audio and signalling devices to be combined with facilities to mount them in the most practical way.

Different **DOMES** *(audio, visual or both)* can be mounted on any of six different **BASES** which determines the supply voltage of the unit - **12 - 24 VAC/DC** or **120 - 240 VAC**

- LED technology - zero maintenance built-in LED guaranteeing up to 100.000 hours of productive life

Scan to watch video

**DOMES** - beacons/sounders or combinations of both - require **BASES** *(see overleaf)* to complete device



90823 + 90367



90504 + 90367



90351 + 90368



90363 + 90343



90362 + 90368

| type | lens colour | dB @ 1meter | description | dimensions Ø | dimensions H | price |
|---|---|---|---|---|---|---|
| **XLF S - Low profile beacon** | | | **multifunctional LED signalling** | | | **IP66** |
| **Selectable light effects:** | | | - Steady light<br>- Flashing *(single-flash 1F)*<br>- Strobe effect *(5x flash)*<br>- Random light effect | | | |
| **Adjustable brightness** *(3 levels)* | | | | | | |
| **Directional -** Fresnel lens - *(for long distance signalisation)* | | | | | | |
| • Luminous intensity *(Candela)*: | | | 4200 cd max | | | |
| **90821** | blue | – | multifunctional low-profile LED beacon | 92 | 42.5 | **2 950.50** |
| **90822** | amber | – | multifunctional low-profile LED beacon | 92 | 42.5 | **2 950.50** |
| **90823** | red | – | multifunctional low-profile LED beacon | 92 | 42.5 | **2 950.50** |
| **90824** | green | – | multifunctional low-profile LED beacon | 92 | 42.5 | **2 950.50** |
| **90826** | clear | – | multifunctional low-profile LED beacon | 92 | 42.5 | **3 307.50** |
| **Multi-coloured** *red, green, blue, amber, yellow, cyan, violet, white selectable on one unit* | | | | | | |
| **90156** | multi | *(85 cd)* | multifunction/colour low profile beacon | 92 | 42.5 | **3 885.00** |
| **Proximity -** Opaline lens - *(for close proximity signalisation)* | | | | | | |
| • Luminous intensity *(Candela)*: | | | 25 cd max | | | |
| **90502** | amber | – | multifunctional low profile LED beacon | 92 | 42.5 | **2 950.50** |
| **90503** | red | – | multifunctional low profile LED beacon | 92 | 42.5 | **2 950.50** |
| **90504** | green | – | multifunctional low profile LED beacon | 92 | 42.5 | **2 950.50** |
| **FLR S - Tall beacon** | | | high optical performance LED signalling | | | **IP66** |
| • 24 bright LEDs permit 3 selectable luminous effects | | | | | | |
| • Luminous intensity *(Candela)*: | | | 455 cd max | | | |
| **Selectable light effects:** | | | - Steady light<br>- Flashing *(triple flash strobe effect)*<br>- Rotating light *(simulates traditional rotating beacon)* | | | |
| **90351** | blue | – | multifunctional tall LED beacon | 92 | 108 | **4 557.00** |
| **90352** | amber | – | multifunctional tall LED beacon | 92 | 108 | **4 557.00** |
| **90353** | red | – | multifunctional tall LED beacon | 92 | 108 | **4 557.00** |
| **90354** | green | – | multifunctional tall LED beacon | 92 | 108 | **4 557.00** |
| **SIR-E S - Multi-functional electronic sounder** | | | | | | **IP65** |
| • High acoustic performance - adjustable volume | | | | | | |
| • Multi-tone 64 different sounds available *(selectable via internal dip switches)* | | | | | | |
| • Two separate functions: pre-alarm - alarm *(controllable via separate electric contacts)* | | | | | | |
| **90360** | grey | 105 dB | multifunction sounder *(64 sounds)* | 92 | 62 | **2 719.50** |
| **90358** | red | 105 dB | multifunction sounder *(64 sounds)* | 92 | 62 | **2 719.50** |
| **SIR-E LED S - Combination beacon and sounder** | | | | | | |
| • Selectable light effects - steady or strobe light effect | | | | | | |
| • Multi-tone 64 different sounds available *(selectable via internal dip switches)* | | | | | | |
| **90362** | amber | 105 dB | beacon and sounder *(64 sounds)* | 92 | 62 | **3 423.00** |
| **90363** | red | 105 dB | beacon and sounder *(64 sounds)* | 92 | 62 | **3 318.00** |
| **90361** | blue | 105 dB | beacon and sounder *(64 sounds)* | 92 | 62 | **3 423.00** |
| **SIR-E LED MAX -** Combination beacon and high output sounder | | | | | | |
| **90563** | red | 115 dB | beacon and sounder *(64 sounds)* | 92 | 88 | **7 192.50** |
| **SIR-E LED JUNIOR -** Econo combination beacon/sounder | | | | | | |
| • Two lighting effects: steady - flashing | | | | | | |
| **90402** | amber | 100 dB | beacon and sounder *(16 sounds)* | 92 | 62 | **2 415.00** |
| **90403** | red | 100 dB | beacon and sounder *(16 sounds)* | 92 | 62 | **2 415.00** |
| **90404** | green | 100 dB | beacon and sounder *(16 sounds)* | 92 | 62 | **2 415.00** |



Above ZAR prices do not include VAT. E&OE


90367


90368


90370


90610


90375


90512


90352 + 90367 + 90553


69786


69788

**BASES** - for MLINE beacons or sounders or combinations of both, provide a number of mounting options. On any of six different **BASES** which determine the supply voltage of the unit 12 - 24 VAC/DC or 120 - 240 VAC

| type | lens colour | | supply voltage | description | dimensions (mm) Ø | height | price |
|---|---|---|---|---|---|---|---|
| **SHALLOW** | compact low profile surface mount bottom cable entry | | | | | | |
| **90367** | grey | **LT** | 12-24 VAC/DC | shallow base for MLine domes | 92 | 21 | **357.00** |
| **90343** | red | **LT** | 12-24 VAC/DC | shallow base for MLine domes | 92 | 21 | **357.00** |
| **DEEP** | surface mount base with 2 x **M20** side knockouts and compression glands | | | | | | |
| **90368** | grey | **LT** | 12 - 24 VAC/DC | deep base for MLine domes | 92 | 46 | **395.85** |
| **90345** | red | **LT** | 12 - 24 VAC/DC | deep base for MLine domes | 92 | 46 | **395.85** |
| **90369** | grey | **HT** | 120 - 240 VAC | deep base for MLine domes | 92 | 46 | **1 848.00** |
| **90827*** | grey | **HT** | 120 - 240 VAC | deep base for MLine domes | 92 | 46 | **1 386.00** |
| **WALL** | lateral wall mount base with 2 x **M20** knockouts | | | | | | |
| **90370** | grey | **LT** | 12 - 24 VAC/DC | wall base for MLine domes | 115 | 61 | **472.50** |
| **90347** | red | **LT** | 12 - 24 VAC/DC | wall base for MLine domes | 115 | 61 | **472.50** |
| **90371** | grey | **HT** | 120 - 240 VAC | wall base for MLine domes | 115 | 61 | **2 121.00** |
| **90828*** | grey | **HT** | 120 - 240 VAC | wall base for MLine domes | 115 | 61 | **1 533.00** |
| **POLE** | pole mount base for 1.5" NPT threaded pole | | | | | | |
| **90610** | grey | **LT** | 12 - 24 VAC/DC | pole mnt base for MLine domes | 92 | 66 | **529.20** |
| **90612** | grey | **HT** | 120 - 240 VAC | pole mnt base for MLine domes | 92 | 66 | **2 383.50** |
| **FLUSH** | flush mount base for applications requiring low visual, discrete aesthetics | | | | | | |
| **90375** | white | **LT** | 12 - 24 VAC/DC | flush base for MLine domes | 146 | 71 | **628.95** |
| **90376** | white | **HT** | 120- 240 VAC | flush base for MLine domes | 146 | 71 | **2 551.50** |
| **DOUBLE** | wall mount base accomodates 2 x warning and/or signalling devices | | | | | | |
| **90372** | grey | **LT** | 12 - 24 VAC/DC | double base for MLine domes | 120 | 97 | **706.65** |
| **90373** | red | **LT** | 12 - 24 VAC/DC | double base for MLine domes | 120 | 97 | **706.65** |
| **90512** | grey | **HT** | 120 - 240 VAC | double base for MLine domes | 120 | 97 | **2 677.50** |

* *Junior economical base only permits one function to be selected*

**Stainless steel protection grids** *(heavy duty)* for **MLINE** beacons and sounders

| type | size | | **SHALLOW Base** 12 - 24 VAC/DC | **DEEP Base** 12 - 24 VAC/DC - 120 - 240 VAC | price |
|---|---|---|---|---|---|
| **90557** | size 0 | for | XLF S/RGA | – | **1 995.00** |
| **90551** | size 1 | for | SIR-E / SIR-E LED | XLF S/RGA | **1 827.00** |
| **90552** | size 2 | for | SIR-E MAX/ SIR-E LED MAX | SIR-E / SIR-E LED | **1 900.50** |
| **90553** | size 3 | for | FLR / SLR | SIR-E MAX/ SIR-E LED MAX | **2 194.50** |
| **90554** | size 4 | for | – | FLR S / SLR S | **2 268.00** |

## TLINE series - LED industrial traffic lights IP66

**TLINE** traffic lights *(based on **MLINE** philosophy)*, providing reliable signalling and versatile solutions, that are engineered for parking and access points.

The LED technology allows for better resistance to vibrations, longer life product, drastically reducing operating and maintenance costs. The self-extinguishing polycarbonate body guarantees high impact resistance.

These industrial traffic lights offer high visibility thanks to their dome, engineered to intensify the light beam, and to the visors supplied with the product.
Easy installation *(two cable entries)*, a swivel fixing bracket or a pole mounting adapter are available as accessories.

- 3 luminous effects: steady light, flashing light, strobe effect *(controllable via separate contacts)*
- Luminous intensity *(Candela):* 4200 cd max

| type | colours | supply | lens | description | price |
|---|---|---|---|---|---|
| **TLINE 2 XLF** | **2 light - green/red** | | | (H) 231 x (W) 120 x (D) 133 mm | |
| **69786** | red/green | 12 - 24 VAC/DC | Fresnel | 2-way industrial LED traffic light | **10 269.00** |
| **69787** | red/green | 120 - 240 VAC | Fresnel | 2-way industrial LED traffic light | **11 970.00** |
| **TLINE 3 XLF** | **3 light - green/amber/red** | | | (H) 342 x (W) 120 x (D) 133 mm | |
| **69788** | red/amber/green | 12 - 24 VAC/DC | Fresnel | 3-way industrial LED traffic light | **14 490.00** |
| **69789** | red/amber/green | 120 - 240 VAC | Fresnel | 3-way industrial LED traffic light | **16 905.00** |

**Accessories for traffic lights** *(above)*

| | | | | |
|---|---|---|---|---|
| **69784** | wall bracket | swivel type | wall mount bracket for **TLINE** traffic lights | **630.00** |
| **69785** | NPT adaptor | adaptor | *(required for pole mounting of traffic light)* | **604.80** |
| **27765** | pole mount | base | with stainless steel pole (L) 424 mm | **1 092.00** |
| **27766** | pole mount | base | with stainless steel pole (L) 1240 mm | **1 302.00** |




Up to 5 light modules or 4 light modules plus 1 x acoustic module can be combined with various colours permitting a number of signalling functions with multiple installation mounting options.

| type | colour | dB @ 1m max | supply voltage | description | price |
|---|---|---|---|---|---|
| **TWS SMD series - LED signal towers Ø70 mm** | | | | **IP66** | |
| • Low power consumption, high vibration resistance, 100.000 hour lifetime<br>• Multi-functionality, excellent optical definition, improved light output *(12 LEDS)* | | | | | |
| **TWS BASE - Wiring base + top cover for TWS towers** | | | | (H) 48 mm | |
| **27700*** | grey | – | | wiring base + top cover for above TWS towers | **771.75** |
| * *Essential for assembly of TWS tower* | | | | | |
| **TWS LED MULTI - integrated LED light module** | | | | (H) 59 mm | |
| - 4 light functions *(selectable by dip switch on each module)*<br>steady - single flash - double flash - triple flash | | | | | |
| **36501** | blue | – | 24 VAC/DC | multi-functional LED light module | **1 606.50** |
| **36502** | amber | – | 24 VAC/DC | multi-functional LED light module | **1 606.50** |
| **36503** | red | – | 24 VAC/DC | multi-functional LED light module | **1 606.50** |
| **36504** | green | – | 24 VAC/DC | multi-functional LED light module | **1 606.50** |
| **36505** | yellow | – | 24 VAC/DC | multi-functional LED light module | **1 606.50** |
| **36506** | white | – | 24 VAC/DC | multi-functional LED light module | **1 606.50** |
| **36521** | blue | – | 240 VAC | multi-functional LED light module | **1 785.00** |
| **36522** | amber | – | 240 VAC | multi-functional LED light module | **1 785.00** |
| **36523** | red | – | 240 VAC | multi-functional LED light module | **1 785.00** |
| **36524** | green | – | 240 VAC | multi-functional LED light module | **1 785.00** |
| **36525** | yellow | – | 240 VAC | multi-functional LED light module | **1 785.00** |
| **36526** | white | – | 240 VAC | multi-functional LED light module | **1 785.00** |
| **Acoustic module for above TWS towers** | | | | *IP54* (H) 104 mm | |
| **TWS PZO - Piezoelectric sounder** *(6 tones selectable via internal dip-switch)* | | | | | |
| **27718** | grey | 85 dB | 12 - 48 VAC/DC | acoustic module *(6 sounds)* | **1 459.50** |
| **27719** | grey | 85 dB | 110 - 240 VAC | acoustic module *(6 sounds)* | **1 680.00** |
| **TWS MDA - magneto-dynamic sounder** *(32 tones selectable via internal dip-switch)* | | | | | |
| **27790** | grey | 105 dB | 12 - 24 VAC/DC | acoustic module *(32 sounds)* | **2 635.50** |
| **27793** | grey | 105 dB | 240 VAC | acoustic module *(32 sounds)* | **3 769.50** |




| | | | | | |
|---|---|---|---|---|---|
| **miniTWS series - LED signal towers Ø50 mm** | | | | **IP66** *(IP54 with sounder)* | |
| • Pre-assembled ready to install stack lights in 2 or 3 modules<br>• Low power consumption, high vibration resistance, 100,000 hour lifetime<br>• Multi-functionality two light effects: steady, flashing | | | | | |
| **Two light stack light -** *(green / red)* | | | | | |
| **31594** | grn/red | – | 24 VAC/DC | LED signal tower complete | **3 559.50** |
| **31596** | grn/red | 77 dB | 24 VAC/DC | LED signal tower + acoustic sounder | **4 704.00** |
| **Three light stack light -** *(green / amber / red)* | | | | | |
| **31595** | grn/amb/red | – | 24 VAC/DC | LED signal tower complete | **4 609.50** |
| **31597** | grn/amb/red | 77 dB | 24 VAC/DC | LED signal tower + acoustic sounder | **5 995.50** |
| **babyTWS series- LED signal towers Ø36 mm** | | | | **IP65** *(IP54 with sounder)* | |
| • Pre-assembled ready-to-install stack lights in 2 or 3 modules<br>• Low power consumption, high vibration resistance, 100.000 hour lifetime<br>• Integrated steady light modules, excellent optical definition | | | | | |
| **Two light stacklight -** *(green / red)* | | | | | |
| **36566** | grn/red | – | 24 VAC/DC | LED signal tower complete | **3 213.00** |
| **36568** | grn/red | 72 dB | 24 VAC/DC | LED signal tower + acoustic sounder | **4 032.00** |
| **Three light stacklight -** *(green / amber / red)* | | | | | |
| **36567** | grn/amb/red | – | 24 VAC/DC | LED signal tower complete | **4 515.00** |
| **36569** | grn/amb/red | 72 dB | 24 VAC/DC | LED signal tower + acoustic sounder | **5 334.00** |

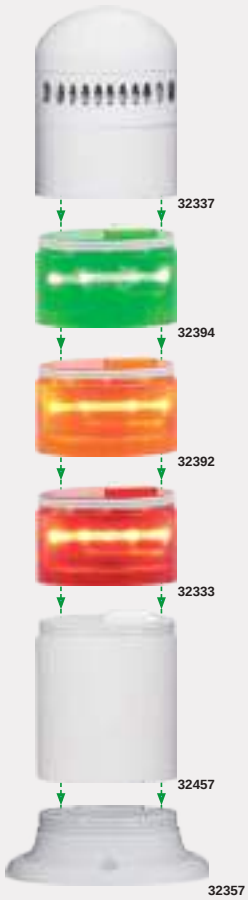



| | | | | |
|---|---|---|---|---|
| **Accessories for TWS, miniTWS and babyTWS towers** | | | | |
| **27760** | BS | mount | mounting foot for TWS *(Ø 88 mm)* | **273.00** |
| **27761** | PR | ext. | 100 mm extension stem for TWS towers | **259.35** |
| **27762** | BP1 | bracket | wall mounting bracket for TWS towers | **363.30** |
| **27763** | BP2 | double | wall mount bracket *(double entry)* for TWS towers | **409.50** |
| **27777** | M16 | – | mounting foot with junction box for TWS towers | **861.00** |






Above ZAR prices do not include VAT. E&OE




**ELYPS** signal tower/stack light system features modules which plug-in to each other to form specific functions. Unique oval shape *(50 - 70 mm)* diameter variance depending on the viewing angle. Latest generation LED technology for highly effective indication with exceptional life *(+100.000 hours)*

- Supply voltage 12/24 VDC or 120 - 240 VAC/DC *(determined by the wiring module)*
- IP65 protection *(suitable for indoor or outdoor use)*
- Light modules configurable for "steady" or various modes of "flashing"

Modular stack lights - made up of four groups of modules

- Mounting base - Wiring module - Light modules - Acoustic modules

| type | colour | supply voltage | mode | description | price |
|---|---|---|---|---|---|
| **ELYPS WM Wiring modules** | *for all common wiring (determines supply voltage)* | | | | |
| • Permits connection of up to 7 modules - steady, flashing or sound<br>• Supply voltage of the system is determined by the wiring module | | | | | |
| **LT** | 12 - 24 VDC | | | modules *(direct connected)* | |
| **HT** | 120 - 240 VAC/DC | | | modules *(with built-in 12/24V transformer)* | |
| **WM - wiring module -** *basic type without built-in flashing facility* | | | | | |
| **32457** | grey | **LT** | 12 - 24 VAC/DC | steady | standard wiring module/base | **623.70** |
| **32320** | grey | **HT** | 120 - 240 VAC | steady | standard wiring module/base | **2 142.00** |
| **WM - MULTI wiring module -** *with built-in flashing facility* | | | | | |
| • Multi-functional flashing facility of each connected independent light module<br>• Configurable for "steady" or Single flash - Double flash - Triple flash - Strobe mode | | | | | |
| **32467** | grey | **LT** | 12 - 24 VAC/DC | flashing | multi LT wiring module/base | **2 698.50** |
| **32326** | grey | **HT** | 120 - 240 VAC | flashing | multi LT wiring module/base | **2 835.00** |
| **ELYPS Light modules** | *steady light or individual selectable flashing* | | | | |
| **LM light module -** economic, entry-level LED light module with steady light | | | | | |
| **32331** | blue | WM LT wiring module (24 VAC/DC only) | | steady | plug-in steady light module | **736.05** |
| **32332** | amber | | | steady | plug-in steady light module | **736.05** |
| **32333** | red | | | steady | plug-in steady light module | **736.05** |
| **32334** | green | | | steady | plug-in steady light module | **736.05** |
| **32335** | yellow | | | steady | plug-in steady light module | **736.05** |
| **32336** | white | | | steady | plug-in steady light module | **736.05** |
| **LM S - MULTI light modules** - multifunctional 4 selectable light effects *(via dip-switches)* | | | | | |
| • 2x FLASH - 3x FLASH - 5x FLASH - RANDOM *(uneven flashing pattern)* | | | | | |
| **32391** | blue | according to selected wiring module | | flashing | plug-in multi-light module | **1 879.50** |
| **32392** | amber | | | flashing | plug-in multi-light module | **1 879.50** |
| **32393** | red | | | flashing | plug-in multi-light module | **1 879.50** |
| **32394** | green | | | flashing | plug-in multi-light module | **1 879.50** |
| **32395** | yellow | | | flashing | plug-in multi-light module | **1 879.50** |
| **32396** | white | | | flashing | plug-in multi-light module | **1 879.50** |
| **LM X - MULTI light modules** - superbright multi-functional LED light module | | | | | |
| • With superbright LED simulating traditional Xenon discharge lamps | | | | | |
| **32351** | blue | according to selected wiring module | | flashing | plug-in super brite light module | **1 701.00** |
| **32352** | amber | | | flashing | plug-in super brite light module | **1 701.00** |
| **32353** | red | | | flashing | plug-in super brite light module | **1 701.00** |
| **32354** | green | | | flashing | plug-in super brite light module | **1 701.00** |
| **32355** | yellow | | | flashing | plug-in super brite light module | **1 701.00** |
| **32356** | white | | | flashing | plug-in super brite light module | **1 701.00** |




| | | | | | |
|---|---|---|---|---|---|
| **ELYPS Acoustic modules** | to add acoustic signalisation to luminous sectors | | | | |
| **AM series** | Piezoelectric - 2 sound modes *(intermittent or continuous)* | | | | |
| **32337** | grey | acc. to wiring module | 87 dB | plug-in acoustic module | **2 131.50** |
| **AM S series** | Magneto-dynamic - 16 different sound modes - *adjustable volume 60 - 90 dB* | | | | |
| **32347** | grey | acc. to wiring module | 90 dB | plug-in acoustic module | **2 835.00** |




| | | | | |
|---|---|---|---|---|
| **Mounting bases for signal towers** | | | | |
| **32357** | grey | foot mounting base | for ELYPS signal towers | **359.10** |
| **32377** | grey | foot mount base with 10 cm ext. | for ELYPS signal towers | **749.70** |
| **32367** | grey | wall mounting base | for ELYPS signal towers | **798.00** |
| **32387** | grey | pole mounting base | for ELYPS signal towers | **724.50** |



42200



42212



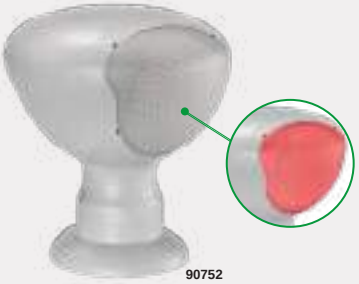
42021



50415



50424



90752



22700

## Industrial motor-driven sirens

| type | supply voltage | dB @ 1m | description | IP | run duration on | run duration off | dimensions (Ø) | dimensions (H) | price |
|---|---|---|---|---|---|---|---|---|---|
| **MICRO W10 series** | motor-driven sirens | | | | | | | | |
| Ideal choice for industrial applications, from general-purpose signalization to warning<br>• Can be installed vertically or horizontally | | | | | | | | | |
| **42200** | 12 VDC | 93 | motor-driven siren | IP42 | *(continuous)* | | 84 | 80 | **1 144.50** |
| **42202** | 24 VDC | 93 | motor-driven siren | IP42 | *(continuous)* | | 84 | 80 | **1 144.50** |
| **42212** | 240VAC | 93 | motor-driven siren | IP42 | *(continuous)* | | 90 | 129 | **2 205.00** |
| **CELERE series** | motor-driven sirens | | | | | | | | |
| • Self-extinguishing PC body with high-impact resistance<br>• Motor protection thermal circuit breaker installed on **CELERE** and **super-CELERE** versions<br>• Easy installation by means of the integrated fixing bracket - **M12** cable gland | | | | | | | | | |
| **mini-CELERE** | **miniature electro-mechanical siren** | | | | | | | | |
| **42006** | 12 VDC | 101 | motor-driven siren | IP43 | *(continuous)* | | 91 | 115 | **2 551.50** |
| **42001** | 24 VAC/DC | 101 | motor-driven siren | IP43 | 1 min. | 10 min. | 91 | 115 | **2 551.50** |
| **42005** | 240 VAC/DC | 101 | motor-driven siren | IP43 | 1 min. | 10 min. | 91 | 115 | **2 551.50** |
| **CELERE** | **mid-sized electro-mechanical siren** | | | | | | | | |
| **42026** | 12 VDC | 110 | motor-driven siren | IP43 | *(continuous)* | | 118 | 167 | **4 620.00** |
| **42021** | 24 VAC/DC | 110 | motor-driven siren | IP43 | 1 min. | 10 min. | 118 | 167 | **4 620.00** |
| **42025** | 240 VAC/DC | 110 | motor-driven siren | IP43 | 1 min. | 10 min. | 118 | 167 | **4 620.00** |
| **super-CELERE** | **large-size electro-mechanical siren** | | | | | | | | |
| **42046** | 12 VDC | 114 | motor-driven siren | IP43 | *(continuous)* | | 140 | 186 | **6 709.50** |
| **42047** | 24 VAC/DC | 114 | motor-driven siren | IP43 | *(continuous)* | | 140 | 186 | **6 709.50** |
| **42045** | 240 VAC/DC | 114 | motor-driven siren | IP43 | 1 min. | 10 min. | 140 | 186 | **6 195.00** |
| **Electronic sirens** | | | | | | | | | |
| • Adjustable volume regulation and sound progression regulation | | | | | | | | | |
| **SE4/29 series** - *(modular base mount)* | 5 *selectable sound tones* | | | | | | | | |
| **50415** | 12-24 VAC/DC | 97 | electronic siren | IP30 | *(selectable)* | | 100 | 90 | **3 937.50** |
| **50418** | 240 VAC | 97 | electronic siren | IP30 | *(selectable)* | | 100 | 90 | **5 733.00** |
| **SE12 series** - *(hinged mounting bracket)* | 32 *different tones (selectable via dip-switches)* | | | | | | | | |
| **50424** | 12-24 VAC/DC | 114 | electronic siren | IP43 | *(selectable)* | | 102 | 108 | **5 218.50** |
| **50427** | 240 VAC | 113 | electronic siren | IP43 | *(selectable)* | | 130 | 108 | **6 079.50** |
| **Super loud electronic sirens** | **120dB** | | | | | | | **IP68, IP69K** | |
| • **64** different *(programmable)* sounds<br>• **120 dB - super loud** - siren *(6 programmable volume levels)* | | | | | | | | | |
| **SIR-TOUCH - Siren only** | Unique touch programming | connection via **M12 4PIN** connector | | | | | | | |
| **90750** | 24 VDC | 120 | electronic siren | IP68/69K | *(selectable)* | | 180 | 207 | **10 237.50** |
| **90751** | 85 - 265 VAC | 120 | electronic siren | IP68/69K | *(selectable)* | | 180 | 207 | **10 920.00** |
| **SIR-TOUCH LED - Siren and LED beacon** *(programmable for steady light, flashing light or off)* | | | | | | | | | |
| **90752** | 24 VDC | 120 | electronic siren | IP68/69K | *(selectable)* | | 180 | 207 | **11 865.00** |
| **90753** | 85 - 265 VAC | 120 | electronic siren | IP68/69K | *(selectable)* | | 180 | 207 | **12 600.00** |
| **Accessories -** *for* **SIR-TOUCH** *siren* | | | | | | | | | |
| **90754** | mount | | swivel wall mount bracket for above siren | | | | | | **953.40** |
| **90755** | mount | SE 12 | swivel base mount bracket for above siren | | | | | | **953.40** |
| **120104-06-053** | 4 Pin female | M12 PUR cable for **SIR-TOUCH** termination | | | | 2 meter | | | **231.00** |
| **120104-06-061** | 4 Pin female | M12 PUR cable for **SIR-TOUCH** termination | | | | 5 meter | | | **465.15** |
| **SE120 Alarm sounder** | **120dB** | | | | | | | | |
| **Powerful and resistant - Customised alerts - Simple configuration** (H) 190 x (W) 230 x (D) 190 mm<br>**Discover a new level of sound power**<br>• Unique configuration and diagnostics via **NFC** *(with App)*<br>• **120 dB - super loud** - siren *(8 programmable volume levels)*<br>• 64 different sounds *(programmable)* | | | | | | | | | |
| **22700** | 24 VDC | 120 | electronic siren | IP66/69K | *(selectable)* | | 190 | 190 | **8 232.00** |
| **22701** | 85 - 265 VAC | 120 | electronic siren | IP66/69K | *(selectable)* | | 190 | 190 | **9 775.50** |



Above ZAR prices do not include VAT. E&OE



94734

**EOS 14.0 series - LED signal stack lights** *(with analog communication standard)*

The **EOS I4.0** system uses an analog communication standard; different functions *(luminous and acoustic)* are activated with different input voltage thresholds. Connected to the network or to a cloud, the **EOS I4.0** system allows remote control and monitoring of machinery and could therefore be part of the Industry 4.0 for Human - Machine Interface (HMI).

**EOS I4.0**, the first visual and acoustic LED signal column with analog output provide 32 different signal alerts in the range 0 - 10 VDC. Available in various configurations, with one or two multicoloured RGB light modules, acoustic module *(2 levels of sound output),*

Supply voltage of the column is 24 VDC, the system is designed to activate luminous signalling 5 colours *(in steady or flashing light mode)* and acoustic signalling with input voltage thresholds *(adjustable 0-10 VDC)* using just one analog PLC output.

Through hysteresis, all voltage thresholds are protected from unwanted activations or colour changes.

32 different signals *(configurable with 0 - 10 VDC analog signal)*

- Supply voltage: 12/24 VAC/DC
- Protection: IP66 -IP69K - *(suitable for indoor or outdoor use)*
- Light module: 5 colours on one module *("steady" or "flashing" mode)*
- Acoustic module: Selectable for sound A or B or OFF



94735

| type | colour | supply voltage | dB @ 1m max | mode/ colour selection | description | price |
|---|---|---|---|---|---|---|
| **EOS 14.0 series - Signal stack lite** *(with analog communication standard)* | | | | | | |
| • One or two multi-coloured *(5 colours)* light modules<br>• One acoustic module providing 2 sounds A and B | | | | | | |
| **Single multi-coloured light module + acoustic module 77 dB** | | | | | | |
| **94734** | multi | 12 - 24 VAC/DC | 77 dB | 0 - 10 VDC | analog controlled stack light | **5 334.00** |
| **Single multi-coloured light module + acoustic module 95 dB** | | | | | | |
| **94732** | multi | 12 - 24 VAC/DC | 95 dB | 0 - 10 VDC | analog controlled stack light | **5 880.00** |
| **Double multi-coloured light module + acoustic module 77 dB** | | | | | | |
| **94736** | multi | 12 - 24 VAC/DC | 77 dB | 0 - 10 VDC | analog controlled stack light | **6 993.00** |
| **Double multi-coloured light module + acoustic module 77 dB** | | | | | | |
| **94735** | multi | 12 - 24 VAC/DC | 95 dB | 0 - 10 VDC | analog controlled stack light | **7 329.00** |

## EOS 14.0 series - Function table reference guide

- With the EOS 14.0, a PLC with one 0 - 10 VDC analog output allows 32 different functions to be configured.
- Through hysteresis, all voltage thresholds are protected from unwanted activations or colour changes. (refer to table below)



EOS 14.0 + PLC
(with analog output)

| FUNCTION | RANGE 0 - 10V | |
|---|---|---|
| NOTHING | 0.35 | ±5% |
| LED OFF | 1.00 | ±5% |
| STEADY RED | 1.65 | ±5% |
| BLINKING RED | 2.30 | ±5% |
| STEADY GREEN | 3.00 | ±5% |
| BLINKING GREEN | 3.65 | ±5% |
| STEADY BLUE | 4.30 | ±5% |
| BLINKING BLUE | 5.00 | ±5% |
| STEADY AMBER | 5.65 | ±5% |
| BLINKING AMBER | 6.30 | ±5% |
| STEADY WHITE | 7.00 | ±5% |
| BLINKING WHITE | 7.65 | ±5% |
| SOUND OFF | 8.30 | ±5% |
| SOUND A | 9.00 | ±5% |
| SOUND B | 9.65 | ±5% |
| | | |
| PULSE TIME | 500 ms | 2.5s |




## Signal beacons and towers

Signal beacons are fundamental elements for visual and audible signalling of system status in manufacturing processes.

| type | colour | voltage | description | price |
|---|---|---|---|---|
| **Signal beacons Ø62 mm** | | BA15d | **IP54** | |
| • Bases for various mounting solutions *(supplied separately)* | | | | |
| **Steady light modules -** *BA15d lamp supplied separately (see bottom of page)* | | | | |
| **LB6EL1** | orange | lamp dependant | direct supply - steady light module | **866.25** |
| **LB6EL3** | green | | direct supply - steady light module | **866.25** |
| **LB6EL4** | red | | direct supply - steady light module | **866.25** |
| **LB6EL5** | yellow | | direct supply - steady light module | **866.25** |
| **LB6EL6** | blue | | direct supply - steady light module | **866.25** |
| **LB6EL8** | white | | direct supply - steady light module | **866.25** |
| **Blinking/steady light modules -** *BA15d lamp supplied separately (see bottom of page)* | | | | |
| **LB6GLB1** | orange | 12 - 48 VAC/DC | blinking light module *(no lamp)* | **1 207.50** |
| **LB6GLB3** | green | 12 - 48 VAC/DC | blinking light module *(no lamp)* | **1 207.50** |
| **LB6GLB4** | red | 12 - 48 VAC/DC | blinking light module *(no lamp)* | **1 207.50** |
| **LB6GLB5** | yellow | 12 - 48 VAC/DC | blinking light module *(no lamp)* | **1 207.50** |
| **LB6GLB6** | blue | 12 - 48 VAC/DC | blinking light module *(no lamp)* | **1 207.50** |
| **LB6GLM1** | orange | 24 - 230 VAC | blinking light module *(no lamp)* | **1 207.50** |
| **LB6GLM3** | green | 24 - 230 VAC | blinking light module *(no lamp)* | **1 207.50** |
| **LB6GLM4** | red | 24 - 230 VAC | blinking light module *(no lamp)* | **1 207.50** |
| **LB6GLM5** | yellow | 24 - 230 VAC | blinking light module *(no lamp)* | **1 207.50** |
| **LB6GLM6** | blue | 24 - 230 VAC | blinking light module *(no lamp)* | **1 207.50** |
| **Mounting accessories for signal beacons** *(above)* | | | | |
| **LB6BP03** | black | | horizontal surface mounting base | **193.20** |
| **LB6BP05** | black | | through hole mounting base Ø22 mm with locknut | **232.05** |
| **LB6BP07** | black | | base for extended tube connection | **232.05** |
| **LT7BP01** | black | | surface mount base with 100 mm extension for ***LB6BP07*** | **409.50** |
| **LT7BP02** | black | | wall mount base with 100 mm tube extension for ***LB6BP07*** | **557.55** |

**Super bright LED signal lamps BA15d** *(360º illumination)* *for above*

| | | | | | |
|---|---|---|---|---|---|
| **LT7ALLB*** | red | 24 VAC/DC | BA15d | LED lamp for towers | **578.55** |
| **LT7ALLM*** | red | 230 VAC | BA15d | LED lamp for towers | **648.90** |

* Replace with: **3**= green / **4**= red / **5**= yellow / **6**= blue / **8**= white

| | | | | |
|---|---|---|---|---|
| **Signal towers Ø50 mm** | | | **IP65** | |

Signal towers can be assembled by stacking the following components:

1) Wiring module for terminating *(determines control voltage: 12 - 24 VDC or 110 - 230 VAC)*
2) Up to 5 light modules *(or)* 4 light modules + 1 sound module
3) Add required mounting accessories

**Wiring modules** *(required for termination of signal towers)*

| | | | | |
|---|---|---|---|---|
| **LTN50MW024** | grey | 12…24 VDC | terminating modules for signal towers | **1 312.50** |
| **LTN50MW230** | grey | 110…230 VAC | terminating modules for signal towers | **2 394.00** |

**Light modules -** *(integrated LEDs)*

Configurable for steady light or blinking light - via internal DIP switch on each module

| | | | | |
|---|---|---|---|---|
| **LTN50ML1** | orange | determined by wiring module | LED light modules for signal towers | **874.65** |
| **LTN50ML3** | green | | LED light modules for signal towers | **874.65** |
| **LTN50ML4** | red | | LED light modules for signal towers | **874.65** |
| **LTN50ML6** | blue | | LED light modules for signal towers | **874.65** |
| **LTN50ML8** | white | | LED light modules for signal towers | **874.65** |
| **LTN50C** | grey | top cover | required if no sound module is used | **98.70** |

**Sound module** *(continuous sound)* *(IP65)*

| | | | | |
|---|---|---|---|---|
| **LTN50MSL** | grey | 85dB | sound module for signal towers | **919.80** |

**Mounting accessories for signal towers** *(above)*

| | | | | |
|---|---|---|---|---|
| **LTN50BP1** | black | plastic | horizontal surface mounting base | **213.15** |
| **LTN50BP3** | black | plastic | surf mount base adjustable through 180° | **425.25** |
| **LTN50BM1** | metal | metal | horizontal surface mounting base | **297.15** |
| **LTN50P100T** | metal | metal | 100 mm extension tube for base | **204.75** |



Above ZAR prices do not include VAT. E&OE




## Signal towers / Stack lights Ø70 mm

Signal towers are fundamental elements in manufacturing processes for visual and audible signalling of the system status. The signal towers can be assembled by stacking up to 5 light modules or 4 light modules and 1 sound module.

The modules feature exceptional brightness thanks to their plastic construction and the use of high-performance LEDs with a long service life.

The towers are quick and easy to install: simply align their reference marks and snap them together with a light twisting motion.

| | |
|---|---|
| No. of stackable modules: | 5 *(5 x light modules or 4 x light and 1x sound)* |
| Light modules: | Configurable as steady or flashing light |
| Sound modules: | Configurable as pulsed or continuous sound |
| Compliant with standards: | IEC/EN/BS 60947-5-1, IEC/EN/BS 60947-1, UL508, CSA C22.2 n° 14 |

| type | colour | voltage | description | price |
|---|---|---|---|---|
| **LED Signal towers Ø70 mm** | | | **IP65** | |
| **Signal towers are assembled by stacking the following components:** | | | | |
| 1) Wiring module for terminating *(determines control voltage: 12 - 24 VDC or 110 - 230 VAC)* | | | | |
| 2) Up to 5 light modules *(or)* 4 light modules + 1 sound module | | | | |
| 3) Add required mounting accessories | | | | |
| **Wiring modules** *(required for termination of signal towers)* | | | | |
| **LTN70MW024** | grey | 12…24 VDC | wiring modules for signal towers | **1 512.00** |
| **LTN70MW230** | grey | 110…230 VAC | wiring modules for signal towers | **2 751.00** |
| **Light modules -** *(integrated LEDs)* | | | | |
| Configurable for steady light or blinking light - via internal DIP switch on each module | | | | |
| **LTN70ML1** | orange | determined by wiring module | LED light modules for signal towers | **1 005.90** |
| **LTN70ML3** | green | | LED light modules for signal towers | **1 005.90** |
| **LTN70ML4** | red | | LED light modules for signal towers | **1 005.90** |
| **LTN70ML6** | blue | | LED light modules for signal towers | **1 005.90** |
| **LTN70ML8** | white | | LED light modules for signal towers | **1 005.90** |
| **LTN70C** | grey | top cover | required if no sound module is used | **112.35** |
| **Sound module -** *(continuous sound)* | | | *(IP65)* | |
| **LTN70MSL** | grey | 85dB | sound module for signal towers | **1 060.50** |
| **Mounting accessories for signal towers** *(above)* | | | | |
| **LTN70BP1** | black | plastic | horizontal surface mounting base | **244.65** |
| **LTN70BP3** | black | plastic | surf mount base adjustable through 180° | **489.30** |
| **LTN70BM1** | metal | metal | horizontal surface mounting base | **341.25** |
| **LTN70P100T** | metal | metal | 100 mm extension tube for base | **234.15** |

## Signal towers and beacons: Interpretation of light and sound signals

- Light and sound signals are a fundamental element for the safety of a system
- Each colour or sound alarm corresponds to a specific state of operation of the connected system and various levels of warning, as shown in the table below, according to EN 981-IEC/EN/BS 60073 standards
- The white module can be assigned a meaning as desired

| Visual Code | Red | Yellow / Orange | Blue | Green | White |
|---|---|---|---|---|---|
| Meaning | Danger / Emergency | Warning and caution - Abnormal situation | Mandatory command | Normal situation - Regular operation | No specific meaning |
| Sound | Fast modulated repetition or high-pitch pulsing | Continuous short sound | Alternating sound at. constant tone | Constant and prolonged sound after an alarm | Other sounds |
| Correlated actions | Immediate intervention to deal with dangerous situation | Control intervention required | Intervention needed for mandatory action | No specific action | Depending on the situation |

## Toggle switches



KN3C-R1021



KN3C-R1221


MTS-102


DS-12


KCD1-104


AC-05-2F

### KN3C series - Standard toggle switches

- Rating: 20A 125 VAC / 15A 250 VAC
- Termination: 6.3 mm tab terminals *(accepts 6.3 mm push-on lugs)*
- Mounting: **M12** x P1.0 mm threaded collar *(mounts through Ø12.2 mm panel hole)*
- Dielectric strength: 1500 VAC *(1 minute)*
- Legend: Supplied with ON/OFF legend plate

**Single pole toggle switches**

| type | current Ith | pos. | config. | mount hole Ø | switch | description | price |
|---|---|---|---|---|---|---|---|
| **KN3C-R1021** | 15A | 2-pos | ON-OFF | 12.7 mm | SPST | std power toggle switch | **75.60** |
| **KN3C-R1121** | 15A | 2-pos | ON-ON | 12.7 mm | SPDT | std power toggle switch | **76.65** |
| **KN3C-R1122** | 15A | 3-pos | ON-OFF-ON | 12.7 mm | SPDT | std power toggle switch | **77.70** |

**Double pole toggle switches**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **KN3C-R1221** | 15A | 2-pos | ON-OFF | 12.7 mm | DPST | std power toggle switch | **79.80** |
| **KN3C-R1321** | 15A | 2-pos | ON-ON | 12.7 mm | DPDT | std power toggle switch | **80.85** |
| **KN3C-R1322** | 15A | 3-pos | ON-OFF-ON | 12.7 mm | DPDT | std power toggle switch | **81.90** |

**Accessories** - *for above toggle switches*

| | | | |
|---|---|---|---|
| **WP-02** | boot | rubber protection boot **M12** for **KN3C** toggle switches | **14.70** |

### MTS series - Miniature toggle switches

- Rating: 6A 125 VAC / 3A 250 VAC
- Termination: Solder terminals (W) 2.05 mm
- Mounting: **M6** x 0.75 threaded collar *(mounts through Ø6 mm panel hole)*
- Dielectric strength: 1000 VAC *(1 minute)*
- Operating temp: -25...+85°C

**Single pole miniature toggle switches**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MTS-102** | 3A | 2-pos | ON-ON | 6.5 mm | SPDT | miniature toggle switch | **20.58** |
| **MTS-102T** | 3A | 2-pos | ON-(ON) | 6.5 mm | SPDT | spring return from R | **26.25** |
| **MTS-103** | 3A | 3-pos | ON-OFF-ON | 6.5 mm | SPDT | centre off | **23.94** |
| **MTS-103D** | 3A | 3-pos | (ON)-OFF-(ON) | 6.5 mm | SPDT | spring return from L+R | **29.61** |
| **MTS-103T** | 3A | 3-pos | ON-OFF-(ON) | 6.5 mm | SPDT | spring return from R | **27.30** |

**Double pole miniature toggle switches**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MTS-202** | 3A | 2-pos | ON-ON | 6.5 mm | DPST | miniature toggle switch | **25.10** |
| **MTS-203** | 3A | 3-pos | ON-OFF-ON | 6.5 mm | DPST | centre off | **28.46** |

**Miniature pushbutton switch - black button**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **DS-12** | 3A | 2-pos | ON-(ON) | 6.5 mm | SPDT | spring return *(blk button)* | **29.40** |

**Accessories** - *for above miniature switches*

| | | | |
|---|---|---|---|
| **WP-01** | boot | rubber protection boot for **MTS** miniature toggle switch | **13.55** |

### Rocker switches

Mechanical life: ≥10000 cycles

Made from durable PC materials, which are impact resistant to high temperature and discolouration. Switch simply pushes into the correctly cut hole.

- Current rating: 6A 250 VAC 10A 125VAC
- Contact resistance : ≤ 50mΩ
- Insulation resistance: ≥100mΩ
- Dielectric strength: ≥1500V AC/MIN
- Termination: Fast-on 4.8 or solder connection

| type | current rating | colour | poles | configuration contact | configuration switch | dimensions (mm) frame | dimensions (mm) cut-out | price |
|---|---|---|---|---|---|---|---|---|
| **KCD1-104** | 6A | black | 2-pole | DPST | ON/OFF | 21 x 15 | 19 x 13 | **11.34** |

### Power socket *(panel-mounting)*

Mechanical life: ≥6000 cycles

The AC panel-mount male socket simply mounts through the correctly cut hole *(26.5 x 20.5 mm)* in a panel, made from Nylon 66 to 94V-2 flammability

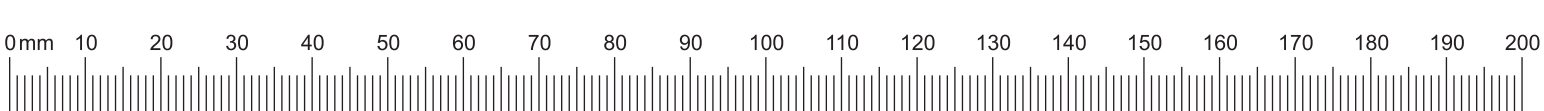
- Current rating: 10A 250 VAC
- Insulation resistance: ≥100mΩ - 500 VDC
- Withstand voltage: 2500V AC/1 min *(between all terminals)*
  3750V AC/1 min *(terminals to base)*
- Termination: Fast-on 4.8 or solder connection

| type | current rating | colour | poles | description | dimensions (mm) frame | dimensions (mm) cut-out | price |
|---|---|---|---|---|---|---|---|
| **AC-05-2F** | 10A | black | 2P+E | AC p/mount male socket | 31 x 24 | 26.5 x 20.5 | **18.06** |



Above ZAR prices do not include VAT. E&OE

# Notes


0 mm
10
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160
170
180
190
200


P3
MAIN DB
POWER METER
Lovato
DMG 9000
HOME
P
PWR
I
V
HOME
LOGO
LOG
ETH
INFO
405.2
406.2
404.3
133.1
106.1
104.5
0255658.042
71.73




# E

# Metering

Interactive Catalogue

# Metering




Energy meters

E-1/9



Multifunction meters

E-2...3/10...12



Power monitoring systems

E-5...6/13...16



Panel-mount digital meters

E-8/19



Panel-mount analogue meters

E-17...18



Current transformers

E-20...25


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DMED110T1



DMED120T1



DMED330



DMECD EXM1001

## Digital meters with LCD screen

**DMED series** of energy meters are digital instruments for the measurement of electrical energy consumption in single and three-phase systems with direct connection or via a current transformer (CT).

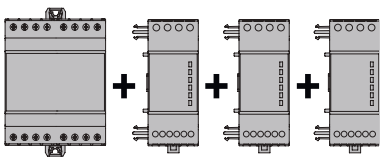
Expandable versions of the DMED models are available including a range of expansion modules for communication and I/O etc.

Typical applications include energy monitoring of individual units in shopping centres, apartments, marinas and factories.

Scan to watch video

| type | input current | description | static pulse output | width in 18 mm | price |
|---|---|---|---|---|---|
| **Single-phase direct connection 40/63A** | | *(modular design DIN-rail mountable)* | | | |
| • Rated supply voltage: | | 220...240 VAC -20…+15% | | | |
| • Input current: | | 40/63A *(direct connection)* | | | |
| • Active energy: | | Class 1 (IEC/EN 62053-21) | | | |
| • Reactive energy: | | Class 2 (IEC/EN 62053-23) | | | |
| **Multi-measurements:** | | Total and partial active, reactive energy, active, reactive power, voltage, current and power factor, hour counter *(exclude DMED100T1)* | | | |
| **DMED100T1** | 40A | direct conn. pulse digital energy meter | 1 | 1 | **1 438.50** |
| **DMED110T1** | 40A | direct conn. static digital energy meter | 1 | 1 | **1 638.00** |
| **DMED111** | 40A | as above with RS-485 interface | – | 1 | **1 890.00** |
| **DMED120T1** | 63A | direct connection digital energy meter | 1 | 2 | **1 974.00** |
| **DMED121** | 63A | as above with RS-485 interface | – | 2 | **3 087.00** |
| **DMED130LM** | 63A | includes **EXM1001** module | – | 4 | **6 153.00** |
| **Three-phase direct connection 80A** | | *(modular design DIN-rail mountable)* | | | |
| **Multi-measurements:** | | Total and partial active and reactive energy, voltage, current, active and reactive power, power factor, hour counter | | | |
| • Graphic backlit LCD screen with 6+1 digits | | | | | |
| • Tariff selection *(2 tariffs)* | | | | | |
| **DMED300T2** | 80A | 3-ph+N digital energy meter | 2 | 4 | **4 389.00** |
| **DMED311** | 80A | as above with RS-485 interface | – | 4 | **4 767.00** |
| **Three-phase CT connection …/5A** | | *(modular design DIN-rail mountable)* | | | |
| **Multi-measurements:** | | Total and partial active and reactive energy, voltage, current, active and reactive power, power factor, hour counter | | | |
| • Backlit LCD screen *(128 x 80 pixels)* | | | | | |
| **DMED310T2*** | 5A | 3-phase digital energy meter | 2 | 4 | **5 019.00** |
| **DMED330** | 1/5A | as above with RS-485 interface | – | 4 | **5 187.00** |
| * *Accepts **EXM...** (up to 3) plug-in optic expansion modules* | | | | | |
| **Data concentrator** | | *(modular design DIN-rail mountable)* | | | |
| DMECD data concentrator designed in combination with energy meters, permitting connection to *(up to 8)* devices. The concentrator is able to count static pulse outputs from the connected energy meters, storing data for viewing on its display or directly on a PC through the built-in RS-485 port. | | | | | |
| • Graphic backlit LCD screen *(128 x 80 pixels)* | | | | | |
| • 8 inputs for pulse count, expandable up to 14 using **EXM…** type expansion modules | | | | | |
| • 8 total and 8 partial energy meters | | | | | |
| • Built-in RS-485 interface (Modbus-RTU or ASCII) | | | | | |
| • Expandable with **EXM...** *(up to 3)* plug-in optic expansion modules *(below)* | | | | | |
| **DMECD** | | data concentrator for up to 8 connected energy meters | – | 4 | **8 337.00** |
| **Expansion modules for DMED310T2, DMECD, DMG300** | | *(DIN-rail mountable)* | | | |
| **EXM8004** | | sealable terminal cover for DMG100/110/200/210/300 | – | | **148.05** |
| **EXM1001** | | 2 opto-isolated digital inputs and 2 relay outputs *(5A 250 VAC)* | 2 | | **4 284.00** |
| **EXM1002** | | 4 opto-isolated digital inputs and 2 relay outputs *(5A 250 VAC)* | 2 | | **7 486.50** |
| **EXM1010** | | opto-isolated USB interface | 2 | | **4 284.00** |
| **EXM1012** | | opto-isolated RS-485 interface | 2 | | **4 126.50** |
| **EXM1013** | | opto-isolated Ethernet interface | 2 | | **6 919.50** |
| **EXM1020** | | opto-isolated RS-485 interface and 2 relay outputs *(5A 250 VAC)* | 2 | | **6 132.00** |
| **EXM1030** | | data storage, clock-calendar (RTC) with backup for data logging | 2 | | **9 996.00** |

Maximum combination for **DMED310T2**





Above ZAR prices do not include VAT. E&OE




**DMG series** digital multifunction meters and power analysers are equipped with a digital LCD providing extremely clear, intuitive and flexible viewing of all electrical parameters in an installation.

- Modular DIN-rail mounting *(aligns with standard MCB 45 mm cut-out)*
- Accuracy:
  - Voltage/Current: ±0.5% *(True RMS measurements)*
  - Power: ±1% f.s.
  - Frequency: ±0.05%
  - Active energy: Class 1 (IEC/EN 62053-21)
  - Reactive energy: Class 2 (IEC/EN 62053-23)

**Main measurements:**
- Voltage: phase, line and system values
- Current: phase values *(neutral current calculated)*
- Power: apparent, active and reactive phase and total values
- Power Factor (PF) per phase and total
- HIGH-LOW-AVERAGE value functions of all measurements
- Maximum demand of power and current values
- Asymmetric voltage and current
- Energy meters for active, reactive and apparent values
- Bidirectional *(import and export of active reactive energy)*


DMG100

| type | description | width in 18 mm | price |
|---|---|---|---|
| **DMG100 series - LCD multifunction meters** | *economical with icon LCD* | | |
| • Auxiliary power supply: | 100...240 VAC / 120...250 VDC | | |
| • Input current: | CT - 1A or 5A | | |
| • Voltage measurement: | 50 - 720 VAC L-L | | |
| • Harmonic analysis of V and I up to the 15th order | | | |
| **DMG100** | modular power analyser | 4 | **4 399.50** |
| **DMG110** | modular power analyser with RS-485 interface | 4 | **5 134.50** |


DMG200

| | | | |
|---|---|---|---|
| **DMG200 series - LCD multifunction meters** | *with graphic backlight LCD* | | |
| *As above **DMG100** but with following additional features:* | | | |
| • Voltage measurement: | 20...830 VAC L-L | | |
| **DMG200** | modular power analyser | 4 | **7 339.50** |
| **DMG210** | modular power analyser with RS-485 interface | 4 | **9 534.00** |


DMG300

| | | | |
|---|---|---|---|
| **DMG300 series** *(expandable)* | *with graphic backlight LCD* | | |
| *As above **DMG200** but with following additional features:* | | | |
| • Voltage measurement: | 20...830 VAC L-L / 10...480 VAC L-N | | |
| • Optional communication ports: | USB, RS-485, Ethernet | | |
| • Harmonic analysis of voltage and current up to the 31° order | | | |
| • Accuracy: Voltage/current: | ±0.2% | | |
| Power/power factor: | ±0.5% | | |
| Frequency: | ±0.05% | | |
| Active energy: | class 0.5S (IEC/EN 62053-22) | | |
| **DMG300*** | modular power analyser | 4 | **11 025.00** |

* *Accepts **EXM...**(up to 3) plug-in optic expansion modules, see page* **E-1**

New

PV

**Photovoltaic (PV) interface protection unit** *(modular DIN-rail mount)*

Designed to ensure that the PV system operates within the required safety parameters and the system from the grid if any anomalies are detected.

These devices continuously monitor the voltage and frequency of the electrical utility and when either the voltage or the frequency are out of the admissible limits, they step in by de-energising a relay output so that an interface switch (IS) *(e.g. contactor)* opens, isolating the PV system from the grid.

- Programmable voltage rating, voltage thresholds, frequency and delays
- Supports EXM series expansion modules (USB, RS-232, RS-485 and Ethernet)
- Compliant standards: VDE-AR-N , VDE-AR-N 4110, VDE-AR-N 4120x, IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4


PMVF81

| type | aux. power supply | inputs | outputs | description | width in 18 mm | |
|---|---|---|---|---|---|---|
| **PMVF81** | 24 - 240 VAC/DC | 5 | 3 | PV grid protection module | 4 | *see **Cat B** for pricing.* |






DMG620

## Flush mounting digital metering instruments *(96 x 96 mm)*

**DMG range** of digital multifunction meters are capable of viewing electrical measurements with high accuracy, permitting complete monitoring of networks.

The meters feature an extended power supply voltage range, high measurement accuracy, expandability and a graphic interactive interface that is easy to use.

**Main measurement functions include:**

- Voltage: phase, line and system values
- Current: phase values (neutral current calculated) via CT 1/5A
- Power: apparent, active and reactive phase and total values
- Power Factor (PF) per phase and total
- Frequency of measured voltage value
- HIGH-LOW-AVERAGE value functions for all measurements
- Maximum demand of power and current values
- Voltage and current asymmetry
- Total harmonic distortion (THD): voltage and current
- Harmonic analysis of voltage and current up to the 15° order
- Energy meters for active, reactive, apparent partial and total values
- Hour counter for programmable total and partial hours

| type | comm. port | optical port | description | expansion slots | price |
|---|---|---|---|---|---|
| **DMG500 series -** "Basic" *multi-measurement instrument with backlit LCD* | | | | | |
| Auxiliary power supply: | | | 100...240 VAC | | |
| Voltage measurement range: | | | 480 VAC (50/60 Hz) | | |
| **DMG500** | no | no | digital panel-mount power analyser | – | **3 822.00** |
| **DMG510** | RS-485 | no | digital panel-mount power analyser | – | **4 399.50** |
| **DMG600 series -** *Multi-measurement instrument with backlit LCD* | | | | | |
| *As above **DMG 500** but with following additional features:* | | | | | |
| Auxiliary power supply: | | | 100...440 VAC / 110...250 VDC | | |
| Voltage measurement: | | | 50...720 VAC L-L | | |
| Rated input current: | | | By external CT 5A or 1A | | |
| Memory: | | | Non volatile memory for data storage | | |
| Display: | | | Wide graphic LCD | | |
| Expansion: | | | Accepts 1 plug-in expansion module | | |
| Measurement accuracy: | | | **DMG600/610** - voltage/current +- 0.5s<br>- Active energy Class 1<br>**DMG615/620** - voltage/current +- 0.2s<br>- Active energy Class 0.5 | | |
| **DMG600** | no | yes | digital panel-mount power analyser | 1 | **4 767.00** |
| **DMG610** | RS-485 | yes | digital panel-mount power analyser | 1 | **5 502.00** |
| **DMG615** | RS-485 | yes | digital panel-mount power analyser | 1 | **5 722.50** |
| **DMG620** | Ethernet | yes | digital panel-mount power analyser | 1 | **9 355.50** |




DMG611...

**DMG611 series -** *Supplied with calibrated Rogowski coils*

- Current reading: Through 3 Rogowski coils *(included)*
- Measurement range: 5...100% Imax

| | | | | | | |
|---|---|---|---|---|---|---|
| **DMG611R0500** | RS-485 | yes | 25...500A | power analyser with Rogowski coils | 1 | **24 990.00** |
| **DMG611R3000** | RS-485 | yes | 100...3000A | power analyser with Rogowski coils | 1 | **26 775.00** |




EXP1004

### Expansion modules and accessories *for above DMG series*

#### Inputs and outputs

| | | | | |
|---|---|---|---|---|
| **EXP1000** | 4 digital opto-isolated inputs | | | **2 425.50** |
| **EXP1001** | 4 static opto-isolated outputs | | | **2 425.50** |
| **EXP1002** | 2 digital inputs and 2 static outputs, opto-isolated | | | **2 898.00** |
| **EXP1003** | 2 output relays *(5A 250 VAC)* | | | **2 898.00** |
| **EXP1004** | 2 Analogue opto-isolated inputs | 0/4 - 20mA or 0-5/10V | *(for DMG75/8/9000)* | **8 694.00** |
| **EXP1005** | 2 Analogue opto-isolated outputs | 0/4 - 20mA or 0-5/10V | *(for DMG75/8/9000)* | **8 694.00** |

#### Communication ports

| | | | | |
|---|---|---|---|---|
| **EXP1010** | opto-isolated USB interface | | | **4 347.00** |
| **EXP1011** | opto-isolated RS-232 interface | | | **4 347.00** |
| **EXP1012** | opto-isolated RS-485 interface | | | **2 194.50** |
| **EXP1013** | opto-isolated Ethernet interface | | | **5 386.50** |
| **EXP1014** | opto-isolated Profibus-DP interface | | *(for DMG75/8/9000)* | **18 060.00** |

#### Communication devices

| | | |
|---|---|---|
| **CX01** | USB/optical communication device for programming, download and diagnostics | **4 368.00** |



Above ZAR prices do not include VAT. E&OE

Lovato electric

# DMG SERIES
# **POWER ANALYSER**




- **WIDESCREEN** COLOUR LCD
- HIGH ACCURACY LEVEL FOR **MEASUREMENTS**
- INTEGRATED COMMUNICATION
- NFC CONFIGURATION
- **STATISTICS ACCORDING TO EN 50160**
- INTEGRATED DATA **MEMORY**
- **WEB** SERVER
- **NFC** CONFIGURATION
- VOLTAGE AND CURRENT HARMONIC ANALYSIS UP TO THE **63rd ORDER**



## **Comparative** table

| | DMG7000 | DMG7500 | DMG8000 | DMG9000 |
|---|---|---|---|---|
| Built-in RS485 port | - | ■ | - | ■ |
| Built-in Ethernet port (with web-server) | - | - | ■ | ■ |
| Ethernet-RS485 gateway function | + EXP1013 + EXP1012 | + EXP1013 | + EXP1012 | ■ |
| Memory for data collection | - | - | ■ | ■ |
| Statistics of network quality according to EN50160 | - | - | - | ■ |
| Neutral current measurement through dedicated CT | - | - | - | ■ |
| Neutral-Earth voltage measurement | - | - | - | ■ |
| Compatibility with EASY BRANCH power monitoring system | - | ■ | ■ | ■ |









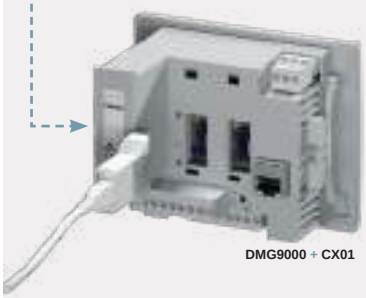

NFC

DMG...



Embedded Web-Server





DMG9000 + CX01

**Power analysers with widescreen colour LCD** *(flush mounting: cut-out 92 x 92 mm)*

**DMG series** of power analysers display electrical values on their large colour LCD with exceptional accuracy for the optimal view of measurements and parameters in a clear, simple and intuitive way.

- Wide colour screen LCD: 4.3" Widescreen (H) 96 x (W) 118 mm colour LCD permits optimal indication of measures and parameters
- Programmable LEDs: 3 programmable front LEDs provide device status at a glance
- NFC configuration: Programmable via NFC (Near Field Communication) or optical ports
- PLC logic: Perform simple automation with built-in PLC logic functionality via Xpress
- Communication: Availability of models with built-in RS485 and Ethernet communication ports
- Expendability: Expandable with up to 3 EXP... series expansion modules *(additional inputs, outputs and communication ports)*
- High accuracy level for measurements: Measurements are verified according to the recognised Intl. standards: IEC 62053-22 (class 0.5s), IEC 62053-24 (class 1) and IEC 61557-12

**Measures and displays**

- Frequency
- Voltage *(phase, phase-to-phase and system)*
- Measurements on 4 quadrants
- Power *(active, reactive and apparent phase and total power)*
- Power factor *(phase and total)*
- Maximum (HIGH), minimum (LOW) and average (AVERAGE) of all measured values
- Phase current (calculated neutral current and measured neutral current on the **DMG9000...**)
- Peak power/current *(max demand)*
- Voltage and current asymmetry and active power unbalance
- Total harmonic distortion *(voltage and current)*
- Voltage and current harmonic analysis up to the 63rd order
- Active, reactive and apparent energy metering *(partial and total)*
- Hour meter *(total and partial, programmable)*

**Operational characteristics**

- Auxiliary power: 100...240 VAC / 110...250 VDC
- Voltage measurement range: 40...830 VAC L-L / 5...480 VAC L-N
- Nominal input current: 5A or 1A with an external CT
- Frequency measurement range: 45...66Hz, 360...440Hz
- Protection rating: IP65 for front panel
- Communications protocols: Modbus-RTU, ASCII and TCP
- Integrated communications ports (RS485 or Ethernet)
- Integrated data memory (DMG8000, DMG9000)

**Web server functional** ***(DMG8000 and DMG9000)***

In addition to having built-in data memory the **DMG8000** and **DMG9000** host an embedded web-server functionality, making it possible to access the devices remotely through a browser.

- **Setting of all parameters:**
  - Programming of all parameters can be done through the browser or front panel
- **Web server and data memory:**
  - Select measures to be recorded *(up to 128)*
  - Set the sampling frequency of historical data
  - Download reports (.CSV file) with the acquired information
  - Sampling 20 measures within a minute, provides 10 days of historical data
- **Measurement view:**
  - Representation of the measured values by means of tables and charts

Scan to watch video

| type | comm. port | description | expansion slots | price |
|---|---|---|---|---|
| **DMG7500 - Power analyser** *with built-in RS-485* (1) | | **IP65** | | |
| • *Compatible with EASY BRANCH power monitoring system* | | | | |
| **DMG7500** | RS-485 | digital panel-mount power analyser | 3 | **9 030.00** |
| **DMG8000 - Power analyser** *with built-in Ethernet and Web Server* (1) | | **IP65** | | |
| • Web Server and memory for data collection<br>• *Compatible with EASY BRANCH power monitoring system* | | | | |
| **DMG8000** | Ethernet / Web Server | digital panel-mount power analyser | 3 | **15 540.00** |
| **DMG9000 - Power analyser** *with built-in Ethernet and RS-485* (1) | | **IP65** | | |
| As above **DMG8000** but with following additional features:<br>• Statistics of network quality according to EN50160<br>• Neutral current measurement through dedicated CT<br>• Neutral-Earth voltage measurement | | | | |
| **DMG9000** | Ethernet + RS-485 | digital panel-mount power analyser | 3 | **21 315.00** |
| **Communication devices** | | | | |
| **CX01** | USB/optical communication device for programming, download and diagnostics | | | **4 368.00** |



Above ZAR prices do not include VAT. E&OE

## EASY BRANCH POWER MONITORING SYSTEM / PLUG & PLAY

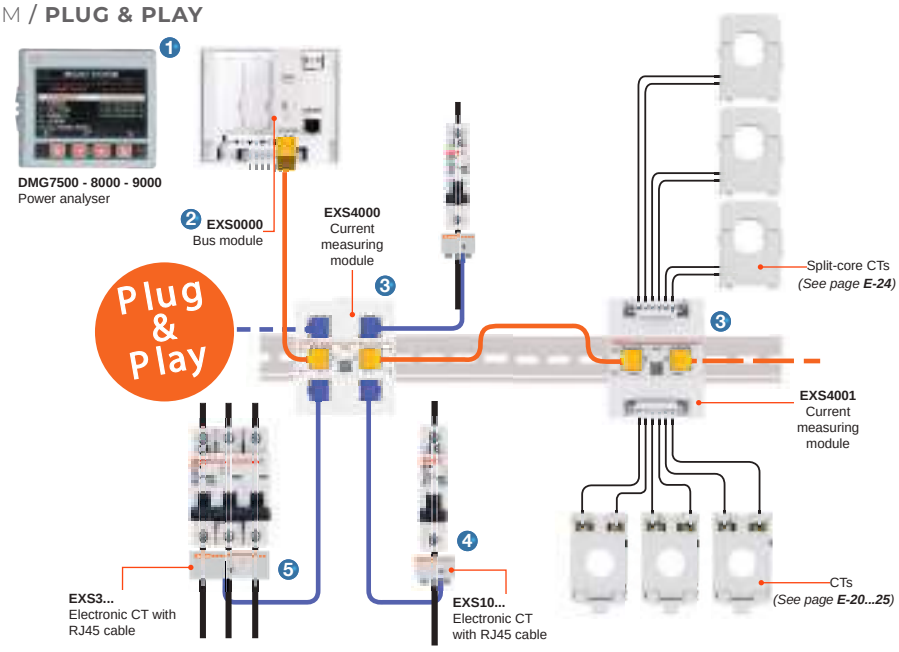
When the parameters of several loads have to be monitored, **EASY BRANCH** power monitoring system is a more efficient and simpler alternative to install than traditional systems which requires an independent instrument for each measuring point.

Distribution panels in shopping centres or in the departments of a production facility represent ideal applications for **EASY BRANCH** system.

**Advantages:**

- 4 components needed
- Reduction of wiring times
- Setting time reduction
- No special cables needed
- Measurement accuracy

Scan to watch video





EXS0000


Correct coupling signalling LED


EXS4001


EXS4000


EXS1063


EXS3063

### EASY BRANCH - Power monitoring system

EASY BRANCH multi-circuit metering system is a modern solution to monitoring more than one load within a single electrical enclosure. Each DIN-rail mounting current metering unit can monitor 2 or 4 measurement points and display the values on the **DMG7500**, **DMG8000** or **DMG9000** power analysers to which it is connected, thus centralising the display of data.

- Up to 33 three-phase loads or 99 single-phase loads
- Current measuring modules are automatically recognized
- Uses standard ethernet cable *(Cat6) - cable not supplied (for RJ45 cables refer to* **E-15***)*

| type | inputs | description | price |
|---|---|---|---|
| **Bus module -** *Expansion module for* ***DMG7500 / 8000 / 9000*** 2 | | | |
| Installed in one of the expansion slots of the power analyser, accepts up to 8 current measuring modules ***(EXS4...)***. When connecting 5 or more ***EXS4...*** current models. *(bus module requires an additional 24 VDC - 200mA power supply)* | | | |
| **EXS0000** | | bus module for EASY BRANCH power monitoring system | **3 937.50** |
| **Current measuring modules -** *Connects to bus module using Ethernet cable (Cat6)* 3 | | | |
| The module collects the measurements of loads monitored by either electronic ***(EXS4000)*** or tradtional ***(EXS4001)*** current transformers. | | | |
| **EXS4000** | 4 | current measuring module for electronic RJ45 CTs | **5 754.00** |
| **EXS4001** | 6 | current measuring module for traditional CTs | **5 754.00** |
| For traditional CTs, *see Current Transformers* | | | |

**Electronic current transformers -** *For use with EXS4000*

The Electronic current transformers are designed to be installed immediately downstream from the circuit breakers. The diameter and pitch of the pass through holes have been designed in line with MCBs.

- Integrated 2 meter RJ45 cable for fast and fail-safe installation

| type | current | dia. Ø | pitch (mm) | description | cable length | price |
|---|---|---|---|---|---|---|
| **Single-phase** 4 | | | | | | |
| **EXS1032** | 32A | 7.8 | 7 mm | single-phase electronic CT | 2m | **1 522.50** |
| **EXS1063** | 63A | 7.8 | 7 mm | single-phase electronic CT | 2m | **1 522.50** |
| **EXS1080** | 80A | 12.2 | 12 mm | single-phase electronic CT | 2m | **1 522.50** |
| **EXS1125** | 125A | 12.2 | 12 mm | single-phase electronic CT | 2m | **1 522.50** |
| **Three-phase** 5 | | | | | | |
| **EXS3032** | 32A | 7.6 | 18 mm | three-phase electronic CT | 2m | **2 247.00** |
| **EXS3063** | 63A | 7.6 | 18 mm | three-phase electronic CT | 2m | **2 247.00** |
| **EXS3080** | 80A | 12.2 | 27 mm | three-phase electronic CT | 2m | **2 247.00** |
| **EXS3125** | 125A | 12.2 | 27 mm | three-phase electronic CT | 2m | **2 247.00** |





DMK80R1



DMK81R1



DMK83R1



DMK75R1

**DMK series -** *Modular digital monitoring devices*

**General features:**

- Modular DIN-rail mounting *(3 modules – 54 mm wide)*
- Auxiliary supply: 220 - 240 VAC
- Memorises minimum and maximum measured values *(since last reset)*
- Instantaneous or preset trip delays *(0 - 900sec)*

**Additional features:**

- One changeover relay output *(8A 250 VAC)*
- Degree of protection: IP40 on front; IP20 on terminals
- Relay output with control and protection functions DMKxxR1
- Measurements are True RMS values *(reliable operation even in the presence of harmonics)*
- Compliant with standards: IEC/EN/BS61010-1, IEC/EN/BS61000-6-2, IEC/EN/BS61000-6-3

| type | description | | monitored range | price |
|---|---|---|---|---|
| **Voltage monitors** | *(measures and displays single and three-phase voltages)* | | | |
| Overvoltage range: | Off / 102...120% | *(delay 0 - 900sec)* | | |
| Undervoltage range: | Off / 70...98% | *(delay 0 - 900sec)* | | |
| Voltage/phase loss or failure: | Off / 5...85% | *(delay 0 - 900sec)* | | |
| Programmable VT ratio : | 1.00...500.0 (accuracy: ±0.25% f.s. ±1digit) | | | |
| **DMK80R1** | 1-phase | over/under voltage meter/monitor | 15 - 660 VAC | **3 024.00** |
| **DMK70R1** | 3-phase | over/under voltage meter/monitor | 15 - 660 VAC | **3 360.00** |
| **DMK70** | 3-phase | voltage meter/monitor | 15 - 660 VAC | **416.80** |
| **Current monitors** | *(measures and displays single and three-phase currents)* | | | |
| Measurement range: | 0.05...5.75A | *(CT ratio: 5...10.000) ±0.5%* | | |
| Overcurrent range: | Off / 102...200% | *(delay 0 - 900sec)* | | |
| Undercurrent range: | Off / 5...98% | *(delay 0 - 900sec)* | | |
| Instantaneous tripping: | Off / 110...600% | | | |
| **DMK81R1** | 1-phase | over/under current meter/monitor | 0.05 - 5.75A | **3 139.50** |
| **DMK71R1** | 3-phase | over/under current meter/monitor | 0.05 - 5.75A | **3 622.50** |
| **Frequency monitors** | *(measures and displays line frequency)* | | | |
| Measurement range: | 15...660V / 50...60 Hz (±10%) | | | |
| **DMK83R1** | frequency meter/monitor | | 45 - 65Hz | **869.80** |
| **Three-phase multi-measurement instrument** | | | | |
| Measurement range: | | | | |
| – Voltage | Phase loss or failure: | Off / 5...85% | 35...660 VAC | |
| | Maximum voltage: | Off / 102...120% | | |
| | Minimum voltage | Off / 70...98% | | |
| | Asymmetry: | Off / 2...20% | | |
| | Phase sequence: | Off / L1-L2-L3 / L3-L2-L1 | | |
| – Current | Current loss: | Off / 2...100% | 0.05...5.75A | |
| | Maximum current: | Off / 102...200% | | |
| | Minimum current: | Off / 5...98% | | |
| | Maximum current instantaneous trip: | Off / 110...600% | | |
| – Power | Rated power: | 1...10 000 kW | | |
| | Maximum power: | Off / 101...200% | | |
| | Max power instantaneous trip: | Off / 110...600% | | |
| | Minimum power: | Off / 10...99% | | |
| – Frequency | Maximum frequency: | Off / 101...110% | 45...65Hz | |
| | Minimum frequency: | Off / 90...99% | | |
| **DMK75R1** | 3-phase | multi-measurement digital meter/monitor | | **5 103.00** |



Above ZAR prices do not include VAT. E&OE





DMK00R1

**DMK series -** *Panel-mount digital monitoring devices*

**General features:**

- Panel-mount *(H) 48 x (W) 96 mm*
- Auxiliary supply: 220 - 240 VAC
- Memorises minimum and maximum measured values *(since last reset)*
- Instantaneous or preset trip delays (0 - 900sec)

**Additional features:**

- One changeover relay output (8A 250 VAC)
- Degree of protection: IP54 on front; IP20 on terminals
- Relay output with control and protection functions DMKxxR1
- Measurements are True RMS values *(provide for reliable operation even in the presence of harmonics)*
- Compliant with standards: IEC/EN/BS61010-1, IEC/EN/BS61000-6-2, IEC/EN/BS61000-6-3 and UL 508



DMK10R1

| type | description | output | monitored range | price |
|---|---|---|---|---|
| **Voltage monitors** | *(panel-mounting 48 x 96 mm)* | | | |
| Voltage measurement range: | 15...660 VAC | | | |
| Operating frequency range: | 45...65Hz | | | |
| Programmable VT ratio: | 1.00...500.0 | | | |
| Accuracy: | ±0.25% f.s. ±1 digit | | | |
| Output: | 1 c/o relay output *(8A - 250 VAC)* time delay | | | |
| Settings: | – Voltage loss or failure: | 5...85% | (0 - 900sec) | |
| | – Maximum voltage: | 102...120% | (0 - 900sec) | |
| | – Minimum voltage: | 70...98% | (0 - 900sec) | |
| **DMK00R1** | 1-phase digital voltage monitor | relay out | 15-660 VAC | **3 402.00** |
| **DMK10R1** | 3-phase digital voltage monitor | relay out | 15-660 VAC | **3 675.00** |
| **Current monitors** | *accuracy: ± 0.5% full scale ± 1 digit* | | | |
| Current measurement range: | 0.05...5.75A | | | |
| Operating frequency range: | 45...65Hz | | | |
| Programmable CT ratio: | 5...10.000 | | | |
| Accuracy: | ±0.5% f.s. ±1 digit | | | |
| Output: | 1 changeover relay output | time delay | | |
| Settings: | – Current loss: | Off / 2...100% | (0 - 900sec) | |
| | – Maximum current: | Off / 102...200% | (0 - 900sec) | |
| | – Instantaneous trip:: | Off / 110...600% | | |
| | – Minimum current: | Off / 5...98% | (0 - 900sec) | |
| **DMK01R1** | 1-phase digital current monitor | relay out | 0.05 - 5.75A | **3 402.00** |
| **DMK11R1** | 3-phase digital current monitor | relay out | 0.05 - 5.75A | **3 675.00** |



DMK01R1

**Three-phase multi-measurement instrument** *combination voltage, current, power factor*

Voltage measurement range: 35...660 VAC
Current measurement range: 0.05...5.75A
Operating frequency range: 45...65Hz
Programmable VT ratio: 1.00...500.0
Programmable CT ratio: 5...10000

**Settings:**

- Voltage
  - Voltage loss or failure: Off / 5...85%
  - Maximum voltage: Off / 102...120%
  - Minimum voltage: Off / 70...98%
  - Asymmetry: Off / 2...20%
  - Phase sequence: Off / L1-L2-L3 / L3-L2-L1
- Current
  - Current loss: Off / 2...100%
  - Maximum current: Off / 102...200%
  - Minimum current: Off / 5...98%
  - Max. current instantaneous trip: Off / 110...600%
- Power factor
  - Maximum power factor: 0.10...1.00
  - Minimum power factor: 0.10...1.00



DMK11R1

| | | | | |
|---|---|---|---|---|
| **DMK16R1** | 3-phase multi-meter and monitor | relay out | multi-meter | **5 985.00** |



4850 5004



4850 5014



4850 3054



4850 5044



4853 0000

## COUNTIS series - Active energy meters (kWh meters)

COUNTIS range of active energy meters are digital instruments designed for the measurement of electrical energy consumption in single and three-phase systems with direct connection or via a current transformer (CT). Suitable for every type of integration, network and load *(direct readings up to 100A and up to 12000A via CT connections).*

**Operational features:**

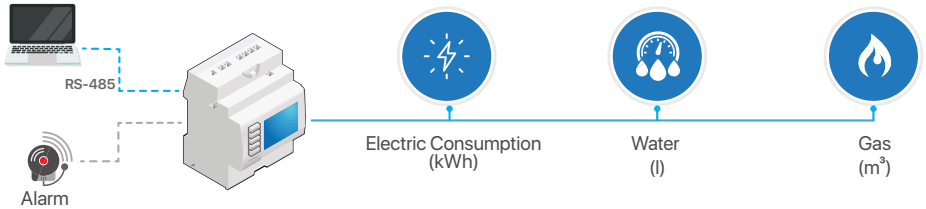
| | |
|---|---|
| • Display: | Backlit LCD |
| • Rated supply voltage: | - 230 VAC *(single-phase)*<br>- 230...400 VAC (three-phase) |
| • Pulse outputs: | Configurable 0.01 / 0.1 / 1 / 10 / 100 kWh/pulse |
| • Communication protocol: | RS-485 / Ethernet |
| • Multi-tariffs: | Manage up to 4 tariffs |
| • Bidirectional metering: | Energy consumption and production |
| • Measurement accuracy: | - voltage +-0.5%<br>- Current +-1%<br>- Frequency +-0.2%<br>- Energy +- 1% |

The COUNTIS range perfectly meets the needs and constraints of every electrical system:

- Industrial buildings
- Retail buildings
- Residential buildings
- Medical centres
- Data centres

| type | model | connection | network | current | comms. | width in 18 mm | price |
|---|---|---|---|---|---|---|---|
| **Single-phase direct connection kWh meters** *(modular design DIN-rail mounting)* | | | | | | | |
| COUNTIS single-phase direct connect modular energy meters measure and display energy (kWh, kVArh and kVA) as well as other measurement values and are suitable for single-phase electrical systems up to 100A. | | | | | | | |
| **4850 5004** | P04 | direct | 1-phase | 45A | RS-485 | 1 | **1 932.00** |
| **4850 3047*** | E17 | direct | 1-phase | 80A | Ethernet | 2 | **13 965.00** |
| **4850 5014** | P14 | direct | 1-phase | 100A | RS-485 | 2 | **3 213.00** |
| * *Ethernet web server embedded* | | | | | | | |
| **Three-phase direct connection kWh meters** *(modular design DIN-rail mounting)* | | | | | | | |
| COUNTIS three-phase direct connect modular energy meters measure and display energy (kWh, kVArh and kVA) as well as other measurement values and are suitable for three-phase electrical systems up to 100A. | | | | | | | |
| **4850 3054*** | E27 | direct | 3-phase | 80A | Ethernet | 4 | **16 695.00** |
| **4850 5034** | P34 | direct | 3-phase | 100A | RS-485 | 4 | **5 145.00** |
| * *Ethernet web server embedded* | | | | | | | |
| **CT operated single or three-phase kWh meters** *(modular design DIN-rail mounting)* | | | | | | | |
| COUNTIS three-phase modular energy meters measure and display energy (kWh, kVArh and kVA) as well as other measurement values. They connect indirectly to the electrical system via 1/5A current transformers (CT). | | | | | | | |
| **4850 5044** | P44 | CT (1/5A) | 3-phase | 12000A | RS-485 | 4 | **5 460.00** |
| **Pulse concentrator** *(modular design DIN-rail mounting)* | | | | | | | |
| COUNTIS ECi2 multi-utility pulse concentrator allows for up to 7 pulse inputs from water, gas, compressed air and electricity meters to be registered and stored. All data can be centralised via RS-485 communication using Modbus protocol. | | | | | | | |
| • Load curves are available for each of the 7 logical inputs<br>• Partial, total, daily, weekly or monthly kWh or other types of data *(litres, m³…)*<br>• Customisation by selection of the measuring unit: kWh, m³, litres<br>• Generate event alarms *(1 dedicated relay output)*<br>• 230... 400 VAC supply | | | | | | | |
| **4853 0000** | ECi2 | pulse concentrator for up to 7 inputs with RS-485 | | | | 4 | **8 914.50** |

### COUNTIS ECi2 - Pulse concentrator application






Above ZAR prices do not include VAT. E&OE


A-10


A-14


A-20


A-30/41

| Model | A-10 | A-14 | A-20 | A-30/41 |
|---|---|---|---|---|
| **Mounting** | modular DIN-rail *(4x 18mm)* | modular DIN-rail *(4x 18mm)* | panel-mount *(96 x 96mm)* | panel-mount *(96 x 96mm)* |
| **Display** | backlit LCD | backlit LCD | backlit LCD | backlit LCD |
| **Front degree of protection** | IP52 | IP51 | IP52 | IP52 |
| **Aux. power supply** | 110-277 VAC | 50-460 VAC | 110-400 VAC | 110-400 VAC / 12-48 VAC |
| **Current Input** | CT (5A) | CT (5A) | CT (5A) | CT (1A or 5A) |
| **Plug-in expansion modules** | – | – | 2 | 4 |
| **Inputs** | 1 | – | up to 6 | up to 6 |
| **Outputs** | 1 | – | up to 2 | up to 6 |
| **Alarms** | yes | – | yes* | yes* |
| **Communication** | RS-485 | RS-485 | RS-485* | RS-485 / ETHERNET / PROFIBUS* |
| **Multi-Tariff** | 2 | 4 | – | – |
| **Detects wiring errors** | yes | yes | yes | yes |

* *with optional plug-in module*


4825 0401

## DIRIS series - Multifunction meters

DIRIS series of modular and panel-mounted single circuit multifunction meters are Power Monitoring Devices (PMD) designed to measure, monitor and display electrical values with in single-circuit Low Voltage (LV) networks.

| type | auxiliary power supply | width in 18.5 mm | description | price |
|---|---|---|---|---|

### DIRIS A-10 multifunction meter *(modular design DIN-rail mounting)*

The **DIRIS A-10** is a modular multifunction meter for measuring electrical values in low voltage networks. It allows all electrical parameters to be displayed and utilised for communication and/ or output functions.

**Multi-measurement**

- Current: I1 / I2 / I3 / In
- Voltage: V1 / V2 / V3 / Vn / U12 / U23 / U31
- Frequency: 45...65Hz
- Power: P1 / P2 / P3 / ∑P / Q1 / Q2 / Q3 / ∑Q / S1 / S2 / S3 / ∑S
- Power Factor: PF1 / PF2 / PF3 / ∑PF
- Energy: Active +/- kWh / Reactive +/- kVARh
- Harmonics: THD for I / V (up to 51st)
- Accuracy (Active Energy): Class 0.5 S
- Accuracy (Reactive Energy): Class 2
- Hour Meter: Yes

| | | | | | |
|---|---|---|---|---|---|
| **4825 0401** | 110 - 277 VAC | 4 | A10 | modular multifunction meter + RS-485 | **5 323.50** |


4825 0020

### DIRIS A-14 multifunction meter *(modular design DIN-rail mounting)*

The **DIRIS A-14** is a modular multifunction meter for measuring electrical values in low voltage networks. It allows all electrical parameters to be displayed and utilised for communication and/ or output functions.

**Multi-measurement**

- Current: I1 / I2 / I3 / In
- Voltage: V1 / V2 / V3 / Vn / U12 / U23 / U31
- Frequency: 50/60Hz
- Power: ∑P / ∑Q / ∑S
- Power Factor: ∑PF
- Energy: Active +/- kWh / Reactive +/- kVARh
- Harmonics: THD for I / V (up to 63rd)
- Accuracy (Active Energy): Class 0.5 S
- Accuracy (Reactive Energy): Class 2

| | | | | | |
|---|---|---|---|---|---|
| **4825 0020** | 50 to 460 VAC +/- 15% | 4 | A14 | as above + MID | **7 465.50** |


4825 0402

## DIRIS A-20 multifunction meter

**DIRIS A-20** is a panel-mount performance metering and monitoring device which ensures the user has access to all the measurements required for successfully carrying out energy efficiency projects and monitoring electrical distribution systems.

**Multi-measurement**

- Current: I1 / I2 / I3 / In
- Voltage: V1 / V2 / V3 / Vn / U12 / U23 / U31
- Frequency: 45...65Hz
- Power: P1 / P2 / P3 / ∑P / Q1 / Q2 / Q3 / ∑Q / S1 / S2 / S3 / ∑S
- Power Factor: PF1 / PF2 / PF3 / ∑PF
- Energy: Active +/- kWh / Reactive +/- kVARh
- Harmonics: THD for I / V *(up to 51st)*
- Accuracy *(Active Energy)*: Class 0.5 S
- Accuracy *(Reactive Energy)*: Class 2
- Hour Meter: Yes

| type | auxiliary power supply | number plug-in modules | | description | price |
|---|---|---|---|---|---|
| **4825 0402** | 110 - 400 VAC | 1 | A20 | 96 x 96 mm panel-mount multifunction meter | **5 617.50** |

## DIRIS A-30/41 multifunction meter


4825 0403

The **DIRIS A-30 / A-41** ranges of panel-mount performance metering and monitoring devices provide users with all the measurements required for successfully completing energy efficiency projects and monitoring electrical distribution systems.

**Multi-measurement**

- Current: I1 / I2 / I3 / In
- Voltage: V1 / V2 / V3 / Vn / U12 / U23 / U31
- Frequency: 45...65Hz
- Power: P1 / P2 / P3 / ∑P / Q1 / Q2 / Q3 / ∑Q / S1 / S2 / S3 / ∑S
- Power Factor: PF1 / PF2 / PF3 / ∑PF
- Energy: Active +/- kWh / Reactive +/- kVARh / Apparent kVAh
- Harmonics: THD for I / V *(up to 63rd)*
- Accuracy *(Active Energy)*: Class 0.5 S
- Accuracy *(Reactive Energy)*: Class 2
- Hour Meter: Yes

| | | | | | |
|---|---|---|---|---|---|
| **4825 0403** | 110 - 400 VAC | 4 | A30 | 96 x 96 mm panel-mount multifunction meter | **9 922.50** |
| **4825 0404** | 110 - 400 VAC | 4 | A41 | as above with neutral monitoring | **14 385.00** |
| **4825 0405** | 12 - 48 VDC | 4 | A30 | 96 x 96 mm panel-mount multifunction meter | **15 645.00** |

## Accessories for DIRIS meters


4825 0094

| type | function | description | for model | price |
|---|---|---|---|---|
| **Plug-modules** | | *(for customisation or upgrading of meters)* | | |
| **4825 0080** | 1 x output | plug-in optional modules | A20 | **631.05** |
| **4825 0082** | RS-485 Modbus comms | plug-in optional modules | A20 | **906.15** |
| **4825 0090** | 2 configurable pulse outputs | plug-in optional modules | A30/41 | **906.15** |
| **4825 0092** | RS-485 Modbus comms | plug-in optional modules | A30/41 | **1 575.00** |
| **4825 0093** | 2 Analogue outputs | plug-in optional modules | A30/41 | **2 551.50** |
| **4825 0094** | 2 inputs / 2 outputs | plug-in optional modules | A30/41 | **1 428.00** |
| **4825 0205** | Sub D9 PROFIBUS DP comm | plug-in optional modules | A30/41 | **10 258.50** |
| **4825 0097** | Memory | plug-in optional modules | A30/41 | **1 291.50** |
| **4825 0203** | Ethernet comm. + Modbus TCP | plug-in optional modules | A30/41 | **6 279.00** |
| **4825 0204** | Ethernet + RS-485 Modbus TCP | plug-in optional modules | A30/41 | **5 869.50** |
| **4825 0089** | IP65 protection cover | for DIRIS meters | A30/41 | **425.25** |

### DIRIS A... – Multifunction meters

**Multifunction meter +** optional plug-in modules for customisation or upgrading of meters.


4825 0403


1 output


Communication


Memory



Above ZAR prices do not include VAT. E&OE



A40 +TE+TR+TF

**DIRIS A40** series of panel-mount Power Monitoring Devices (PMD) offers a range of metering options including Webview functionality. Designed to work with smart current sensors of different formats *(solid-core TE, split-core TR/iTR and rogowski coil TF).*

**Measurements and functions:**

- Voltage: V1 / V2 / V3 / Vn and U12 / U23 / U31
- Current: I1 / I2 / I3 / In
- Frequency: 45...65Hz
- Power: P1 / P2 / P3 / ∑P / Q1 / Q2 / Q3 / ∑Q / S1 / S2 / S3 / ∑S
- Power factor: PF1 / PF2 / PF3 / ∑PF
- Energy: Active +/- kWh / Reactive +/- kVARh / Apparent kVAh
- Harmonic analysis: THD for current and voltage *(up to 63rd)*
- Communication: RS-485 / Ethernet / Profibus
- Inputs: 3 digital inputs *(pulse metering, status checking)*
- Outputs: 2 outputs *(alarms or pulses)*
- Alarms for all electrical values, events and input status changes

**Measurement accuracy:**

- Overall accuracy: Class 0.2 DIRIS A-40
- Accuracy of active energy: Class 0.5 with TE, TF/iTR and Class 1 with TR
- Accuracy of reactive energy: Class 0.5 with TE, TF/iTR and Class 1 with TR



4825 ...



4829 0000

| type | Aux. power supply | inputs | outputs | description | price |
|---|---|---|---|---|---|
| **DIRIS A40 - Multifunction meter** | | | | *92 x 92 mm panel-mount 68 mm deep* | |
| **4825 0500** | 110 - 400 VAC | 3 | 2 | panel-mount meter with RS-485 Modbus | **14 805.00** |
| **4825 0501*** | 110 - 400 VAC | 3 | 2 | as above with Ethernet Modbus | **21 840.00** |
| **4825 0502** | 110 - 400 VAC | 3 | 2 | as above with Profibus | **23 100.00** |

* *Modbus TCP, Modbus RTU, BacNet, SMTP, SNTP*

| | | | | | |
|---|---|---|---|---|---|
| **DIRIS B30 - Multifunction meter** | | | | *(modular design DIN-rail mounting)* | |
| The **DIRIS B30** is a modular format PMD that communicates via RS-485. 4 x RJ12 independent current inputs allow it to manage several types and number of circuits. | | | | | |
| **4829 0000** | 110 - 230VAC | 2 | – | modular multifunction meter with RS-485 | **11 130.00** |

**Accessories for DIRIS B30**

| | | | | |
|---|---|---|---|---|
| **4829 0200** | D30 single point display for B30 | *(panel-mount)* | 96 x 96 | **4 389.00** |
| **4829 0280** | RJ9 cable for above D30 display unit | | 1.5 m | **152.25** |
| **4829 0281** | RJ9 cable for above D-30 display unit | | 3.0 m | **250.95** |

**Current sensors** *for above A40 / B30 multifunctional meter*

Various types of current sensors can be connected to the DIRIS A40 / B30: solid-core (TE), split-core (TR / iTR) or Rogowski (TF). A quick RJ12 connection makes wiring easy and reliable and prevents wiring errors.



TE...



TR...



TF...

| type | model | actual range current (A) | description | pitch (mm) | hole size (mm) | price |
|---|---|---|---|---|---|---|
| **TE - Solid current sensors** | | | class 0.5 | | | |
| **4829 0500** | TE-18 | 0.1…24 | solid current sensor | 18 | Ø 8.6 | **709.80** |
| **4829 0501** | TE-18 | 0.5…75 | solid current sensor | 18 | Ø 8.6 | **728.70** |
| **4829 0502** | TE-25 | 0.8…192 | solid current sensor | 25 | 13.5 ■ | **819.00** |
| **4829 0503** | TE-35 | 1.26…300 | solid current sensor | 35 | 21 ■ | **912.45** |
| **4829 0504** | TE-45 | 3.2…756 | solid current sensor | 45 | 31 ■ | **1 281.00** |
| **4829 0505** | TE-55 | 8…1200 | solid current sensor | 55 | 41 ■ | **1 648.50** |
| **4829 0506** | TE-90 | 12…2400 | solid current sensor | 90 | 64 ■ | **2 992.50** |
| **TR - Split-core current sensors** | | | class 1 | | | |
| **4829 0555** | TR-10 | 0.5…75 | split-core current sensors | – | Ø 10 | **2 215.50** |
| **4829 0556** | TR-14 | 0.8...192 | split-core current sensors | – | Ø 14 | **2 646.00** |
| **4829 0557** | TR-21 | 1.26...300 | split-core current sensors | – | Ø 21 | **3 370.50** |
| **4829 0558** | TR-32 | 3.2...720 | split-core current sensors | – | Ø 32 | **3 832.50** |
| **iTR - Split-core current sensors** | | | class 0.5 *(intelligent)* | | | |
| **4829 0655** | iTR-10 | 0.5...75 | split-core current sensors | – | Ø 10 | **3 328.50** |
| **4829 0656** | iTR-14 | 0.8…192 | split-core current sensors | – | Ø 14 | **3 969.00** |
| **4829 0657** | iTR-21 | 1.26…300 | split-core current sensors | – | Ø 21 | **5 061.00** |
| **4829 0658** | iTR-32 | 3.2…720 | split-core current sensors | – | Ø 32 | **5 743.50** |
| **TF - Flexible current sensors** *(Rogowski coil)* | | | | | | |
| **4829 0574** | TF-80 | 3...720 | flexible current sensor | – | Ø 80 | **7 812.00** |
| **4829 0575** | TF-120 | 8...2400 | flexible current sensor | – | Ø 120 | **8 379.00** |
| **4829 0577** | TF-300 | 32...7200 | flexible current sensor | – | Ø 300 | **9 282.00** |

*For RJ12 cables to connect **A40/B30** PMD to **TE/TR/iTR/TF** current sensors refer to pg **E-15***

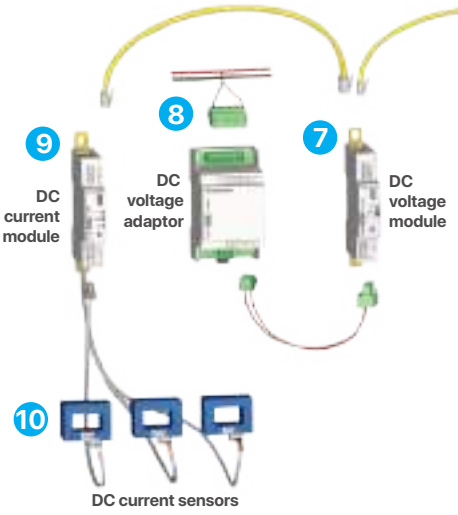
**DIRIS Digiware** system is a multi-circuit AC or DC power monitoring solution that is the most effective solution for monitoring multi-point electrical installation performance. With precise sensing, virtual monitoring and auto-correct technology.
This system offers accurate and reliable metering, monitoring and reporting of electrical systems.

Scan to watch video

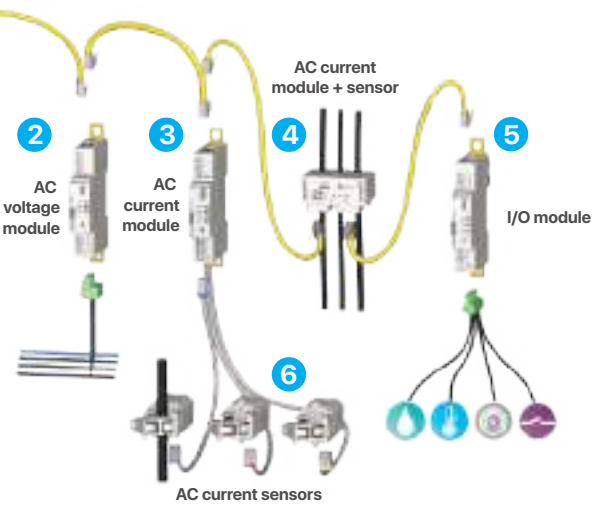
- Accuracy as per standard IEC 61557-12 (Class 0.5)
- Implementation in a quarter of the time vs existing metering technologies
- Installation of measurement modules and current sensors at the closest point to the load
- Can monitor several circuits via a single current measurement module thanks to independent current inputs
- Compact and flexible design: suitable for new and existing installations, including panels with space restrictions
- The system is composed of several modules: control interface, voltage acquisition module, current acquisition modules but also closed, split-core or flexible current sensors

## Build your system :

### DC SYSTEM




### AC SYSTEM





4829 0101


4829 0203


4854 0020

| type | model | description | width in 18mm | price |
|---|---|---|---|---|
| **Data centralisation, system interface and display modules** | | | | |
| • Power supply 24 VDC *(required, see power supply)* | | | | |
| • Communication via RS-485 Modbus and Digiware BUS | | | | |
| **C-31 Data centralisation** 1 | | *(without local display)* | | |
| • Centralises all of the Digiware systems data, accessible via RS-485 | | | | |
| **4829 0101** | C-31 | modular centralisation unit without display + RS-485 | 1 | **3 423.00** |
| **D50/70 Data centralisation and display** 1 | | *(panel-mount 96 x 96mm)* | | |
| • High-resolution LCD | | | | |
| • Local view of data from the Digiware Bus | | | | |
| • Keys on the front face for direct access to measurement data,device configuration etc. | | | | |
| • Can display electrical measurements from both AC and DC systems simultaneously via Webview | | | | |
| **4829 0204** | D-50 | centralisation unit with multi-point display + Modbus TCP | | **8 799.00** |
| **4829 0203** | D-70 | centralisation unit with multi-point display + Ethernet + webserver | | **42 735.00** |
| **4829 0222** | M-70 | as above without display and modular DIN-rail mount | 5 | **31 395.00** |
| **C-32 Range extending repeater** | | | | |
| • Required when Digiware bus length exceeds 100m | | | | |
| • Maximum bus length 300m *(2 repeaters)* | | | | |
| • Power supply 24 VDC *(required, see power supply)* | | | | |
| **4829 0103** | range extending repeater | | 1 | **4 095.00** |
| *For RJ45 connecting cables for above see **E-15*** | | | | |
| **DATALOG H80 - Webview datalogger** | | | | |
| • Connect energy meters and multi-function measurement units to an Ethernet network | | | | |
| • Real-time monitoring of all measurements and breakdown of energy consumption up to 100 devices | | | | |
| **4854 0020** | datalogger with webview 4 Ethernet ports and up to 100 licences | | | **92 190.00** |



Above ZAR prices do not include VAT. E&OE


4829 0106

## AC voltage measurement modules ❷ – *Single voltage measurement point for the entire system*

- Three-phase voltage and frequency monitoring
- RJ45 bus allows you to measure voltage as well as supply power to all connected devices
- A complete, dedicated solution for metering, voltage monitoring and quality analysis of the AC voltage

| type | description | width in 18 mm | price |
|---|---|---|---|
| **U-10 metering module** | | | |
| **4829 0105** | modular AC voltage measurement metering module | 1 | **3 832.50** |
| **U-20 monitoring module** *(as above but with additional 3ph THDu monitoring)* | | | |
| **4829 0106** | modular AC voltage measurement monitoring module | 1 | **4 735.50** |
| **U-30 analysis module** *(all electrical parameters including history of average values)* | | | |
| **4829 0102** | modular AC voltage measurement analysis module | 1 | **5 817.00** |

## AC current measurement modules ❸

Allocates the load to be measured or to monitor independent current inputs i.e three-phase load and 3 single-phase loads.

- Metering: ± kWh, ± kvarh, kVAh
- Multi-measurement: I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF
- Wiring errors are also prevented and implementation is simplified
- **RJ45** and **RJ12** rapid connection and configure connected current sensors


4829 0112

| type | description | current Inputs | width in 18mm | price |
|---|---|---|---|---|
| **I-30/60 metering modules** | | | | |
| **4829 0110** | I-30 modular current measurement metering module | 3 | 1 | **3 234.00** |
| **4829 0112** | I-60 modular current measurement metering module | 6 | 2 | **6 846.00** |
| **I-31/61 metering and load curve modules** | | | | |
| **4829 0111** | I-31 modular current measurement metering module | 3 | 1 | **5 712.00** |
| **4829 0113** | I-61 modular current measurement metering module | 6 | 2 | **9 565.50** |
| **I-35/45 analysis module** *(all electrical parameters including history of average values)* | | | | |
| **4829 0130** | I-35 modular current measurement analysis module | 3 | 1 | **6 226.50** |
| **4829 0131** | I-45 modular current measurement analysis module | 4 | 1.5 | **15 015.00** |

## AC current measurement modules with built-in current sensors ❹

**DIRIS Digiware S** is a power metering and monitoring service with 3 integrated current sensors enabling the measurement of one three-phase or three single-phase circuits up to 63 A.

- Metering: ± kWh, ± kvarh, kVAh
- Can be mounted upstream or downstream of the protective device
- Advanced monitoring via **VirtualMonitor** *(position, trip etc. without using auxiliary)*
- Matching the pitch of protective devices up to 63A, solving issues of space constraints


4829 0160

| | | | | |
|---|---|---|---|---|
| **4829 0160** | S-130 modular current measurement metering module | 3 | – | **9 523.50** |
| **4829 0161** | S-135 modular current measurement analysis module | 3 | – | **12 180.00** |
| **4829 0162** | S-Datacenter modular 3 x single-phase monitoring | 3 | – | **8 809.50** |
| **Accessories for DIRIS Digiware S modules** | | | | |
| **4829 0195** | Mounting clip for above Digiware S modules | pack | (x 10) | **836.85** |
| **4829 0196** | Holding clip for above Digiware S modules | pack | (x 10) | **967.05** |
| **4829 0189** | Flat RJ45 Digiware bus connection cable | | 0.06 m | **191.10** |

*For longer length connecting cables refer to **E-15***

## Digital and analogue input / output modules ❺

The **DIRIS Digiware I/O** *(input/output)* modules can be easily added anywhere within the measurement system thanks to a quick **RJ45** connection.

The **I/O-10** modules have 4 digital inputs and 2 digital outputs, which can be used:
- To monitor changes of status of an input or to collect pulses from multi-fluid meters *(water, gas…)*
- To remotely command devices by sending a digital output signal
- Inputs/Connection: 12 VDC 3mA, Outputs: 12 - 48 VDC, 12 - 24 VAC 50mA / screw terminal blocks

The **I/O-20** modules have 2 analogue inputs allowing:
- To collect data from analogue sensors, e.g. pressure, humidity, temperature, levels *(fuel…)*
- To monitor levels by setting up alarms on chosen thresholds
- Inputs/Connection: 0/4-20 mA, 200 ohm / screw terminal blocks


4829 0161

| | DI | DO | AI | | | |
|---|---|---|---|---|---|---|
| **4829 0140** | 4 | 2 | – | IO-10 digital input/output module | 1 | **5 376.00** |
| **4829 0145** | – | – | 2 | IO-20 analogue input modules | 1 | **7 056.00** |






















## AC sensors (6)

Current sensors can be connected to the DIRIS Digiware system via a rapid RJ12 and various accessories are available, permitting installation in all panel configurations.

- Plug and play RJ12 connections *(for ease of wiring preventing wiring errors)*
- Automatic detection of sensor type and current rating
- Class 0.5 from 2% to 120% of nominal current *(as per standard IEC 61557-12)*

| type | model | actual range current (A) | description | pitch (mm) | hole size (mm) | price |
|---|---|---|---|---|---|---|
| **TE - Solid current sensors** | | | class 0.5 | | | |
| **4829 0500** | TE-18 | 0.1…24 | solid current sensor | 18 | Ø 8.6 | **709.80** |
| **4829 0501** | TE-18 | 0.5…75 | solid current sensor | 18 | Ø 8.6 | **728.70** |
| **4829 0502** | TE-25 | 0.8…192 | solid current sensor | 25 | 13.5 ■ | **819.00** |
| **4829 0503** | TE-35 | 1.26…300 | solid current sensor | 35 | 21 ■ | **912.45** |
| **4829 0504** | TE-45 | 3.2…756 | solid current sensor | 45 | 31 ■ | **1 281.00** |
| **4829 0505** | TE-55 | 8…1200 | solid current sensor | 55 | 41 ■ | **1 648.50** |
| **4829 0506** | TE-90 | 12…2400 | solid current sensor | 90 | 64 ■ | **2 992.50** |
| **TR - Split-core current sensors** | | | class I | | | |
| **4829 0555** | TR-10 | 0.5…75 | split-core current sensors | – | Ø 10 | **2 215.50** |
| **4829 0556** | TR-14 | 0.8...192 | split-core current sensors | – | Ø 14 | **2 646.00** |
| **4829 0557** | TR-21 | 1.26...300 | split-core current sensors | – | Ø 21 | **3 370.50** |
| **4829 0558** | TR-32 | 3.2...720 | split-core current sensors | – | Ø 32 | **3 832.50** |
| **iTR - Split-core current sensors** | | | class 0.5 *(intelligent)* | | | |
| **4829 0655** | iTR-10 | 0.5...75 | split-core current sensors | – | Ø 10 | **3 328.50** |
| **4829 0656** | iTR-14 | 0.8…192 | split-core current sensors | – | Ø 14 | **3 969.00** |
| **4829 0657** | iTR-21 | 1.26…300 | split-core current sensors | – | Ø 21 | **5 061.00** |
| **4829 0658** | iTR-32 | 3.2…720 | split-core current sensors | – | Ø 32 | **5 743.50** |
| **TF - Flexible current sensors** *(Rogowski coil)* | | | | | | |
| **4829 0574** | TF-80 | 3...720 | flexible current sensor | – | Ø 80 | **7 812.00** |
| **4829 0575** | TF-120 | 8...2400 | flexible current sensor | – | Ø 120 | **8 379.00** |
| **4829 0577** | TF-300 | 32...7200 | flexible current sensor | – | Ø 300 | **9 282.00** |

## Cables and accessories for current sensors

| type | model | description | cable length (mm) | pack size (mm) | price |
|---|---|---|---|---|---|
| **RJ12 current sensor connection cables** *(interconnection)* | | | | | |
| • Automatic detection of current sensor ratings<br>• Disconnection of the current sensor secondary under load | | | | | |
| **4829 0581** | RJ12 | AC current sensor connection cable | 0.2 m | 3 x cables | **271.95** |
| **4829 0595** | RJ12 | AC current sensor connection cable | 0.5 m | 3 x cables | **351.75** |
| **4829 0583** | RJ12 | AC current sensor connection cable | 1.0 m | 3 x cables | **435.75** |
| **4829 0584** | RJ12 | AC current sensor connection cable | 2.0 m | 3 x cables | **691.95** |
| **4829 0597** | RJ12 | AC current sensor connection cable | 0.5 m | 6 x cables | **676.20** |
| **4829 0593** | RJ12 | AC current sensor connection cable | 1.0 m | 6 x cables | **852.60** |
| **4829 0594** | RJ12 | AC current sensor connection cable | 2.0 m | 6 x cables | **1 197.00** |
| **4829 0602** | RJ12 | AC current sensor connection cable | 5.0 m | 1 x cables | **506.10** |
| **4829 0782** | RJ12 | DC molex current sensor conn. cable | 0.3 m | 3 x cables | **512.40** |
| **4829 0783** | RJ12 | DC molex current sensor conn. cable | 0.5 m | 3 x cables | **548.10** |
| **4829 0784** | RJ12 | DC molex current sensor conn. cable | 1.0 m | 3 x cables | **665.70** |
| **4829 0785** | RJ12 | DC molex current sensor conn. cable | 2.0 m | 3 x cables | **838.95** |
| **4829 0786** | RJ12 | DC molex current sensor conn. cable | 5.0 m | 1 x cable | **521.85** |
| **RJ45 current sensor connection cables** *(bus connection)* | | | | | |
| • Interconnection of I and U modules via Digiware Bus | | | | | |
| **4829 0181** | RJ45 | Digiware bus AC connection cable | 0.1 m | – | **115.50** |
| **4829 0182** | RJ45 | Digiware bus AC connection cable | 0.5 m | – | **143.85** |
| **4829 0183** | RJ45 | Digiware bus AC connection cable | 1.0 m | – | **191.10** |
| **4829 0184** | RJ45 | Digiware bus AC connection cable | 2.0 m | – | **292.95** |
| **4829 0185*** | RJ45 | AC current sensor cable + 50 connectors | 50 m | *(cable roll)* | **10 605.00** |
| * *Maximum cable distance between current measurement modules and current sensors is 10 m* | | | | | |
| **4829 0599** | 5A/CT adapter *(measurement >1000 A)* (6) | | | | **1 281.00** |
| **4829 0598** | coupling link for interconnecting sensors staggered or linear mounted | | | *(30pcs)* | **943.95** |
| **4829 0600** | sealable cover *(guarantees the immunity of sensor connection)* | | | *(20pcs)* | **813.75** |



Above ZAR prices do not include VAT. E&OE


4829 0150

## DC voltage measurement modules 7

DIRIS Digiware U-31/32dc module measures DC voltage for the entire system. It measures up to 180 VDC with a direct connection and is therefore compatible with typical nominal voltages (24 VDC, 48 VDC)

- Voltage measurement accuracy: Class 0.5
- 1 single voltage measurement point for the entire system
- Voltage adaptors makes the system compatible with all voltage levels up to 1650 VDC
- RJ45 bus allows you measurement of voltage as well as supply power to all connected devices

| type | range | voltage | description | width in 18 mm | price |
|---|---|---|---|---|---|
| **U-31dc metering module** | | | | | |
| **4829 0150** | 19...60 VDC | | modular voltage measurement metering module | 1 | **6 783.00** |
| **U-32dc metering module** | | | | | |
| **4829 0151** | 38...180 VDC | | modular voltage measurement metering module | 1 | **8 620.50** |
| **DC voltage adaptor 8** | | | | | |
| **4829 0153** | 200...600 VDC | | U500DC modular voltage adaptor metering module | 3 | **4 189.50** |
| **4829 0154** | 400...1200 VDC | | U1000DC modular voltage adaptor metering module | 3 | **6 279.00** |
| **4829 0155** | 1200...1650 VDC | | U1500DC modular voltage adaptor metering module | 3 | **8 368.50** |


4829 0153

## DC current measurement modules 9

Allocates the load to be measured or to monitor independent current inputs. Measurement of up to 3 DC circuits per Idc modules.

**General features:**

- Metering: ± kWh
- Accuracy of current measurement: Class 0.5
- Multi-measurement: Idc, Udc, Iripple, Irms
- Quick RJ45 connection between modules and RJ12-Molex to current sensors


4829 0156

| type | description | current Inputs | width in 18 mm | price |
|---|---|---|---|---|
| **I-30dc metering modules** | | | | |
| **4829 0156** | I-30dc modular current measurement metering module | 3 | 3 | **7 360.50** |
| **I-35dc metering and analysis module** | | | | |
| **4829 0157** | I-35dc modular current measurement analysis module | 3 | 3 | **11 655.00** |

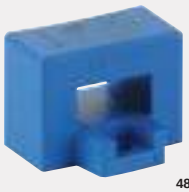
## DC sensors 10

The DC current sensors measure the DC load currents of an electrical installation and transmit information to the Idc measurement modules via an RJ12 to molex cable on the sensor side.

The range comprises solid-core and split-core sensors *(Open-loop Hall effect)* ranging from 50 to 5000A in various sizes allowing them it be used in new or existing electrical installations.

**General features:**

- Automatic detection of sensor type and current rating
- Up to 3 different DC sensors can be connected to the same Idc module
- Accuracy of current measurement <1%
- Plug and play RJ12 molex cables *(for ease of wiring - preventing wiring errors)* *see page **E-15***


4829 0700

| type | frame size | nominal current (A) | description | pitch (mm) | hole size (mm) | price |
|---|---|---|---|---|---|---|
| **DC solid-core current sensors** | | | *(frame size 1)* | | | |
| **4829 0700** | 1 | 50A | DC solid-core current sensor | 18 | ■ 10.4 x 20.4 | **1 092.00** |
| **4829 0701** | 1 | 100A | DC solid-core current sensor | 25 | ■ 10.4 x 20.4 | **1 092.00** |
| **4829 0702** | 1 | 200A | DC solid-core current sensor | 35 | ■ 10.4 x 20.4 | **1 092.00** |
| **4829 0703** | 1 | 300A | DC solid-core current sensor | 45 | ■ 10.4 x 20.4 | **1 092.00** |
| *Up to 5000A available on special request.* | | | | | | |
| **DC split-core current sensors** | | | *(frame size 1)* | | | |
| **4829 0750** | 1 | 50A | DC split-core current sensor | 0 | Ø 21 | **8 452.50** |
| **4829 0751** | 1 | 100A | DC split-core current sensor | 0 | Ø 21 | **8 452.50** |
| **4829 0752** | 1 | 200A | DC split-core current sensor | 0 | Ø 21 | **8 452.50** |
| *Up to 2000A available on special request.* | | | | | | |


4829 0750

## Analogue panel instruments

Designed to measure an extensive range of electrical and electronic parameters.

**Benefits:** Low cost, ease of installation, minimal training, low maintenance, reasonable accuracy.
**Applications:** Switchgear distribution systems, generator sets, control panels, energy and building management, utility power monitoring, process control and motor control.


SF4-2010A


SF9-3MD5A


SF9-3CM5A


SF7-8/5A


SF7-3CM5A

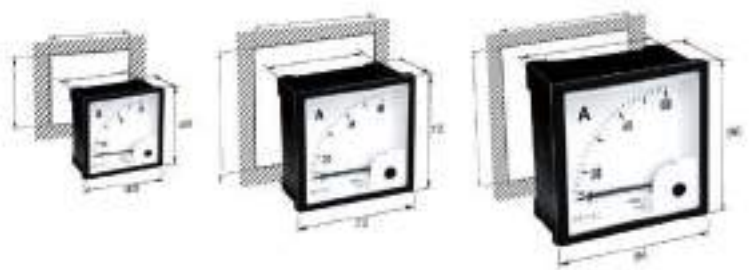
| type | range | supply | description | frame size mm² 48 x 48 | 72 x 72 | 96 x 96 | price |
|---|---|---|---|---|---|---|---|
| **Ammeters (AC) moving iron** | | | | | | | |
| **SF4-2001A** | 0 - 1A | AC | AC ammeter *(direct reading)* | • | | | **297.15** |
| **SF4-2005A** | 0 - 5A | AC | AC ammeter *(direct reading)* | • | | | **297.15** |
| **SF4-2010A** | 0 - 10A | AC | AC ammeter *(direct reading)* | • | | | **297.15** |
| **SF4-2015A** | 0 - 15A | AC | AC ammeter *(direct reading)* | • | | | **297.15** |
| **SF4-2030A** | 0 - 30A | AC | AC ammeter *(direct reading)* | • | | | **316.05** |
| **SF4-2/5A*** | .../5A | AC | AC ammeter *(CT operated)* | • | | | **297.15** |
| **SF7-8001A** | 0 - 1A | AC | AC ammeter *(direct reading)* | | • | | **318.15** |
| **SF7-8005A** | 0 - 5A | AC | AC ammeter *(direct reading)* | | • | | **318.15** |
| **SF7-8010A** | 0 - 10A | AC | AC ammeter *(direct reading)* | | • | | **318.15** |
| **SF7-8015A** | 0 - 15A | AC | AC ammeter *(direct reading)* | | • | | **318.15** |
| **SF7-8030A** | 0 - 30A | AC | AC ammeter *(direct reading)* | | • | | **337.05** |
| **SF7-8/5A*** | .../5A | AC | AC ammeter *(CT operated)* | | • | | **318.15** |
| **SF9-8001A** | 0 - 1A | AC | AC ammeter *(direct reading)* | | | • | **336.00** |
| **SF9-8005A** | 0 - 5A | AC | AC ammeter *(direct reading)* | | | • | **336.00** |
| **SF9-8010A** | 0 - 10A | AC | AC ammeter *(direct reading)* | | | • | **336.00** |
| **SF9-8015A** | 0 - 15A | AC | AC ammeter *(direct reading)* | | | • | **336.00** |
| **SF9-8030A** | 0 - 30A | AC | AC ammeter *(direct reading)* | | | • | **355.95** |
| **SF9-8/5A*** | .../5A | AC | AC ammeter *(CT operated)* | | | • | **336.00** |
| **Maximum demand ammeters** | | | *(90° movement) delay time: 15 min (standard)* | | | | |
| **SF7-3MD5A*** | .../5A | AC | max. demand ammeter - CT | | • | | **791.70** |
| **SF9-3MD5A*** | .../5A | AC | max. demand ammeter - CT | | | • | **791.70** |
| **Maximum demand + Instantaneous ammeters** | | | | | | | |
| **SF7-3CM5A*** | .../5A | AC | combined MD ammeter - CT | | • | | **1 291.50** |
| **SF9-3CM5A*** | .../5A | AC | combined MD ammeter - CT | | | • | **1 291.50** |
| **Voltmeters (AC) moving iron** | | | *(90° movement)* | | | | |
| **SF4-2015V** | 150V | AC | AC voltmeter *(direct reading)* | • | | | **318.15** |
| **SF4-2030V** | 300V | AC | AC voltmeter *(direct reading)* | • | | | **318.15** |
| **SF4-2050V** | 500V | AC | AC voltmeter *(direct reading)* | • | | | **318.15** |
| **SF4-2060V** | 600V | AC | AC voltmeter *(direct reading)* | • | | | **318.15** |
| **SF7-8015V** | 150V | AC | AC voltmeter *(direct reading)* | | • | | **337.05** |
| **SF7-8030V** | 300V | AC | AC voltmeter *(direct reading)* | | • | | **337.05** |
| **SF7-8050V** | 500V | AC | AC voltmeter *(direct reading)* | | • | | **337.05** |
| **SF7-8060V** | 600V | AC | AC voltmeter *(direct reading)* | | • | | **337.05** |
| **SF9-8015V** | 150V | AC | AC voltmeter *(direct reading)* | | | • | **355.95** |
| **SF9-8030V** | 300V | AC | AC voltmeter *(direct reading)* | | | • | **355.95** |
| **SF9-8050V** | 500V | AC | AC voltmeter *(direct reading)* | | | • | **355.95** |
| **SF9-8060V** | 600V | AC | AC voltmeter *(direct reading)* | | | • | **355.95** |

* *Replace with code in chart (below) for desired amperage*

**Standard amperages** - *add code to end of part number e.g* **SF4-2/5A005** *(50A)*

| Code | 003 | 004 | 005 | 006 | 007 | 010 | 015 | 020 | 025 | 030 | 040 | 050 | 060 | 075 | 100 | 125 | 160 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 30 | 40 | 50 | 60 | 75 | 100 | 150 | 200 | 250 | 300 | 400 | 500 | 600 | 750 | 1000 | 1250 | 1600 | 2000 |

## Frame sizes





Above ZAR prices do not include VAT. E&OE

## Analogue panel instruments


SF4-2022Z


SF4-2HA25


SF7-8025DA


SF4-203DV

| type | range | supply | description | frame size mm² 48 x 48 | 72 x 72 | 96 x 96 | price |
|---|---|---|---|---|---|---|---|
| **Frequency meters** | | | *(90° movement)* | | | | |
| **SF4-2022Z** | 45 - 55Hz | 220V | frequency meter *(pointer type)* | • | | | **535.50** |
| **SF4-2038Z** | 45 - 55Hz | 380V | frequency meter *(pointer type)* | • | | | **535.50** |
| **SF7-8022Z** | 45 - 55Hz | 220V | frequency meter *(pointer type)* | | • | | **574.35** |
| **SF7-8038Z** | 45 - 55Hz | 380V | frequency meter *(pointer type)* | | • | | **574.35** |
| **SF9-8022Z** | 45 - 55Hz | 220V | frequency meter *(pointer type)* | | | • | **593.25** |
| **SF9-8038Z** | 45 - 55Hz | 380V | frequency meter *(pointer type)* | | | • | **593.25** |
| **Running hour meters** | | | | | | | |
| **SF4-2HA25** | 110V | AC | running hour meter | • | | | **396.90** |
| **SF4-2HA45** | 380V | AC | running hour meter | • | | | **396.90** |
| **SF7-3HA25** | 110V | AC | running hour meter | | • | | **945.00** |
| **SF7-3HA45** | 380V | AC | running hour meter | | • | | **945.00** |
| **SF9-3HA25** | 110V | AC | running hour meter | | | • | **945.00** |
| **SF9-3HA45** | 380V | AC | running hour meter | | | • | **945.00** |
| **Ammeters (DC) moving coil** | | | *(90° movement)* | | | | |
| **SF4-2000DA** | 0 - 1mA | DC | ammeter *(direct reading)* | • | | | **337.05** |
| **SF4-2420DA** | 4 - 20mA | DC | ammeter *(direct reading)* | • | | | **376.95** |
| **SF4-2001DA** | 0 - 1A | DC | ammeter *(direct reading)* | • | | | **337.05** |
| **SF4-2005DA** | 0 - 5A | DC | ammeter *(direct reading)* | • | | | **337.05** |
| **SF4-2010DA** | 0 - 10A | DC | ammeter *(direct reading)* | • | | | **337.05** |
| **SF4-2015DA** | 0 - 15A | DC | ammeter *(direct reading)* | • | | | **337.05** |
| **SF4-2030DA** | 0 - 30A | DC | ammeter *(direct reading)* | • | | | **337.05** |
| **SF4-2/7DA*** | .../75mV | DC | ammeter *(shunt operated)* | | • | | **337.05** |
| **SF7-8000DA** | 0 - 1mA | DC | ammeter *(direct reading)* | | • | | **355.95** |
| **SF7-8420DA** | 4 - 20mA | DC | ammeter *(direct reading)* | | • | | **396.90** |
| **SF7-8001DA** | 0 - 1A | DC | ammeter *(direct reading)* | | • | | **355.95** |
| **SF7-8005DA** | 0 - 5A | DC | ammeter *(direct reading)* | | • | | **355.95** |
| **SF7-8010DA** | 0 - 10A | DC | ammeter *(direct reading)* | | • | | **355.95** |
| **SF7-8015DA** | 0 - 15A | DC | ammeter *(direct reading)* | | • | | **355.95** |
| **SF7-8030DA** | 0 - 30A | DC | ammeter *(direct reading)* | | • | | **355.95** |
| **SF7-8/7DA*** | .../75mV | DC | ammeter *(shunt operated)* | | • | | **355.95** |
| **SF9-8000DA** | 0 - 1mA | DC | ammeter *(direct reading)* | | | • | **375.90** |
| **SF9-8420DA** | 4 - 20mA | DC | ammeter *(direct reading)* | | | • | **375.90** |
| **SF9-8001DA** | 0 - 1A | DC | ammeter *(direct reading)* | | | • | **375.90** |
| **SF9-8005DA** | 0 - 5A | DC | ammeter *(direct reading)* | | | • | **375.90** |
| **SF9-8010DA** | 0 - 10A | DC | ammeter *(direct reading)* | | | • | **375.90** |
| **SF9-8015DA** | 0 - 15A | DC | ammeter *(direct reading)* | | | • | **375.90** |
| **SF9-8030DA** | 0 - 30A | DC | ammeter *(direct reading)* | | | • | **375.90** |
| **SF9-8/7DA*** | .../75mV | DC | ammeter *(shunt operated)* | | | • | **375.90** |
| **Voltmeter (DC)** | | | *(90° movement)* | | | | |
| **SF4-2007DV** | 75mV | DC | voltmeter *(direct reading)* | • | | | **337.05** |
| **SF4-203DV** | 30V | DC | voltmeter *(direct reading)* | • | | | **337.05** |
| **SF4-215DV** | 150V | DC | voltmeter *(direct reading)* | • | | | **337.05** |
| **SF4-250DV** | 500V | DC | voltmeter *(direct reading)* | • | | | **337.05** |
| **SF7-8007DV** | 75mV | DC | voltmeter *(direct reading)* | | • | | **355.95** |
| **SF7-803DV** | 30V | DC | voltmeter *(direct reading)* | | • | | **355.95** |
| **SF7-815DV** | 150V | DC | voltmeter *(direct reading)* | | • | | **355.95** |
| **SF7-850DV** | 500V | DC | voltmeter *(direct reading)* | | • | | **355.95** |
| **SF9-8007DV** | 75mV | DC | voltmeter *(direct reading)* | | | • | **375.90** |
| **SF9-803DV** | 30V | DC | voltmeter *(direct reading)* | | | • | **375.90** |
| **SF9-815DV** | 150V | DC | voltmeter *(direct reading)* | | | • | **375.90** |
| **SF9-850DV** | 500V | DC | voltmeter *(direct reading)* | | | • | **375.90** |

* - *Replace with code in chart (below) for desired amperage*

**Standard amperages** - *add code to end of part number for desired amperage*

| Code | 003 | 004 | 005 | 006 | 007 | 010 | 015 | 020 | 025 | 030 | 040 | 050 | 060 | 075 | 100 | 125 | 160 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 30 | 40 | 50 | 60 | 75 | 100 | 150 | 200 | 250 | 300 | 400 | 500 | 600 | 750 | 1000 | 1250 | 1600 | 2000 |


SFN-4K1-I

## Digital panel meters

| | |
|---|---|
| Measuring accuracy: | ± 0.5 % FS ±1 digit |
| Measuring display mode: | RMS measurement, four-digit LED |
| Auxiliary power supply: | AC220V, 50/60Hz *(others on request)* |
| Operating temperature: | -10…50ºC |
| Overload voltage and current: | Continuous: 1.2 times. Instantaneous: 2 times *(30s-Voltage) (1s-Current)* |
| Available frame sizes: | **4** = 48 x 48 mm / **5** = 48 x 96 mm / **7** = 72 x 72 mm / **9** = 96 x 96 mm |


SFN-7K3-3I


SFN-5K1-U


SFN-9K3-3U


SFN-7K1-F


SFN-9K3-UIF

| type | range | range using CT /5A | description | phase | frame size mm² 48 x 48 | 48 x 96 | 72 x 72 | 96 x 96 | price |
|---|---|---|---|---|---|---|---|---|---|
| **Ammeters (AC)** | | | | | | | | | |
| Direct measure: | | *AC 0…5A (with CT …/5A: AC 0…9999A)* | | | | | | | |
| **Single-phase** | | | | | | | | | |
| **SFN-4K1-I** | 0…5A | 0…9999A | digital AC ammeter | 1ph | • | | | | **831.60** |
| **SFN-5K1-I** | 0…5A | 0…9999A | digital AC ammeter | 1ph | | • | | | **831.60** |
| **SFN-7K1-I** | 0…5A | 0…9999A | digital AC ammeter | 1ph | | | • | | **831.60** |
| **SFN-9K1-I** | 0…5A | 0…9999A | digital AC ammeter | 1ph | | | | • | **831.60** |
| **Three-phase** - *(3 displays - one for each phase)* | | | | | | | | | |
| **SFN-4K3-3I** | 0…5A | 0…9999A | digital AC ammeter | 3ph | • | | | | **1 291.50** |
| **SFN-7K3-3I** | 0…5A | 0…9999A | digital AC ammeter | 3ph | | | • | | **1 291.50** |
| **SFN-9K3-3I** | 0…5A | 0…9999A | digital AC ammeter | 3ph | | | | • | **1 291.50** |
| **Voltmeters (AC)** | | | | | | | | | |
| Direct measure: | | *AC 0…600V (with PT …/100V: AC 0…9999V)* | | | | | | | |
| **Single-phase** | | | | | | | | | |
| **SFN-4K1-U** | 0…600V | 0…9999V | digital AC voltmeter | 1ph | • | | | | **831.60** |
| **SFN-5K1-U** | 0…600V | 0…9999V | digital AC voltmeter | 1ph | | • | | | **831.60** |
| **SFN-7K1-U** | 0…600V | 0…9999V | digital AC voltmeter | 1ph | | | • | | **831.60** |
| **SFN-9K1-U** | 0…600V | 0…9999V | digital AC voltmeter | 1ph | | | | • | **831.60** |
| **Three-phase** - *(3 displays - one for each phase)* | | | | | | | | | |
| **SFN-4K3-3U** | 0…600V | 0…9999V | digital AC voltmeter | 3ph | • | | | | **1 291.50** |
| **SFN-7K3-3U** | 0…600V | 0…9999V | digital AC voltmeter | 3ph | | | • | | **1 291.50** |
| **SFN-9K3-3U** | 0…600V | 0…9999V | digital AC voltmeter | 3ph | | | | • | **1 291.50** |
| **Frequency meters** | | | | | | | | | |
| **SFN-4K1-F** | 30…99Hz | 30...500V | digital frequency meter | 1ph | • | | | | **889.35** |
| **SFN-5K1-F** | 30…99Hz | 30...500V | digital frequency meter | 1ph | | • | | | **889.35** |
| **SFN-7K1-F** | 30…99Hz | 30...500V | digital frequency meter | 1ph | | | • | | **889.35** |
| **SFN-9K1-F** | 30…99Hz | 30...500V | digital frequency meter | 1ph | | | | • | **889.35** |
| **Combination - Amp, Volt and Frequency meter** *(on one panel meter)* | | | | | | | | | |
| **SFN-4K3-UIF** | 0…500V | 0…5kV | digital A, V, Hz meter | 3ph | • | | | | **1 291.50** |
| **SFN-7K3-UIF** | 0…5A | 0…5000A | digital A, V, Hz meter | 3ph | | | • | | **1 291.50** |
| **SFN-9K3-UIF** | 45…65Hz | 45…65Hz | digital A, V, Hz meter | 3ph | | | | • | **1 291.50** |
| **DC panel meters** | | | | | | | | | |
| **Ammeters (DC)** | | | | | | | | | |
| Direct measure: | | *DC 0…5A (with shunt … / 75mV: DC 0…9999A)* | | | | | | | |
| **SFN-4K1DC-I** | 0…5A | 0…9999A | digital DC ammeter | 1ph | • | | | | **831.60** |
| **SFN-5K1DC-I** | 0…5A | 0…9999A | digital DC ammeter | 1ph | | • | | | **831.60** |
| **SFN-7K1DC-I** | 0…5A | 0…9999A | digital DC ammeter | 1ph | | | • | | **831.60** |
| **SFN-9K1DC-I** | 0…5A | 0…9999A | digital DC ammeter | 1ph | | | | • | **831.60** |
| **Voltmeters (DC)** | | | | | | | | | |
| **SFN-4K1-DCU** | 0…600V | – | digital DC voltmeter | 1ph | • | | | | **831.60** |
| **SFN-5K1-DCU** | 0…600V | – | digital DC voltmeter | 1ph | | • | | | **831.60** |
| **SFN-7K1-DCU** | 0…600V | – | digital DC voltmeter | 1ph | | | • | | **831.60** |
| **SFN-9K1-DCU** | 0…600V | – | digital DC voltmeter | 1ph | | | | • | **831.60** |



Above ZAR prices do not include VAT. E&OE


ASR 20.3

**Current transformers** **Class 1**

**General specifications:**

- Nominal frequency: 50Hz *(others on request)*
- Isolation class: E
- Nominal thermal short-time current: Ith = 60 x In
- Maximum operating voltage: Um ≤ 0.72 kV
- Over-current limiting factor: FS 5 up to 1500 A nominal current

MBS AG current transformers conform fully to: DIN VDE 0414/1 - DIN 42600 - IEC 61869/1+2 - VBG 4

| type | ratio | class | Burden (VA) | description | max. hole diameter (mm) round | B/bar 1 | B/bar 2 | price |
|---|---|---|---|---|---|---|---|---|
| **Tube/ring type current transformers** | | | | **5A secondary - class 1** | | | | |
| **ASR 20.3** | tube current transformers | | | *(H) 65 x (W) 45 x (D) 30 mm* | | | | |
| **26027** | 50/5A | 1 | 1 | tube current transformer | Ø21 | – | – | **499.80** |
| **26029** | 60/5A | 1 | 1.25 | tube current transformer | | | | **499.80** |
| **26031** | 75/5A | 1 | 1.5 | tube current transformer | | | | **499.80** |
| **26035** | 100/5A | 1 | 2.5 | tube current transformer | | | | **499.80** |
| **26041** | 150/5A | 1 | 3.75 | tube current transformer | | | | **499.80** |
| **26051** | 200/5A | 1 | 3.75 | tube current transformer | | | | **499.80** |
| **26046** | 250/5A | 1 | 5 | tube current transformer | | | | **499.80** |


ASK 41.4

| type | ratio | class | Burden (VA) | description | max. hole diameter (mm) round | B/bar 1 | B/bar 2 | price |
|---|---|---|---|---|---|---|---|---|
| **Busbar mounted current transformers** | | | | **5A secondary - class 1** | | | | |
| **ASK 31.3** | current transformers | | | *(H) 76 x (W) 61 x (D) 48 mm* | | | | |
| **7038** | 50/5A | 1 | 1 | std current transformer | Ø26 | 30x10 | 20x20 | **499.80** |
| **7039** | 60/5A | 1 | 1 | std current transformer | | | | **499.80** |
| **7041** | 75/5A | 1 | 1.5 | std current transformer | | | | **499.80** |
| **7045** | 100/5A | 1 | 2.5 | std current transformer | | | | **499.80** |
| **7047** | 150/5A | 1 | 2.5 | std current transformer | | | | **499.80** |
| **7050** | 200/5A | 1 | 5 | std current transformer | | | | **499.80** |
| **7053** | 250/5A | 1 | 5 | std current transformer | | | | **499.80** |
| **ASK 41.4** | current transformers | | | *(H) 85.5 x (W) 71 x (D) 58 mm* | | | | |
| **13044** | 100/5A | 1 | 2.5 | std current transformer | Ø32 | 40x10 | 30x15 | **426.30** |
| **13048** | 150/5A | 1 | 5 | std current transformer | | | | **426.30** |
| **13050** | 200/5A | 1 | 5 | std current transformer | | | | **426.30** |
| **13054** | 250/5A | 1 | 10 | std current transformer | | | | **426.30** |
| **13057** | 300/5A | 1 | 10 | std current transformer | | | | **426.30** |
| **13062** | 400/5A | 1 | 15 | std current transformer | | | | **426.30** |
| **13066** | 500/5A | 1 | 15 | std current transformer | | | | **426.30** |
| **13070** | 600/5A | 1 | 15 | std current transformer | | | | **426.30** |
| **13073** | 750/5A | 1 | 15 | std current transformer | | | | **426.30** |
| **13077** | 800/5A | 1 | 15 | std current transformer | | | | **426.30** |


ASK 51.4

| type | ratio | class | Burden (VA) | description | max. hole diameter (mm) round | B/bar 1 | B/bar 2 | price |
|---|---|---|---|---|---|---|---|---|
| **ASK 51.4** | current transformers | | | *(H) 98.5 x (W) 86 x (D) 58 mm* | | | | |
| **16055** | 400/5A | 1 | 10 | std current transformer | Ø44 | 50x10 | 40x20 | **540.75** |
| **16060** | 500/5A | 1 | 15 | std current transformer | | | | **540.75** |
| **16064** | 600/5A | 1 | 15 | std current transformer | | | | **540.75** |
| **16068** | 750/5A | 1 | 15 | std current transformer | | | | **540.75** |
| **16071** | 800/5A | 1 | 15 | std current transformer | | | | **540.75** |
| **16075** | 1000/5A | **1** | 15 | std current transformer | | | | **540.75** |
| **ASK 61.4** | current transformers | | | *(H) 105.5 x (W) 96 x (D) 58 mm* | | | | |
| **19065** | 600/5A | 1 | 15 | std current transformer | Ø44 | 60x10 | 50x30 | **549.15** |
| **19069** | 750/5A | 1 | 15 | std current transformer | | | | **549.15** |
| **19073** | 800/5A | 1 | 15 | std current transformer | | | | **549.15** |
| **19076** | 1000/5A | 1 | 15 | std current transformer | | | | **549.15** |
| **19085** | 1250/5A | 1 | 30 | std current transformer | | | | **549.15** |


ASK 61.4

| type | ratio | class | Burden (VA) | description | max. hole diameter (mm) round | B/bar 1 | B/bar 2 | price |
|---|---|---|---|---|---|---|---|---|
| **ASK 81.4** | current transformers | | | *(H) 123.5 x (W) 120 x (D) 58 mm* | | | | |
| **21045** | 600/5A | 1 | 10 | std current transformer | Ø55 | 80x10 | 60x30 | **891.45** |
| **21049** | 750/5A | 1 | 15 | std current transformer | | | | **891.45** |
| **21053** | 800/5A | 1 | 15 | std current transformer | | | | **891.45** |
| **21056** | 1000/5A | 1 | 15 | std current transformer | | | | **891.45** |
| **21064** | 1250/5A | 1 | 15 | std current transformer | | | | **891.45** |
| **21072** | 1600/5A | 1 | 30 | std current transformer | | | | **891.45** |


ASK 103.3


ASK 103.41


121-1000...


121-10106

**Current transformers** **Class 1**

**General specifications:**

- Nominal frequency: 50Hz *(others on request)*
- Isolation class: E
- Nominal thermal short-time current: Ith = 60 x In
- Maximum operating voltage: Um ≤ 0.72 kV
- Over-current limiting factor: FS 5 up to 1500 A nominal current

MBS AG current transformers conform fully to: DIN VDE 0414/1 - DIN 42600 - IEC 61869/1+2 - VBG 4

| type | ratio | class | Burden (VA) | description | max. hole diameter (mm) round | B/bar 1 | B/bar 2 | price |
|---|---|---|---|---|---|---|---|---|
| **Busbar mounted current transformers** | | **5A secondary - class 1** | | | | | | |
| **ASK 101.4** | current transformers | | | *(H) 144 x (W) 130 x (D) 58 mm* | | | | |
| **22055** | 1250/5A | 1 | 30 | std current transformer | Ø70 | 100x10 | 80x30 | **1 006.95** |
| **22062** | 1600/5A | 1 | 30 | std current transformer | | | | **1 006.95** |
| **22070** | 2000/5A | 1 | 30 | std current transformer | | | | **1 006.95** |
| **ASK 103.3** | current transformers | | | *(H) 187.5 x (W) 172 x (D) 52 mm* | | | | |
| **23058** | 1600/5A | 1 | 30 | std current transformer | Ø85 | 100x30 | 80x50 | **1 155.00** |
| **23062** | 2000/5A | 1 | 30 | std current transformer | | | | **1 155.00** |
| **23066** | 2500/5A | 1 | 30 | std current transformer | | | | **1 155.00** |
| **23070** | 3000/5A | 1 | 30 | std current transformer | | | | **1 155.00** |
| **Rectangular hole for vertically mounted busbars** | | | | | | | | |
| **ASK 103.41** | current transformers | | | *(H) 150 x (W) 98.5 x (D) 58 mm* | | | | |
| **97054** | 500/5A | 1 | 5 | std current transformer | Ø40 | 100x40 | – | **2 121.00** |
| **97056** | 600/5A | 1 | 5 | std current transformer | | | | **2 121.00** |
| **97058** | 750/5A | 1 | 5 | std current transformer | | | | **2 121.00** |
| **97060** | 800/5A | 1 | 10 | std current transformer | | | | **2 121.00** |
| **97062** | 1000/5A | 1 | 15 | std current transformer | | | | **2 121.00** |
| **97066** | 1250/5A | 1 | 15 | std current transformer | | | | **2 121.00** |
| **ASK 128.4** | current transformers | | | *(H) 150 x (W) 98.5 x (D) 58 mm* | | | | |
| **94056** | 1250/5A | 1 | 15 | std current transformer | Ø38 | 128x38 | – | **2 982.00** |
| **94058** | 1500/5A | 1 | 30 | std current transformer | | | | **3 328.50** |
| **94060** | 2000/5A | 1 | 30 | std current transformer | | | | **3 475.50** |
| **94062** | 2500/5A | 1 | 30 | std current transformer | | | | **3 475.50** |

**Accessories for current transformers**

| | | | | price |
|---|---|---|---|---|
| **55013** | DIN clip | DIN-rail mounting clip for current transformers | ASR 20.3 | **148.05** |
| **55011** | DIN clip | DIN-rail mounting clip for current transformers | ASK 30.3 | **148.05** |
| **55012** | DIN clip | DIN-rail mounting clip for current transformers | ASK 41.4 | **148.05** |

**Rogowski coils and integrator**

**FASK series - Rogowski coils**

As well as conventional CTs, Rogowski coils can be used for measuring current and are easy to attach and removed without disconnecting the power circuit.

- Certification: Complies with EMC EN 61326-1:2006
- Insulation voltage: Coil - 3000V / Supply cable: 1000V
- Transmission ratio: 100 mV/kA @ 50 Hz
- Operating temperature: -30 to +80ºC

| type | coil length (mm) | coil window size (mm) | description | cable length | price |
|---|---|---|---|---|---|
| **121-10004** | 665 | 200 | 1 x Rogowski coil | 3 m | **4 557.00** |
| **121-10005** | 965 | 300 | 1 x Rogowski coil | 3 m | **4 557.00** |

*Other sizes on request*

**ROI-3 integrator** *for above Rogowski coil*

- Accuracy: 0.5% at 1% to 110% of the primary rated current
- Supply voltage: 24 VDC
- Dimensions: 114 x 100 x 22.5 mm

| type | ratio | no of phases | description | module width | price |
|---|---|---|---|---|---|
| **121-10106** | 2000/1A | 3 | integrator for Rogowski coil | 22.5 mm | **8 851.50** |
| **121-10107** | 4000/1A | 3 | integrator for Rogowski coil | 22.5 mm | **8 851.50** |
| **121-10108** | 6000/1A | 3 | integrator for Rogowski coil | 22.5 mm | **8 851.50** |



Above ZAR prices do not include VAT. E&OE


ASK 41.4


ASK 61.4


ASK 103.3


ASK 51.4

**Current transformers …/5A Class 0.2 and 0.5**

Modern meters and network analysers provide higher accuracy levels, requiring more accurate current transformers. We introduce a range of high accuracy and reliability class 0.2s and 0.5 current transformers.

MBS AG current transformers conform fully to: IEC 60044 / DIN VDE 0414/1 - DIN 42600-2

| type | ratio | class | Burden (VA) | description | max. hole diameter (mm) round | B/bar 1 | B/bar 2 | price |
|---|---|---|---|---|---|---|---|---|
| **Busbar mounted current transformers** | | | | **5A secondary - Class 0.5** | | | | |
| **ASK 41.4** | current transformers | | | *(H) 85.5 x (W) 71 x (D) 58 mm* | | | | |
| **13085** | 200/5A | 0.5 | 5 | std current transformer | Ø32 | 40x10 | 30x15 | **932.40** |
| **13086** | 250/5A | 0.5 | 5 | std current transformer | | | | **932.40** |
| **13087** | 300/5A | 0.5 | 10 | std current transformer | | | | **932.40** |
| **13088** | 400/5A | 0.5 | 10 | std current transformer | | | | **932.40** |
| **13089** | 500/5A | 0.5 | 15 | std current transformer | | | | **932.40** |
| **13090** | 600/5A | 0.5 | 15 | std current transformer | | | | **932.40** |
| **13031** | 800/5A | 0.5 | 10 | std current transformer | | | | **932.40** |
| **ASK 51.4** | current transformers | | | *(H) 101.5 x (W) 86 x (D) 58 mm* | | | | |
| **16154** | 600/5A | 0.5 | 15 | std current transformer | Ø44 | 50x12 | 40x20 | **1 155.00** |
| **16203** | 750/5A | 0.5 | 15 | std current transformer | | | | **1 155.00** |
| **16033** | 800/5A | 0.5 | 15 | std current transformer | | | | **1 155.00** |
| **16036** | 1000/5A | 0.5 | 15 | std current transformer | | | | **1 155.00** |
| **ASK 61.4** | current transformers | | | *(H) 108.5 x (W) 96 x (D) 58 mm* | | | | |
| **19031** | 800/5A | 0.5 | 15 | std current transformer | Ø44 | 63x10 | 50x20 | **1 270.50** |
| **19034** | 1000/5A | 0.5 | 15 | std current transformer | | | | **1 270.50** |
| **19101** | 1250/5A | 0.5 | 30 | std current transformer | | | | **1 270.50** |
| **ASK 81.4** | current transformers | | | *(H) 126.5 x (W) 120 x (D) 58 mm* | | | | |
| **21023** | 1000/5A | 0.5 | 15 | std current transformer | Ø55 | 80x10 | 50x30 | **1 711.50** |
| **21029** | 1250/5A | 0.5 | 15 | std current transformer | | | | **1 711.50** |
| **21035** | 1600/5A | 0.5 | 15 | std current transformer | | | | **1 711.50** |
| **ASK 103.3** | current transformers | | | *(H) 187.5 x (W) 172 x (D) 52 mm* | | | | |
| **23026** | 1600/5A | 0.5 | 15 | std current transformer | Ø85 | 100x30 | 80x50 | **2 709.00** |
| **23029** | 2000/5A | 0.5 | 30 | std current transformer | | | | **2 709.00** |
| **23032** | 2500/5A | 0.5 | 30 | std current transformer | | | | **2 709.00** |
| **23035** | 3000/5A | 0.5 | 30 | std current transformer | | | | **2 709.00** |
| **Busbar mounted current transformers** | | | | **5A secondary - Class 0.2s** | | | | |
| **ASK 41.4** | current transformers | | | *(H) 85.5 x (W) 71 x (D) 58 mm* | | | | |
| **V24-1704D** | 200/5A | 0.2s | 2.5 | std current transformer | Ø32 | 40x10 | 30x15 | **3 874.50** |
| **V24-1804F** | 250/5A | 0.2s | 5 | std current transformer | | | | **3 874.50** |
| **V24-1904F** | 300/5A | 0.2s | 5 | std current transformer | | | | **3 874.50** |
| **V24-2004H** | 400/5A | 0.2s | 10 | std current transformer | | | | **3 874.50** |
| **V24-2104H** | 500/5A | 0.2s | 10 | std current transformer | | | | **3 580.50** |
| **V24-2204F** | 600/5A | 0.2s | 5 | std current transformer | | | | **3 874.50** |
| **ASK 51.4** | current transformers | | | *(H) 98.5 x (W) 86 x (D) 58 mm* | | | | |
| **V34-2404H** | 800/5A | 0.2s | 10 | std current transformer | Ø44 | 50x12 | 40x20 | **3 150.00** |
| **V34-2504J** | 1000/5A | 0.2s | 15 | std current transformer | | | | **3 150.00** |
| **ASK 61.4** | current transformers | | | *(H) 105.5 x (W) 96 x (D) 58 mm* | | | | |
| **V41-2704J** | 1250/5A | 0.2s | 15 | std current transformer | Ø44 | 60x10 | 50x20 | **3 895.50** |
| **V41-2804J** | 1600/5A | 0.2s | 15 | std current transformer | | | | **3 895.50** |
| **ASK 123.3** | current transformers | | | *(H) 184.8 x (W) 172 x (D) 52 mm* | | | | |
| **V56-2704F** | 1250/5A | 0.2s | 5 | std current transformer | Ø100 | 120x30 | 100x50 | **6 163.50** |
| **V56-2904J** | 1600/5A | 0.2s | 15 | std current transformer | | | | **4 735.50** |
| **V56-3004J** | 2000/5A | 0.2s | 15 | std current transformer | | | | **4 735.50** |
| **V56-3204J** | 2500/5A | 0.2s | 15 | std current transformer | | | | **4 735.50** |
| **V56-3304J** | 3000/5A | 0.2s | 15 | std current transformer | | | | **4 735.50** |


WSK 40


SUSK 4


ASK 41.4


ASK 61.4


ASK 103.3

| type | ratio | class | Burden (VA) | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Primary wound current transformers** | | | | **5A secondary - class 1** | | | | |
| **WSK 30** | *primary wound current transformers* | | | | | | | |
| **30022** | 5/5A | 1 | 5 | wound current transformer | 79 | 61 | 35 | **1 396.50** |
| **30024** | 10/5A | 1 | 5 | wound current transformer | 79 | 61 | 35 | **1 396.50** |
| **30026** | 15/5A | 1 | 5 | wound current transformer | 79 | 61 | 35 | **1 396.50** |
| **30028** | 20/5A | 1 | 5 | wound current transformer | 79 | 61 | 35 | **1 396.50** |
| **WSK 40** | *primary wound current transformers* | | | | | | | |
| **31070** | 25/5A | 1 | 10 | wound current transformer | 89 | 71 | 45 | **1 627.50** |
| **31074** | 30/5A | 1 | 10 | wound current transformer | 89 | 71 | 45 | **1 627.50** |
| **Summation current transformers** | | | | **5A secondary - class 1** | | | | |
| **KSU 2/3** | *summation current transformers* | | | | | | | |
| **41015** | 5+5/5A | 1 | 10 | summation transformer | 94 | 127 | 57 | **2 299.50** |
| **41031** | 5+5+5/5A | 1 | 10 | summation transformer | 94 | 127 | 57 | **3 192.00** |
| **SUSK 4** | *summation current transformers* | | | | | | | |
| **40027** | 5+5+5+5/5A | 1 | 10 | summation transformer | 137 | 156 | 65 | **4 315.50** |

| type | ratio | class | Burden (VA) | description | max. hole diameter (mm) round | B/bar 1 | B/bar 2 | price |
|---|---|---|---|---|---|---|---|---|
| **Busbar mounted current transformers** | | | | **1A secondary - class 1** | | | | |
| **ASK 41.4** | current transformers | | | *(H) 85.5 x (W) 71 x (D) 58 mm* | | | | |
| **13239** | 75/1A | 1 | 1.5 | std current transformer | Ø32 | 40x10 | 30x15 | **655.20** |
| **13244** | 100/1A | 1 | 2.5 | std current transformer | | | | **655.20** |
| **13248** | 150/1A | 1 | 5 | std current transformer | | | | **655.20** |
| **13250** | 200/1A | 1 | 5 | std current transformer | | | | **655.20** |
| **13254** | 250/1A | 1 | 10 | std current transformer | | | | **655.20** |
| **13257** | 300/1A | 1 | 10 | std current transformer | | | | **655.20** |
| **13262** | 400/1A | 1 | 15 | std current transformer | | | | **655.20** |
| **13266** | 500/1A | 1 | 15 | std current transformer | | | | **655.20** |
| **13270** | 600/1A | 1 | 15 | std current transformer | | | | **655.20** |
| **13273** | 750/1A | 1 | 15 | std current transformer | | | | **655.20** |
| **13277** | 800/1A | 1 | 15 | std current transformer | | | | **655.20** |
| **ASK 51.4** | current transformers | | | *(H) 85.5 x (W) 71 x (D) 58 mm* | | | | |
| **16260** | 500/1A | 1 | 15 | std current transformer | Ø44 | 50x10 | 40x30 | **875.70** |
| **16264** | 600/1A | 1 | 15 | std current transformer | | | | **875.70** |
| **16268** | 750/1A | 1 | 15 | std current transformer | | | | **875.70** |
| **16271** | 800/1A | 1 | 15 | std current transformer | | | | **875.70** |
| **16275** | 1000/1A | 1 | 15 | std current transformer | | | | **875.70** |
| **ASK 61.4** | current transformers | | | *(H) 105.5 x (W) 96 x (D) 58 mm* | | | | |
| **19265** | 600/1A | 1 | 15 | std current transformer | Ø44 | 60x10 | 50x30 | **859.95** |
| **19269** | 750/1A | 1 | 15 | std current transformer | | | | **859.95** |
| **19273** | 800/1A | 1 | 15 | std current transformer | | | | **859.95** |
| **19285** | 1250/1A | 1 | 30 | std current transformer | | | | **859.95** |
| **ASK 81.4** | current transformers | | | *(H) 123.5 x (W) 120 x (D) 58 mm* | | | | |
| **21253** | 800/1A | 1 | 15 | std current transformer | Ø55 | 80x10 | 60x30 | **1 512.00** |
| **21256** | 1000/1A | 1 | 15 | std current transformer | | | | **1 512.00** |
| **21264** | 1250/1A | 1 | 15 | std current transformer | | | | **1 512.00** |
| **21272** | 1600/1A | 1 | 30 | std current transformer | | | | **1 512.00** |
| **ASK 103.3** | current transformers | | | *(H) 185 x (W) 172 x (D) 52 mm* | | | | |
| **23251** | 1250/1A | 1 | 30 | std current transformer | Ø85 | 100x30 | 80x50 | **1 281.00** |
| **23258** | 1600/1A | 1 | 30 | std current transformer | | | | **1 281.00** |
| **23262** | 2000/1A | 1 | 30 | std current transformer | | | | **1 281.00** |
| **23266** | 2500/1A | 1 | 30 | std current transformer | | | | **1 281.00** |
| **23270** | 3000/1A | 1 | 30 | std current transformer | | | | **1 281.00** |



Above ZAR prices do not include VAT. E&OE


KBR 28


KBU 23


KBU 816

**Split-core current transformers**

The split measuring system facilitates simple installation into existing panel boards without additional mounting requirements. Simply open the locking mechanism of the current transformer place, around the primary conductor and lock ensuring that the circuit is closed. Once secondary conductors are connected and the unit is ready for operation.

MBS AG current transformers conform fully to: DIN VDE 0414/1 - DIN 42600 - IEC 61869/1+2 - VBG 4

| type | ratio | class | Burden (VA) | description | hole diameter (mm) round | B/bar | price |
|---|---|---|---|---|---|---|---|
| **KBR series - Split-core CTs** | | | | **5A secondary - class 1** | | | |
| • Delivered with 0.5m connection cable 2 x 1.5 mm² | | | | | | | |
| **KBR 18L** | split-core current transformers | | | *(H) 80.1 x (W) 49 x (D) 59 mm* | | | |
| **18L-5001** | 150/5A | 1 | 1 | split-core current transformer | Ø18.4 | – | **2 016.00** |
| **18L-5002** | 200/5A | 1 | 1.5 | split-core current transformer | | | **2 016.00** |
| **18L-5004** | 250/5A | 1 | 2 | split-core current transformer | | | **2 016.00** |
| **KBR 28** | split-core current transformers | | | *(H) 79.5 x (W) 49 x (D) 59 mm* | | | |
| **28-5002** | 300/5A | 1 | 1.5 | split-core current transformer | Ø26 | – | **2 205.00** |
| **28-5003** | 400/5A | 1 | 2.5 | split-core current transformer | | | **2 205.00** |
| **28-5005** | 500/5A | 1 | 3.0 | split-core current transformer | | | **2 205.00** |
| **KBR 42** | split-core current transformers | | | *(H) 96 x (W) 67 x (D) 69 mm* | | | |
| **42-5003** | 500/5A | 1 | 5 | split-core current transformer | Ø42.4 | – | **2 383.50** |
| **42-5005** | 600/5A | 1 | 5 | split-core current transformer | | | **2 383.50** |
| **42-5009** | 800/5A | 1 | 5 | split-core current transformer | | | **2 383.50** |
| **42-5011** | 1000/5A | 1 | 5 | split-core current transformer | | | **2 383.50** |
| **KBU series - Split-core CTs** | | | | **5A secondary - class 3 / 1 / 0.5** | | | |
| **KBU 23** | split-core current transformers | | | *(H) 106 x (W) 93 x (D) 58 mm* | | | |
| **80048** | 100/5A | 3 | 1.25 | split-core current transformer | Ø20 | 20x30 | **2 457.00** |
| **80030** | 150/5A | 3 | 1.50 | split-core current transformer | | | **2 457.00** |
| **80031** | 200/5A | 3 | 2.50 | split-core current transformer | | | **2 457.00** |
| **80044** | 250/5A | 1 | 3.75 | split-core current transformer | | | **2 457.00** |
| **KBU 58** | split-core current transformers | | | *(H) 158 x (W) 125 x (D) 58 mm* | | | |
| **80061** | 250/5A | 1 | 1.5 | split-core current transformer | Ø 50 | 50x80 | **2 856.00** |
| **80062** | 300/5A | 1 | 2.5 | split-core current transformer | | | **2 856.00** |
| **80063** | 400/5A | 1 | 2.5 | split-core current transformer | | | **2 856.00** |
| **80038** | 400/5A | 0.5 | 2.5 | split-core current transformer | | | **3 580.50** |
| **80064** | 500/5A | 1 | 5.0 | split-core current transformer | | | **2 856.00** |
| **80054** | 500/5A | 0.5 | 2.5 | split-core current transformer | | | **3 580.50** |
| **80065** | 600/5A | 1 | 5.0 | split-core current transformer | | | **2 856.00** |
| **80055** | 600/5A | 0.5 | 2.5 | split-core current transformer | | | **3 580.50** |
| **80067** | 800/5A | 1 | 7.5 | split-core current transformer | | | **2 856.00** |
| **80057** | 800/5A | 0.5 | 2.5 | split-core current transformer | | | **3 580.50** |
| **80068** | 1000/5A | 1 | 10 | split-core current transformer | | | **2 856.00** |
| **80058** | 1000/5A | 0.5 | 5 | split-core current transformer | | | **3 580.50** |
| **KBU 812** | split-core current transformers | | | *(H) 198 x (W) 155 x (D) 58 mm* | | | |
| **80098** | 1000/5A | 1 | 10 | split-core current transformer | Ø80 | 120x80 | **3 391.50** |
| **80100** | 1250/5A | 1 | 15 | split-core current transformer | | | **3 391.50** |
| **80080** | 1250/5A | 0.5 | 7.5 | split-core current transformer | | | **4 000.50** |
| **KBU 816** | split-core current transformers | | | *(H) 243 x (W) 195 x (D) 79 mm* | | | |
| **80147** | 1600/5A | 1 | 15 | split-core current transformer | Ø 80 | 160 x 80 | **3 990.00** |
| **80115** | 1600/5A | 0.5 | 15 | split-core current transformer | | | **4 609.50** |
| **80149** | 2000/5A | 1 | 15 | split-core current transformer | | | **3 990.00** |
| **80117** | 2000/5A | 0.5 | 15 | split-core current transformer | | | **4 609.50** |
| **80151** | 2500/5A | 1 | 15 | split-core current transformer | | | **3 990.00** |
| **80120** | 2500/5A | 0.5 | 15 | split-core current transformer | | | **4 609.50** |
| **80153** | 3000/5A | 1 | 30 | split-core current transformer | | | **3 990.00** |
| **80122** | 3000/5A | 0.5 | 15 | split-core current transformer | | | **4 609.50** |
| **80155** | 4000/5A | 1 | 30 | split-core current transformer | | | **3 990.00** |
| **80157** | 5000/5A | 1 | 30 | split-core current transformer | | | **3 990.00** |

*Available with 1A secondary on request*


IMN1...


IBR1...


IBR3...


FL-2/001-7


FL-2/060-7

| type | ratio | description | class | VA | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **IMN1 ring type transformers** | | | *Ø round conductor: 32 mm* | | | | | |
| **IMN1/05** | 50/5A | ring current transformer | 3 | 1.25 | 87 | 64 | 42 | **246.75** |
| **IMN1/06** | 60/5A | ring current transformer | 3 | 1.25 | 87 | 64 | 42 | **247.80** |
| **IMN1/07** | 75/5A | ring current transformer | 3 | 1.25 | 87 | 64 | 42 | **249.90** |
| **IMN1/10** | 100/5A | ring current transformer | 1 | 2.5 | 87 | 64 | 42 | **249.90** |
| **IMN1/12** | 125/5A | ring current transformer | 1 | 2.5 | 87 | 64 | 42 | **250.95** |
| **IMN1/15** | 150/5A | ring current transformer | 1 | 3.75 | 87 | 64 | 42 | **252.00** |
| **IMN1/16** | 160/5A | ring current transformer | 1 | 3.75 | 87 | 64 | 42 | **254.10** |
| **IMN1/20** | 200/5A | ring current transformer | 1 | 5 | 87 | 64 | 42 | **264.60** |
| **IMN1/25** | 250/5A | ring current transformer | 1 | 7.5 | 87 | 64 | 42 | **269.85** |
| 4 - 20 mA version on request | | | | | | | | |
| **IMN2 current transformers** | | | | | | | | |
| **Primary bar conductor:** *40 x 12.5 mm* | | | *Ø round conductor: 38 mm* | | | | | |
| **IMN2/16** | 160/5A | ring current transformer | 1 | 5 | 99 | 75 | 42 | **337.05** |
| **IMN2/20** | 200/5A | ring current transformer | 1 | 10 | 99 | 75 | 42 | **346.50** |
| **IMN2/25** | 250/5A | ring current transformer | 1 | 10 | 99 | 75 | 42 | **369.60** |
| **IMN2/30** | 300/5A | ring current transformer | 1 | 15 | 99 | 75 | 42 | **382.20** |
| **IMN2/40** | 400/5A | ring current transformer | 1 | 25 | 99 | 75 | 42 | **405.30** |
| **IMN2/50** | 500/5A | ring current transformer | 1 | 30 | 99 | 75 | 42 | **471.45** |
| **IMN2/60** | 600/5A | ring current transformer | 1 | 30 | 99 | 75 | 42 | **472.50** |
| **IBR1 current transformers** | | | | | | | | |
| **Primary bar conductor:** *60 x 20 mm* | | | *Ø round conductor: 60 mm* | | | | | |
| **IBR1/06** | 600/5A | ring current transformer | 0.5 | 7.5 | 115 | 104 | 45 | **549.15** |
| **IBR1/08** | 800/5A | ring current transformer | 0.5 | 15 | 115 | 104 | 45 | **544.95** |
| **IBR1/10** | 1000/5A | ring current transformer | 0.5 | 30 | 115 | 104 | 45 | **581.70** |
| **IBR1/12** | 1250/5A | ring current transformer | 0.5 | 30 | 115 | 104 | 45 | **622.65** |
| **IBR3 current transformers** | | | | | | | | |
| **Primary bar conductor:** *100 x 30 mm* | | | *Ø round conductor: 110 mm* | | | | | |
| **IBR3/12** | 1250/5A | ring current transformer | 0.5 | 15 | 170 | 152 | 45 | **826.35** |
| **IBR3/16** | 1600/5A | ring current transformer | 0.5 | 30 | 170 | 152 | 45 | **921.90** |
| **IBR3/20** | 2000/5A | ring current transformer | 0.5 | 30 | 170 | 152 | 45 | **928.20** |
| **IBR3/25** | 2500/5A | ring current transformer | 0.5 | 30 | 170 | 152 | 45 | **938.70** |
| **IBR3/30** | 3000/5A | ring current transformer | 0.5 | 30 | 170 | 152 | 45 | **1 005.90** |
| **IBNP primary wound current transformers** | | | | | | | | |
| **IBNP/05** | 5/5A | primary wound CT | 0.5 | 2.5 | 111 | 68 | 43 | **362.25** |
| **IBNP/10** | 10/5A | primary wound CT | 0.5 | 2.5 | 111 | 68 | 43 | **362.25** |
| **IBNP/15** | 15/5A | primary wound CT | 0.5 | 2.5 | 111 | 68 | 43 | **362.25** |
| **IBNP/20** | 20/5A | primary wound CT | 0.5 | 2.5 | 111 | 68 | 43 | **362.25** |
| **IBNP/25** | 25/5A | primary wound CT | 0.5 | 2.5 | 111 | 68 | 43 | **362.25** |
| **IBNP/30** | 30/5A | primary wound CT | 0.5 | 2.5 | 111 | 68 | 43 | **362.25** |
| **IBNP/40** | 40/5A | primary wound CT | 0.5 | 2.5 | 111 | 68 | 43 | **362.25** |

**DC shunts** **75mV output**

- Accuracy: 0.50%
- Overload: 120% continuously, 1000% for 5 seconds

| type | current | output | description | dimensions (mm) (H) | (W) | (D) | mount holes centre | mount holes Ø | price |
|---|---|---|---|---|---|---|---|---|---|
| **FL-2/001-7** | 10A | 75mV | DC shunts | 120 | 25 | 14 | 100 | 6.5 | **218.40** |
| **FL-2/002-7** | 20A | 75mV | DC shunts | 120 | 25 | 14 | 100 | 8.5 | **218.40** |
| **FL-2/003-7** | 30A | 75mV | DC shunts | 120 | 25 | 14 | 100 | 8.5 | **218.40** |
| **FL-2/004-7** | 40A | 75mV | DC shunts | 120 | 25 | 14 | 100 | 8.5 | **218.40** |
| **FL-2/005-7** | 50A | 75mV | DC shunts | 120 | 25 | 14 | 100 | 8.5 | **218.40** |
| **FL-2/006-7** | 60A | 75mV | DC shunts | 109 | 23 | 11 | 85 | 8.5 | **396.90** |
| **FL-2/007-7** | 75A | 75mV | DC shunts | 109 | 23 | 11 | 85 | 8.5 | **396.90** |
| **FL-2/010-7** | 100A | 75mV | DC shunts | 109 | 23 | 11 | 85 | 8.5 | **455.70** |
| **FL-2/015-7** | 150A | 75mV | DC shunts | 118 | 22 | 22 | 85 | 8.5 | **494.55** |
| **FL-2/020-7** | 200A | 75mV | DC shunts | 118 | 22 | 22 | 85 | 8.5 | **514.50** |
| **FL-2/025-7** | 250A | 75mV | DC shunts | 127 | 46 | 22 | 100 | 10.5 | **535.50** |
| **FL-2/030-7** | 300A | 75mV | DC shunts | 127 | 46 | 22 | 100 | 10.5 | **614.25** |
| **FL-2/040-7** | 400A | 75mV | DC shunts | 127 | 46 | 22 | 100 | 10.5 | **831.60** |
| **FL-2/050-7** | 500A | 75mV | DC shunts | 127 | 46 | 22 | 100 | 10.5 | **1 030.05** |
| **FL-2/060-7** | 600A | 75mV | DC shunts | 127 | 76 | 22 | 100x50 | 4x10.5 | **1 291.50** |
| **FL-2/075-7** | 750A | 75mV | DC shunts | 127 | 76 | 22 | 100x50 | 4x10.5 | **1 543.50** |
| **FL-2/100-7** | 1000A | 75mV | DC shunts | 127 | 96 | 22 | 100x50 | 4x10.5 | **1 984.50** |

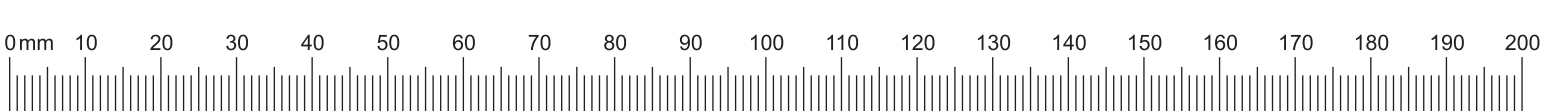
*60mV available on request*

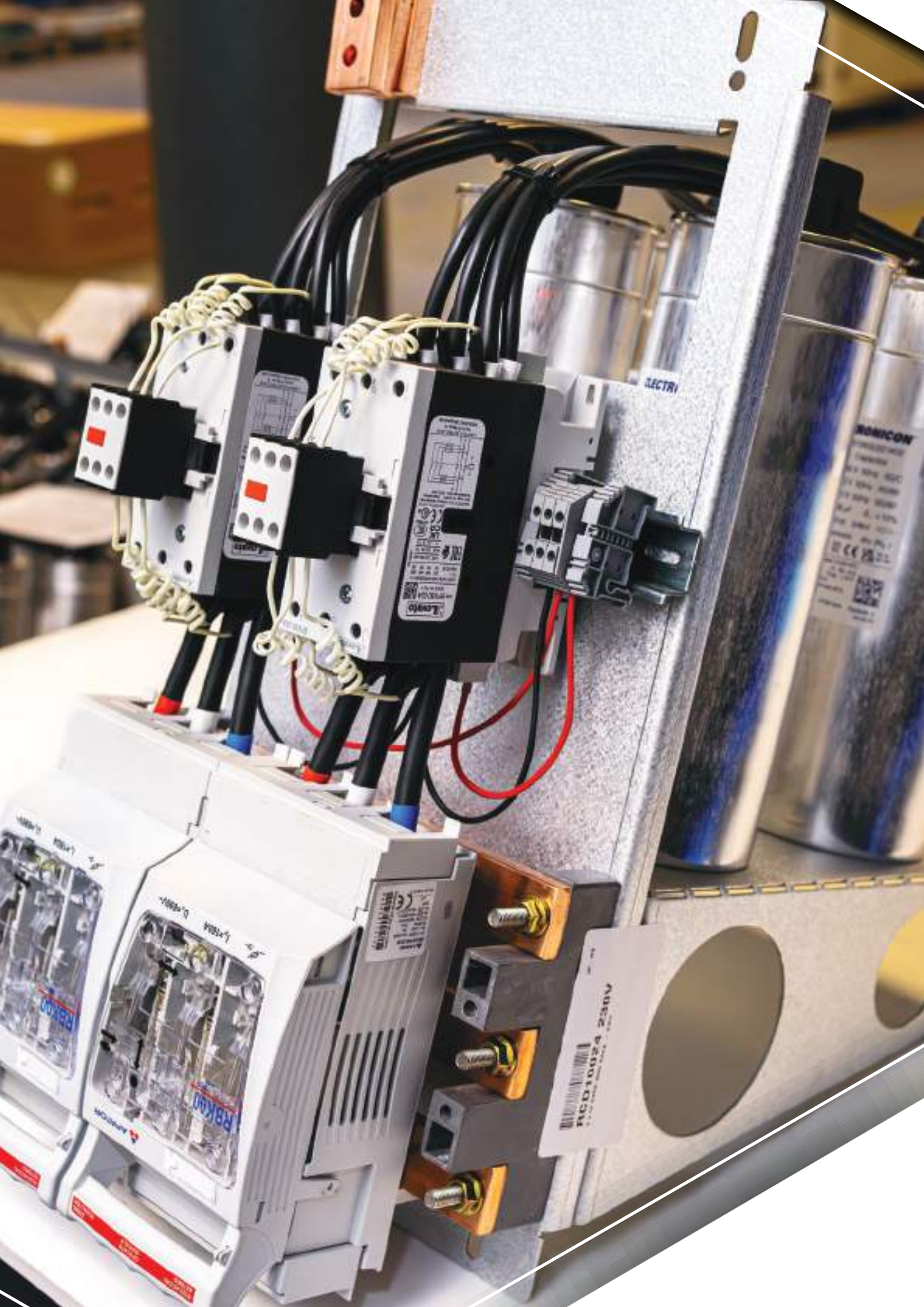
*Intermediate and larger sizes up to 10 000A also available on request*



Above ZAR prices do not include VAT. E&OE

# Notes


0 mm
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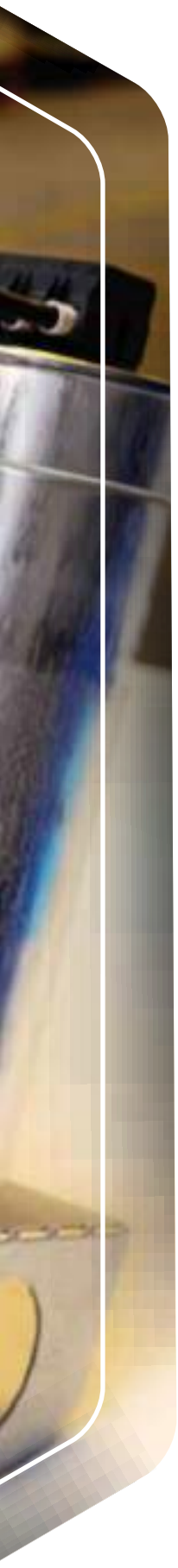




# F

# Power Quality

Interactive Catalogue



# Power Quality

F



Engine & Generator controllers

F-1...2



Automatic transfer switch controllers

F-3



Automatic battery chargers

F-4



Power factor controllers

F-5...6



Power factor correction (rack systems)

F-7...8



Power factor correction (floor standing systems)

F-9...10



Power factor correction (wall mount systems)

F-11



Active power filters

F-13



Static var generators

F-14

Need help navigating the interactive catalogue?
Scan the QR code for a short tutorial video.



RGK600

## Automatic mains failure (AMF) gen-set controllers

- Engine protection
- Programmable inputs and outputs / alarm properties
- Automatic starting of generator and load switching to stand-by emergency source in case of mains failure
- Supervision in “open transition” for contactors, motorised circuit breakers and changeover switches

| type | digital inputs | digital outputs | description | price |
|---|---|---|---|---|
| **RGK600 series** | | | 144 x 144 mm panel mounting | |
| - Universal supply: 7…33 VDC<br>- Display: Graphic LCD 128 x 80 pixels with backlight<br>- Measurement voltage: 50…576 VAC / Rated voltage: 480 VAC L-L<br>- Current input: 3PH, /5A or /1A<br>- Single, two and three phase voltage control - L1-L2-L3-N<br>- IR programming port on front panel for communication with PC<br>- 3 analog resistance input for oil pressure, engine temperature or fuel level control<br>- Customisable alarm text *(8 alarms)*<br>- Non-volatile memory for event storage<br>- Modbus-RTU and Modbus-ASCII protocols with expansion modules (***RGK610***) | | | | |
| **RGK600** | 4 | 6 | basic AMF gen-set controller<br>*with “W” or magnetic “pickup” for engine speed reading (no CANbus)* | **5 701.50** |
| **RGK601** | 4 | 6 | basic AMF gen-set controller<br>*with CANbus-J1939 (no “W” or magnetic “pickup”)* | **5 985.00** |
| **RGK610*** | 4 | 6 | basic AMF gen-set controller<br>*with “W” or magnetic “pickup” for engine speed reading (no CANbus)* | **6 058.50** |
| * *1 slot to accept plug-in expansion modules* ***EXP1010/1011/1012,*** *see controller accessories* | | | | |



RGK750

| | | | | |
|---|---|---|---|---|
| **RGK700 series** | | | 180 x 240 mm panel mounting | |
| *As above* ***RGK600*** *but with the following additional features:*<br>- Measurement voltage: 30…600 VAC / Rated voltage: 480 VAC L-L<br>- Rated voltage: RGK700 - 600 VAC L-L / RGK750 - 480 VAC L-L<br>- 1 USB/optical and Wi-Fi on front panel for programming and PC communication<br>- PLC logic for inputs, outputs and internal status<br>- Expansion bus with 2 slots for **EXP...** series expansion modules *(**RGK750** only)*<br>- Calendar-clock (RTC) with backup reserve energy | | | | |
| **RGK700** | 6 | 7 | grey AMF gen-set controller | **8 589.00** |
| **RGK750** | 8 | 10 | black AMF gen-set controller | **10 153.50** |
| **RGK800 series** | | | 180 x 240 mm panel mounting | |
| *As above* ***RGK750*** *but with the following additional features:*<br>- RS-485 communication (+ CANBUS)<br>- Neutral current measurement range: 0.050…6A or 1.2A<br>- 400Hz frequency support<br>- 1 programmable analog input<br>- Current leakage control<br>- Expandable with rear plug-in expansion *(up to 3)* modules *(see controller accessories)* | | | | |
| **RGK800** | 8 | 10 | fully featured AMF gen-set controller | **10 605.00** |




RGK750 (2 modules)
RGK800 (3 modules)
RGK900 (4 modules)

| | | | | |
|---|---|---|---|---|
| **Paralleling controllers** for *(mains - mains)* and *(generator - generator)*<br>• Engine protection<br>• Mains-generator “closed transition” synchronising<br>• Mains-generator load sharing with source peak demand control<br>• Generator paralleling supervision *(island mode with load sharing)* | | | | |
| **RGK900 series** | | | 180 x 240 mm panel mounting | |
| *As above* ***RGK800*** *but with the following additional features:*<br>- Voltage measurement range: 50-720 VAC / Rated voltage: 600 VAC L-L<br>- Frequency measurement range: 45…65Hz or 360…440Hz<br>- Display: Graphic LCD 128 x 112 pixels with backlight<br>- Customisable alarm text *(16 alarms)*<br>- Modbus-RTU, Modbus-ASCII and Modbus-TCP communication protocols<br>- 2 analog outputs for engine speed control *(governor)* / voltage regulator (AVR)<br>- Built-in buzzer, multi-level passwords, sleep function | | | | |
| **RGK900SA** | 12 | 10 | full featured stand alone gen-set controller | **46 305.00** |
| **RGK900** | 12 | 10 | mains-generator paralleling control | **47 040.00** |
| Control of mains, automatic transfer switching and paralleling on multiple generators controlled *by RGK900SA* | | | | |
| **RGK900MC** | 13 | 10 | Mains-ATS *(Automatic Transfer Switching)* controller | **35 910.00** |



RGK900



Above ZAR prices do not include VAT. E&OE

Sam1 NFC Xpress

## Stand alone gen-set controllers

- Engine protection
- Programmable alarm properties
- Programmable inputs and outputs
- Generator voltage and current control



RGK400SA



RGK420SA


RGK600SA

| type | digital inputs | digital outputs | description | price |
|---|---|---|---|---|
| **RGK400SA series** | | | 96 x 96 mm panel mounting | |

**RGK400SA** and **RGK420SA** with NFC technology are suitable for simple applications where only control, motor starting and monitoring of the electrical power alternator *(stand-alone applications, i.e. without the presence of the network)* are required.

- Universal supply: 12 / 24 VDC
- Display: LCD icon display
- Measurement voltage: 5...576 VAC
- Rated voltage: 480 VAC L-L
- Current Input: 1PH, /5A or /1A
- Engine protection: *With "W" or magnetic "pickup" for engine speed reading*
- 1 analog resistance input for oil pressure / engine temperature or fuel level control
- Single, two and three phase voltage control - L1-L2-L3-N
- Customisable alarm text *(2 alarms)*
- IR programming port on front panel for communication with PC ***(CX01,** see controller accessories)*
- NFC technology for parameter setup via smartphone or tablet

| | | | | |
|---|---|---|---|---|
| **RGK400SA** | 5+1 (E/stop) | 5 | stand alone gen-set controller | **4 105.50** |
| **RGK420SA*** | 5+1 (E/stop) | 5 | stand alone gen-set controller | **4 452.00** |

* *Incorporates 3 position key switch (OFF, local start, remote start)*

### RGK400SA accessories

Expansion modules *(rear plug-in)*

| | | |
|---|---|---|
| **EXP1040** | additional - 2 digital / resistance inputs, 2 static outputs | **3 402.00** |
| **EXP1041** | additional - 2 thermocouple inputs, 2 static outputs | **3 559.50** |
| **EXP8005** | housing gasket to increase protection to IP65 | **195.30** |

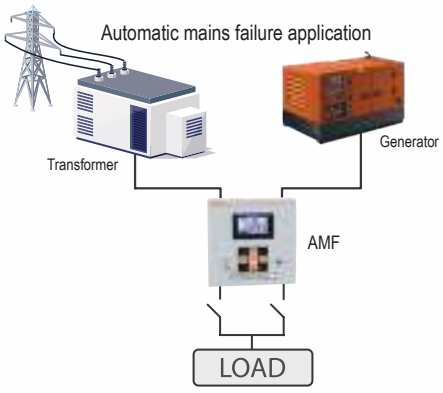
| | | | | |
|---|---|---|---|---|
| **RGK600SA series** | | | 144 x 144 mm panel mounting | |

*As above **RGK400SA** but with following additional features:*

- Universal supply: 12 / 24 VDC
- Display: Graphic LCD 128 x 80 pixels with backlight
- Measurement voltage: 50...576 VAC
- Rated voltage: 480 VAC L-L
- Current Input: 3PH, /5A or /1A
- Operating temperature: -30...+70°C
- 3 analog resistance input for oil pressure, engine temperature or fuel level control
- Customisable alarm text *(8 alarms)*
- No NFC technology
- Non-volatile memory for event storage
- Modbus-RTU and Modbus-ASCII protocols

| | | | | |
|---|---|---|---|---|
| **RGK600SA** | 4 | 6 | stand alone gen-set controller<br>*with "W" or magnetic "pickup" for engine speed reading (no CANbus)* | **5 376.00** |
| **RGK601SA** | 4 | 6 | stand alone gen-set controller<br>*with CANbus-J1939 (no "W" or magnetic "pickup")* | **5 649.00** |

## Engine / Generator controllers





ATL100

## Automatic Transfer Switch (ATS) controllers

- Tie-breaker management
- Remote control and supervision / Event logging
- Supervision of two or three three-phase power sources
- Automatic non-priority load management (ATL800, ATL900)
- Emergency demand supervision for stand-by generating sets
- Modbus-RTU, Modbus-ASCII and Modbus-TCP communication protocols
- IR programming port on front panel for communication with PC *(NFC on some models)*

Scan to watch video

| type | digital inputs | relay outputs | description | price |
|---|---|---|---|---|
| **ATL100 series (econo)** | | | *(no display)* *54 mm DIN mounting* | |
| **ATL100** | 2 | 3 | single phase automatic transfer switch controller | **7 350.00** |
| **ATL500 series (econo)** | | | *(no display)* *144 x 144 mm panel mounting* | |
| **ATL500** | 2 | 3 | 3-ph+N automatic transfer switch controller | **7 350.00** |
| **ATL600 series** | | | *(with LCD)* *144 x 144 mm panel mounting* | |
| **ATL600** | 6 | 7 | automatic transfer switch controller for 2 sources | **8 179.50** |
| **ATL601*** | 6 | 7 | automatic transfer switch controller for 2 sources | **8 179.50** |
| **ATL610*** | 6 | 7 | automatic transfer switch controller for 2 sources | **18 270.00** |
| **ATL800 series** | | | *(with backlit LCD)* *180 x 240 mm panel mounting* | |
| **ATL800** | 8 | 7 | automatic transfer switch controller for 2 sources | **53 130.00** |
| **ATL900 series** | | | *(with backlit LCD)* *180 x 240 mm panel mounting* | |
| **ATL900** | 12 | 11 | automatic transfer switch controller for 3 sources | **124 950.00** |

**ATL100** with its modular housing is suitable for monitoring two independent power sources and to manage switching between the two sources with single phase control.

- Supply voltage: 110...230 VAC
- Rated voltage: 110..230 VAC L-L
- 2 single phase inputs and outputs L+N
- Response thresholds of min and max voltage: 80% and 120% of nominal setting
- LED indication: 2 x *(green)* presence of both input voltages, 1 x presence of output voltage
  1 x *(red)* indicates presence voltage out of limits on inputs



ATL 500

NFC

The ATL500 is an automatic transfer switch that enables load commutation between two different source lines: a main line (LINE 1) and a standby or emergency secondary line (LINE 2).

- Supply voltage: Self seeking power supply - 110...240 VAC LN
- Measurement inputs: 3-ph+N *(suitable for 1 and 2 phase lines)*
- Supported switching devices: Contactors and motorised changeovers
- Output relay: 2 NO for contactors / 1 NC to start genset
- Parameter setup: Via built-in NFC technology *(smartphone or tablet)*
- Monitoring functions: Overvoltage, Undervoltage Phase failure
  Wrong phase sequence, Asymmetry, Over frequency
  Under frequency

- AC power supply 110...240 VAC
- Rated voltage: 100...480 VAC L-L
- Management of two power sources
- Measurement inputs for 3-ph+N voltage values *(suitable for 1 and 2-phase lines)*
- 128 x 80 pixel backlit graphic LCD to view measurements, events and alarms



ATL601

* *With 12/24 VDC supply*

### ATL610 series

*As above **ATL600** but with following additional features:*

- Real time clock RTC
- Dual power supply *(110...240 VAC line and 12...24 VDC battery supply)*
- Expandable with I/O and communication modules

* *2 slot to accept plug-in expansion modules **EXP1010/1011/1012/1013/1014,** see page **F-6***

*As above **ATL610** but with following additional features:*

- Rated voltage: 100...600 VAC L-L
- With backlit graphic LCD display
- Management of 2 energy sources and 1 tie breaker
- Built-in NFC technology for parameter setup via smartphone or tablet
- Built-in RS-485 communication / Built-in programmable PLC logic
- Expandable with up to 3 rear plug-in expansion modules **EXP...** *(see controller accessories)*



ATL900

NFC

*As above **ATL800** but with following additional features:*

- Management of 3 energy power sources and 2 tie breakers
- 4 current inputs for the three phases and neutral
- 14 preconfigured system layouts
- 128 x 112 backlit graphic LCD to view measurements, events and alarms



Above ZAR prices do not include VAT. E&OE




## Battery chargers

- For lead acid battery
- Switching technology
- Automatic reset at end of alarm conditions
- Charging cycle in accordance with DIN 41773 standards

| type | output voltage | output current | max. power consumption VA | max. power consumption W | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **BCF series** | **Modular automatic switching battery chargers** | | | | | | | | |
| • Alarm output relay *(3A 250 VAC)* AC1 duty<br>• Modular DIN-rail mounting *(aligns with standard MCB's)* or chassis mount<br>• Wide auxiliary supply range 100...240 VAC (±10%) 50/60Hz<br>• Protection: - Mains input fuse *(non replaceable)*<br>- Battery output fuse<br>- Electronic lock in case of short circuit on battery terminals, reverse battery polarity and output overload<br>• LED indication of: - Correct output voltage<br>- Reverse battery polarity | | | | | | | | | |
| **BCF025012** | 12V | 2.5A | 80 | 40 | auto battery charger | 96 | 90 | 56 | **2 110.50** |
| **BCF045012** | 12V | 4.5A | 150 | 70 | auto battery charger | 96 | 90 | 56 | **2 614.50** |
| **BCF012524** | 24V | 1.25A | 80 | 39 | auto battery charger | 96 | 90 | 56 | **2 110.50** |
| **BCF025024** | 24V | 2.5A | 150 | 77 | auto battery charger | 96 | 90 | 56 | **2 614.50** |
| **BCG series** | **DIN-rail mount switching battery chargers** | | | | | | | | |
| • High efficiency<br>• Alarm output relay *(5A 30 VDC duty)*<br>• Wide auxiliary supply range 110...240 VAC (±10%) 50/60Hz<br>• DIN-rail or chassis mounting *(can be mounted vertically with adaptor)*<br>• Boost signal controlled by external contact<br>• Hiccup function for battery recharging when its voltage is lower than 50% rated value<br>• Maximum charging current limiting trimmer 20...100% *(adjustable from front)*<br>• Protection: - Mains input fuse<br>- Electronic lock in case of short circuit on battery terminals, reverse battery polarity and output overload<br>• LED indication of: - Power ON<br>- Charging operation I>30% Ic<br>- Overload or short circuit condition<br>- Reverse battery polarity | | | | | | | | | |
| **BCG0612** | 12V | 6A | 230 | 97 | auto battery charger | 150 | 162 | 63 | **4 032.00** |
| **BCG1212** | 12V | 12A | 284 | 190 | auto battery charger | 150 | 213 | 63 | **7 801.50** |
| **BCG0524** | 24V | 5A | 364 | 158 | auto battery charger | 150 | 162 | 63 | **4 032.00** |
| **BCG1024** | 24V | 10A | 630 | 311 | auto battery charger | 150 | 213 | 63 | **7 801.50** |
| **Accessories for above BCG battery chargers** | | | | | | | | | |
| **BCGX00** | vertical side mount adaptor *(for space saving)* for ***BCG0612*** and ***BCG0524*** | | | | | | | | **145.95** |
| **BCE series** | **Linear battery chargers** | | | | | | | | |
| • Linear technology<br>• Auxiliary supply voltage: 220...240 VAC (±10%) 50/60Hz<br>• Charging current: 30 - 100% Ie *(adjustable)*<br>• Protection: - Mains input fuse *(except **BCE2V524** and **BCE0312**)*<br>- Battery output fuse<br>- Electronic lock in case of short circuit on battery terminals, reverse Battery polarity output overload (<0.5 Ue) and disconnected battery<br>• LED indication of: - Power ON<br>- Charge (I>0.2 Ic)<br>- Alarm for protection tripping<br>• Alarm output: Static NPN transistor **BCE2V5** and **BCE03** - others relay *(5A 250 VAC)* | | | | | | | | | |
| **BCE0312** | 12V | 3 | 117 | – | auto battery charger | 93 | 134 | 100 | **6 048.00** |
| **BCE0612** | 12V | 6 | 222 | – | auto battery charger | 130 | 192 | 140 | **9 744.00** |
| **BCE1212** | 12V | 12 | 400 | – | auto battery charger | 230 | 192 | 140 | **14 385.00** |
| **BCE2V524** | 24V | 2.5 | 166 | – | auto battery charger | 93 | 134 | 100 | **6 415.50** |
| **BCE0524** | 24V | 5 | 317 | – | auto battery charger | 130 | 192 | 140 | **10 489.50** |
| **BCE1024** | 24V | 10 | 610 | – | auto battery charger | 230 | 192 | 140 | **15 960.00** |


BCF...


BCG ...


BCE...



DCRL...

**DCRL / DCRG** Power Factor Controllers

DCRL/DCRG controllers incorporate latest technological advanced monitoring to provide accurate measurement and control of network parameters in power factor correction applications, providing total protection of capacitors and systems.

**General features:**

- Suitable for medium voltage systems (with VT's)
- High accuracy (TRMS) measurements with configurable alarms
- Wide voltage measurement range: 50...720 VAC L-L, 50....415 VAC L-N
- Expandable through clip-in expansion modules *(I/Os, Comm ports etc.)*
- Front mounted optic interface port for programming, data download, diagnostics

| type | number of steps | expand to: | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **DCRL controllers 3, 5 and 8 step** | | | *(one CT connection)* | | | | |
| **DCRL** series power factor controllers with advanced functionality in a dedicated ultra compact housing, combine modern front design with ease of mounting and expendability.<br>- Reactive power measurement per step installed<br>- 3, 5 or 8 steps *(expandable with expansion module)*<br>- Voltage and current THD with single harmonic analysis up to 15° order<br>- Backlit icon LCD display *(alarm codes with scrolling text)* 128 x 80 pixels | | | | | | | |
| **3 and 5 step controllers** | | | *1 expansion slot* | | | | |
| **DCRL 3** | 3 step | 6 step | panel mount power factor controller | 96 | 96 | 65 | **5 376.00** |
| **DCRL 5** | 5 step | 8 step | panel mount power factor controller | 96 | 96 | 65 | **6 216.00** |
| **8 step controllers** | | | *2 expansion slots* | | | | |
| **DCRL 8** | 8 step | 14 step | panel mount power factor controller | 144 | 144 | 44 | **8 977.50** |



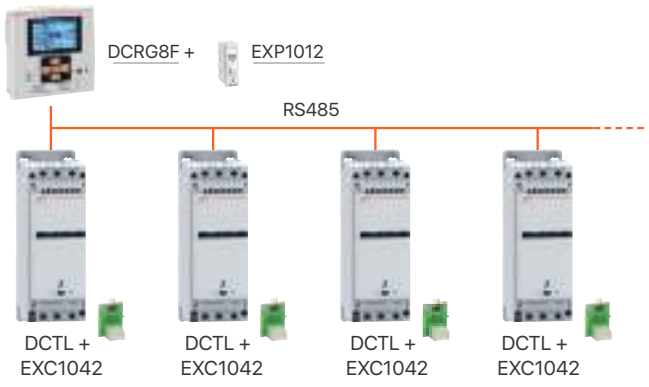
DCRG 8

| | | | | | | | |
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| **DCRG controllers 8 step** | | | *single and three-phase CT connection* | | | | |
| **DCRG** series power factor controllers are designed to satisfy technical characteristics of modern electrical installation requirements in all industries and working conditions, to detect critical operating conditions and offer total protection of power factor systems.<br>- Recording of number of connections per step<br>- Capacitor over-current protection on all three phases<br>- Voltage and current THD with single harmonic analysis up to 31° order<br>- 8 steps *(expandable by up to another 10 steps with plug-in expansion modules)*<br>- Backlit graphic LCD display *(permits reading in bar-graph and wave form format)*<br>- Configurable for fast dynamic *(thyristor)* switching or a combination of static and relay<br>- Quick CT programming function / Automatic identification of direction of CT current flow<br>- Calendar-clock (RTC) with backup reserve for event logging: Alarms, setup changes, etc.<br>- Connection to 1/3 ph lines, 3 ph + N and co-generation systems with 4 quadrant operation<br>- Three current inputs permit per phase analysis of all electrical parameters in the installation | | | | | | | |
| **8 relay step controller** | | | *4 expansion slots* | | | | |
| **DCRG 8** | 8 step | 18 step | panel mount power factor controller | 144 | 144 | 44 | **12 390.00** |
| **8 thyristor static step controller** *(expandable up to 24 steps with expansion modules)* | | | | | | | |
| **DCRG 8F** | 8 step | 24 step | static step power factor controller | 144 | 144 | 44 | **14 385.00** |
| *For expansion modules options, see* ***F-6*** | | | | | | | |

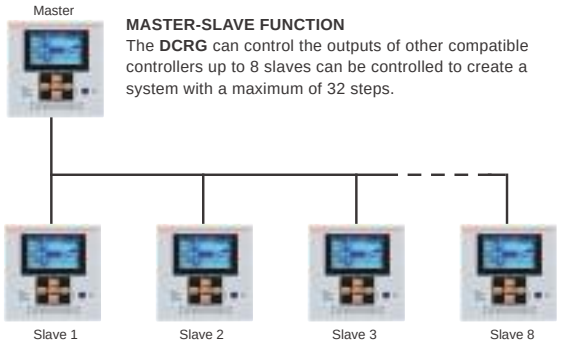


DCRG 8F

## DCRG - Power factor controllers




The thyristor modules type **DCTL** can be connected to the automatic power factor controller type **DCRG8F** with the RS485 optional port (code **EXC1042**), obtaining a simple and linear wiring.




**MASTER-SLAVE FUNCTION**
The **DCRG** can control the outputs of other compatible controllers up to 8 slaves can be controlled to create a system with a maximum of 32 steps.



Above ZAR prices do not include VAT. E&OE

Sam1 NFC Xpress



EXP...



CX02



CX01

## Expansion modules for PFC controllers

**EXP...** series expansion modules add extra functionality to following panel mount products:

**DMG** 600/7000/8000/9000 - Digital multimeters and power analysers
**DCRL** and **DCRG** - Automatic power factor controllers
**ATL** 610/800/900 - Automatic transfer controllers
**RGK** 400/600/750/800/900 - Generator controllers

| type | inputs | outputs | description | price |
|---|---|---|---|---|
| **EXP expansion modules** | | | *(plug into rear of controller to add more functionality)* | |
| **Inputs/Outputs** | | | | |
| **EXP1006** | – | 2 relay | to increase number of capacitor steps | **1 197.00** |
| **EXP1007** | – | 3 relay | to increase number of capacitor steps | **2 740.50** |
| **EXP1000** | 4 digital | – | opto-isolated digital inputs | **2 425.50** |
| **EXP1001** | – | 4 static | opto isolated to increase static steps | **2 425.50** |
| **EXP1002** | 2 digital | 2 static | opto-isolated digital inputs and static outputs | **2 898.00** |
| **EXP1003** | – | 2 relay | outputs rated 5A 250 VAC | **2 898.00** |
| **EXP1004** | 2 analog | – | opto-isolated PT100, 0/4-20mA, 0-10V, 0…±5V | **8 694.00** |
| **EXP1005** | – | 2 analog | opto-isolated 0/4-20mA or 0-10V or 0…±5V | **8 694.00** |
| **EXP1016** | 3ph (A) | – | + 2 x NTC for capacitor bank protection | **7 822.50** |
| **Communication** | | | | |
| **EXP1010** | USB | – | opto-isolated USB interface | **4 347.00** |
| **EXP1011** | RS-232 | – | opto-isolated RS-232 interface | **4 347.00** |
| **EXP1012** | RS-485 | – | opto-isolated RS-485 interface | **2 194.50** |
| **EXP1013** | Ethernet | – | opto-isolated Ethernet with web server function | **5 386.50** |
| **EXP1014** | Profibus | – | opto-isolated Profibus-DP interface | **18 060.00** |
| **Accessories** | | | | |
| **51C2** | | | PC - DCRL/DCRG connecting cable + **EXP1011** module | **1 323.00** |
| **C9 cable** | | | PC - Analog modem connecting cable | **1 785.00** |
| **CX01** | | | PC - controller USB dongle with connecting cable | **4 368.00** |
| **CX02** | | | PC - Controller Wi-Fi dongle for programming, data download, diagnostics | **10 920.00** |



## Monitor the key aspects of your Power Factor Correction system

POLAR CLOUD

Enhance efficiency and control with advanced Polar Cloud remote monitoring solution for floor-standing power factor correction systems. Instantly access critical data, make quick adjustments, and optimise energy usage without the need for constant on-site supervision. Prevent costly downtimes and address potential issues proactively.

### Polar Cloud allows you to monitor:

- **Power Factor:** View power factor and adjust power factor setpoints
- **Total Harmonic Distortion:** Monitor THDi and THDu levels
- **Voltage and Current:** Gain instant access to voltage and current data
- **Temperature:** Keep your equipment safe by monitoring temperature levels remotely
- **Capacitor Status:** Stay informed about the health of your capacitors

**Monitor what matters most with Polar Cloud - available now on request**



275.525-701400

## MKPg-275 series - Three-phase cylindrical capacitors

MKPg-275 three-phase power capacitors, dry self-healing dielectric, gas filled (N2) protecting windings from environmental influences extending life expectancy, permitting mounting in any position.

- Capacitance tolerance: -5...+10%
- Max. permissible current: 1.5...2 In
- Max. inrush current: 300 x In
- Dielectric losses: <0.25 W/kvar
- Impregnant *(filling):* Inert insulation gas (N2) completely harmless to the environment
- Mounting: M12 base mounted fixing stud *(any position)*
- Protection: Overpressure disconnection facility
- Standards: IEC/EN 60831, VDE 0560-46/47, CSA C22.2 - 190-M1985, UL - 810, GOST 1282-88



275.186-405600

### 400...440V three-phase capacitors

*Supplied with discharge resistors*

- Rated voltage: 400...440V, 50 Hz
- Temp category: **-50/D** -50°C to +55°C Max. *(24 hr average 45°C - annual average 35°C)*
- Duty: Continuous *(life expectancy > 100.000 h)*

| type | kvar at: 400V | 440V | 480V | CN µF 3 x | description | dimensions (mm) (H) | Ø | price |
|---|---|---|---|---|---|---|---|---|
| **275.548-408200** | **12.5** | 15 | – | 82 | 3-ph cylindrical capacitor | 245 | 75 | **2 142.00** |
| **275.269-416600** | **25** | 30 | – | 166 | 3-ph cylindrical capacitor | 280 | 95 | **3 213.00** |
| **275.39B-527400*** | **41** | 50 | – | 274 | 3-ph cylindrical capacitor | 295 | 136 | **5 890.50** |
| **275.105-10068*** | discharge resistor module for **275.39B-527400** capacitor | | | | | 3 x 68 kΩ | | **103.95** |

### 400...480V three-phase industrial capacitors

- For PFC equipment in mains with severe operating conditions or substantial voltage fluctuations.
- Temp category: **60** -50°C...+60°C Max. *(24 hr average 50°C - annual average 40°C)*
- Duty: Continuous *(life expectancy > 150,000 h)*
- Supplied with discharge resistors *(except * require separate discharge module)*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **275.523-502800** | **4.2** | 5 | 6.1 | 33 | 3-ph cylindrical capacitor | 196 | 60 | **1 722.00** |
| **275.545-504000** | **6.2** | 7.5 | 8.7 | 40 | 3-ph cylindrical capacitor | 164 | 75 | **1 995.00** |
| **275.546-505800** | **8.3** | 10 | 12.5 | 58 | 3-ph cylindrical capacitor | 230 | 75 | **1 995.00** |
| **275.546-506800** | **10.0** | 12.5 | 15.0 | 68 | 3-ph cylindrical capacitor | 230 | 75 | **2 173.50** |
| **275.256-508300** | **12.5** | 15.0 | 18.0 | 83 | 3-ph cylindrical capacitor | 230 | 85 | **2 383.50** |
| **275.266-511100** | **16.8** | 20.0 | 24.1 | 111 | 3-ph cylindrical capacitor | 230 | 95 | **2 971.50** |
| **275.278-513700** | **20.0** | 25.0 | 30.0 | 137 | 3-ph cylindrical capacitor | 245 | 100 | **2 992.50** |
| **275.279-516600** | **25.0** | 30.0 | 36.0 | 166 | 3-ph cylindrical capacitor | 280 | 100 | **3 129.00** |
| **275.389-519900*** | **30.0** | 36.0 | 43.0 | 199 | 3-ph cylindrical capacitor | 280 | 116 | **3 801.00** |
| **275.389-522100*** | **33.3** | 40.0 | 48.0 | 221 | 3-ph cylindrical capacitor | 280 | 116 | **4 231.50** |
| **275.100-10120*** | discharge resistor module for **275.389-519900** capacitor | | | | | 3 x 120 kΩ | | **94.50** |
| **275.105-10100*** | discharge resistor module for **275.389-522100** capacitor | | | | | 3 x 100 kΩ | | **110.25** |



275.396-715401

### 525V three-phase capacitors

- Temperature category: **D** -40°C...+55°C (Max: 24 hr average 45°C - annual ave 35°C)
- Duty: Continuous *(life expectancy 480V >150000 h 525V >100000 h)*
- Supplied with discharge resistors *(except * require separate discharge module)*

| type | kvar at: 400V | 480V | **525V** | CN µF 3 x | description | dimensions (mm) (H) | Ø | price |
|---|---|---|---|---|---|---|---|---|
| **275.525-701400** | 2.2 | 3.0 | **3.6** | 14 | 3-ph cylindrical capacitor | 164 | 60 | **1 554.00** |
| **275.535-601900** | 3 | 4.1 | **5** | 19 | 3-ph cylindrical capacitor | 164 | 65 | **1 627.50** |
| **275.546-703800** | 6.2 | 8.3 | **10** | 38 | 3-ph cylindrical capacitor | 230 | 75 | **2 026.50** |
| **275.548-605800** | 9.4 | 12.5 | **15** | 58 | 3-ph cylindrical capacitor | 245 | 75 | **2 079.00** |
| **275.266-607700** | 12.5 | 16.7 | **20** | 77 | 3-ph cylindrical capacitor | 230 | 95 | **2 824.50** |
| **275.269-611500** | 18.6 | 25.0 | **30** | 115 | 3-ph cylindrical capacitor | 280 | 95 | **3 223.50** |
| **275.396-715401*** | 25 | 33.4 | **40** | 154 | 3-ph cylindrical capacitor | 230 | 136 | **4 714.50** |
| **275.105-10100*** | discharge resistor module for 40 kvar 525V capacitor | | | | | 3 x 100 kΩ | | **110.25** |



275.100-10120

### 690V three-phase capacitors

- Temperature category: **60** -40°C...+60°C *(Max: 24 hr average 50°C - annual ave 40°C)*
- Duty: Continuous *(life expectancy > 150000 h)*

| type | kvar at: 690V | 760V | 400 | CN µF 3 x | description | dimensions (mm) (H) | Ø | price |
|---|---|---|---|---|---|---|---|---|
| **275.185-402800*** | **12.5** | 15 | – | 27.6 | 3-ph cylindrical capacitor | 164 | 116 | **3 255.00** |
| **275.186-405600*** | **25** | 30 | – | 56 | 3-ph cylindrical capacitor | 230 | 116 | **3 832.50** |
| **275.39B-411100*** | **50** | 60 | – | 111 | 3-ph cylindrical capacitor | 295 | 136 | **6 321.00** |
| **275.100-10300*** | discharge resistor module for 12.5/25 kvar 690V capacitor | | | | | 3 x 300 kΩ | | **91.35** |
| **275.105-10180*** | discharge resistor module for 50 kvar 690V capacitor | | | | | 3 x 180 kΩ | | **103.95** |



Above ZAR prices do not include VAT. E&OE


RCS...

## RC series - Power Factor Correction (PFC) rack system

RC series power factor racks *(single and double step versions)* are designed for direct panel mounting onto vertical supports within floor standing electrical panels. The 7% and 14% detuned harmonic reactors are available for networks with high level of harmonics.

**RC series - Rack design incorporates the following:**

- Sheet metal mounting frame for easy panel mounting
- Electronicon heavy duty "gas filled" cylindrical capacitors *(with integrated discharge resistors)*
- Special capacitor switching contactors 400VAC coil *(230V on request)*
- Three-phase busbar mounted fuse disconnector with hinged fuse protection cover
- Suitably rated HRC fuses per phase of each capacitor bank
- Incorporated busbar, supports and inter-connecting busbar links

| type | kvar at: 400V | 440V | 480V | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **RC series - Racks (480V capacitors)** *without harmonic reactors* | | | | | | | | |
| **Single-step racks - 480V capacitors** - fuse protection | | | | | | | | |
| **RCS01204** | **12.5** | 14 | 17 | single step capacitor rack | 270 | 545 | 320 | **9 597.00** |
| **RCS02504** | **25** | 28 | 34 | single step capacitor rack | 270 | 545 | 320 | **12 390.00** |
| **RCS05004** | **50** | 56 | 67 | single step capacitor rack | 270 | 545 | 320 | **17 325.00** |
| **Double-step racks 480V capacitors** - separate fuse protection for each bank | | | | | | | | |
| **RCD02524** | **2 x 12.5** | 2 x 14 | 2 x 17 | double step capacitor rack | 270 | 545 | 320 | **14 910.00** |
| **RCD05024** | **2 x 25** | 2 x 28 | 2 x 34 | double step capacitor rack | 270 | 545 | 320 | **20 580.00** |
| **RCD10024** | **2 x 50** | 2 x 56 | 2 x 68 | double step capacitor rack | 270 | 545 | 320 | **30 555.00** |
| **RCD03734** | **12.5+25** | 14 + 28 | 17 + 34 | double step capacitor rack | 270 | 545 | 320 | **17 745.00** |
| **RCD07534** | **25 + 50** | 28 + 56 | 34 + 68 | double step capacitor rack | 270 | 545 | 320 | **25 620.00** |


RCD...

| type | kvar at: 400V | 525V | **550V** | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Double-step racks - 690V capacitors** *for use in 400/525/550V networks (230V coil)* | | | | | | | | |
| **RCD64026** | 2 x 17 | 2 x 30 | **2 x 32** | double step capacitor rack | 270 | 545 | 320 | **34 230.00** |

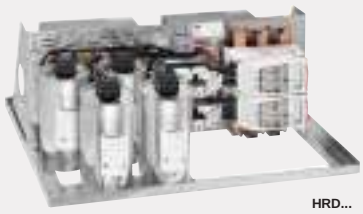
**HR7 series - Racks (480V capacitors)** with 7% detuned reactors

**7% - 189 Hz Detuned reactors** *for networks with a high level of 5th and 7th Harmonics*

| type | kvar at: 400V | 440V | 480V | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Single-step racks 480V capacitors -** *fuse protection* | | | | | | | | |
| **HRS013074** | **12.5** | 14 | 17 | capacitor + 7% reactor rack | 310 | 740 | 538 | **17 010.00** |
| **HRS025074** | **25** | 28 | 34 | capacitor + 7% reactor rack | 310 | 740 | 538 | **26 145.00** |
| **HRS050074** | **50** | 56 | 67 | capacitor + 7% reactor rack | 310 | 740 | 538 | **37 065.00** |
| **Double-step racks 480V capacitors -** *separate fuse protection for each bank* | | | | | | | | |
| **HRD025274** | **2 x 12.5** | 2 x 14 | 2 x 17 | capacitor + 7% reactor rack | 310 | 740 | 538 | **27 405.00** |
| **HRD050274** | **2 x 25** | 2 x 28 | 2 x 34 | capacitor + 7% reactor rack | 310 | 740 | 538 | **45 465.00** |
| **HRD100274** | **2 x 50** | 2 x 56 | 2 x 68 | capacitor + 7% reactor rack | 310 | 740 | 538 | **67 620.00** |
| **HRD038374** | **12.5+25** | 14 + 28 | 17 + 34 | capacitor + 7% reactor rack | 310 | 740 | 538 | **36 435.00** |
| **HRD075374** | **25 + 50** | 28 + 56 | 34 + 68 | capacitor + 7% reactor rack | 310 | 740 | 538 | **56 700.00** |

**HR14 series - Racks (525V capacitors)** with 14% detuned reactors

**14% - 134 Hz Detuned reactors** *for networks with a high level of 3rd Harmonics*


HRD...

| type | kvar at: 400V | 440V | 480V | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Single-step racks 525V capacitors -** *fuse protection* | | | | | | | | |
| **HRS054144** | **50** | 56 | 68 | capacitor + 14% reactor rack | 310 | 740 | 538 | **46 410.00** |
| **Double-step racks 525V capacitors -** *separate fuse protection for each bank* | | | | | | | | |
| **HRD025144** | **2 x 12.5** | 2 x 14 | 2 x 17 | capacitor + 14% reactor rack | 310 | 740 | 538 | **34 125.00** |
| **HRD050144** | **2 x 25** | 2 x 28 | 2 x 34 | capacitor + 14% reactor rack | 310 | 740 | 538 | **58 905.00** |
| **HRD038144** | **12.5+25** | 14 + 28 | 17 + 34 | capacitor + 14% reactor rack | 310 | 740 | 538 | **46 410.00** |

Scan here



Scan above to try the PFC Calculator.

**FMS series - Power factor Correction (PFC)** *(automatic)*

For applications with varying capacitor requirements. An automatic reactive controller monitors the network and only switches capacitor banks when required, avoiding potential over or under compensation in a network.

**FMS series - Floor standing systems**

**Complete ready-to-install system comprising following:**

- Suitably ventilated floor standing enclosure *(thermostatically controlled roof mounted exhaust fan)*
- Mains isolator, door interlocking *(with early make/late break auxiliary contact)*
- **DCRG 8** high end reactive control relay *(incorporating digital display of all important network parameters)*
- Bottom cable entry *(top entry available on request)*
- RC series racks with heavy duty capacitors, fusegear, capacitor switching contactors and busbar system

Able to monitor all three phase voltage and current to providing accurate indication of:

- Active, Apparent Power as well as Active, Reactive, Apparent Energy monitoring
- Current and Voltage Harmonics analysis *(up to 31st harmonic)*
- Event logging: alarms, setup changes, events etc. *(internal memory stores last 250 events)*
- Internal panel temperature monitoring
- Expandable with up to 4 expansion modules for:
  Analog Inputs/Outputs, RS-323, RS-485, Ethernet, optional remote monitoring



FMS...

| type | kvar at: | | steps (kvar) at 400V | | | | Expands | dimensions (mm) | | | price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **400V** | 440V | 12.5 | 25 | 50 | 100 | to (kvar) | (H) | (W) | (D) | |
| **FMS series - 400V Floor standing complete PFC systems** *(480V capacitors)* | | | | | | | | | | | |
| • *Using 480V heavy duty capacitors with RC racks for use in 400V networks* | | | | | | | | | | | |
| **400V floor standing complete power factor systems** | | | | | | | | | | | |
| **FMS13804** | **138** | 165 | 1 | 1 | 2 | – | 475 | 2180 | 600 | 630 | **101 745.00** |
| **FMS17504** | **175** | 210 | – | 1 | 3 | – | 475 | 2180 | 600 | 630 | **110 250.00** |
| **FMS21304** | **213** | 255 | 1 | 2 | 3 | – | 475 | 2180 | 600 | 630 | **128 100.00** |
| **FMS23804** | **238** | 285 | 1 | 1 | 2 | 1 | 475 | 2180 | 600 | 630 | **132 300.00** |
| **FMS27504** | **275** | 330 | – | 1 | 3 | 1 | 475 | 2180 | 600 | 630 | **140 700.00** |
| **FMS31304** | **313** | 375 | 1 | 2 | 1 | 2 | 475 | 2180 | 600 | 630 | **158 550.00** |
| **FMS33804** | **338** | 390 | 1 | 1 | 2 | 2 | 475 | 2180 | 600 | 630 | **163 800.00** |
| **FMS37504** | **375** | 450 | – | 1 | 3 | 2 | 475 | 2180 | 600 | 630 | **171 150.00** |
| **FMS43804** | **438** | 525 | 1 | 1 | 2 | 3 | 475 | 2180 | 600 | 630 | **194 250.00** |
| **FMS47504** | **475** | 570 | – | 1 | 1 | 4 | – | 2180 | 600 | 630 | **202 650.00** |
| **Double floor standing panels*** | | | | | | | | | | | |
| **FMS57524*** | **575** | 690 | – | 1 | 1 | 5 | 950 | 2180 | 1200 | 630 | **260 400.00** |
| **FMS67524*** | **675** | 810 | – | 1 | 1 | 6 | 950 | 2180 | 1200 | 630 | **304 500.00** |
| **FMS77524*** | **775** | 930 | – | 1 | 1 | 7 | 950 | 2180 | 1200 | 630 | **336 000.00** |
| **FMS87524*** | **875** | 1050 | – | 1 | 1 | 8 | 950 | 2180 | 1200 | 630 | **368 550.00** |

| type | kvar at: | | | step kvar at 550V | | Expands | dimensions (mm) | | | price |
|---|---|---|---|---|---|---|---|---|---|---|
| | 400V | 525V | **550V** | 32 | 64 | to (kvar) | (H) | (W) | (D) | |
| **FMS series - 550V Floor standing complete PFC systems** *(690V capacitors)* | | | | | | | | | | |
| • *Using 690V heavy duty capacitors with RC racks for use in 400/525/550V networks* | | | | | | | | | | |
| **FMS12806** | 68 | 120 | **128** | 2 | 1 | 320 | 2180 | 600 | 630 | **122 850.00** |
| **FMS19206** | 102 | 180 | **192** | 2 | 2 | 320 | 2180 | 600 | 630 | **156 450.00** |
| **FMS25606** | 136 | 240 | **256** | 2 | 3 | 320 | 2180 | 600 | 630 | **191 100.00** |
| **FMS32006** | 170 | 300 | **320** | 2 | 4 | – | 2180 | 600 | 630 | **224 700.00** |
| **FMS38426*** | 204 | 360 | **384** | 2 | 5 | 640 | 2180 | 1200 | 630 | **301 350.00** |
| **FMS44826*** | 238 | 420 | **448** | 2 | 6 | 640 | 2180 | 1200 | 630 | **337 050.00** |
| **FMS51226*** | 272 | 480 | **512** | 2 | 7 | 640 | 2180 | 1200 | 630 | **370 650.00** |
| **FMS57626*** | 306 | 540 | **576** | 2 | 8 | 640 | 2180 | 1200 | 630 | **405 300.00** |
| **FMS64026*** | 340 | 600 | **640** | 2 | 9 | – | 2180 | 1200 | 630 | **441 000.00** |
| **FMS70426**** | 374 | 660 | **704** | 2 | 10 | 960 | 2180 | 1800 | 630 | **515 550.00** |
| **FMS76826**** | 408 | 720 | **768** | 2 | 11 | 960 | 2180 | 1800 | 630 | **549 150.00** |
| **FMS83226**** | 442 | 780 | **832** | 2 | 12 | 960 | 2180 | 1800 | 630 | **583 800.00** |
| **FMS89626**** | 476 | 840 | **896** | 2 | 13 | 960 | 2180 | 1800 | 630 | **617 400.00** |
| **FMS96026**** | 510 | 900 | **960** | 2 | 14 | – | 2180 | 1800 | 630 | **652 050.00** |

*Larger systems are made up with two (*) or three (**) panels each incorporating an individual isolator requiring supply cable to be split between the isolators.*



Above ZAR prices do not include VAT. E&OE



DCRG 8 (Door mount)



FHS...

**FHS series - Floor standing power factor systems** *(with anti-harmonic detuned reactors)*

- For networks with THDU ≤6% and/or THDI ≤40%

Growing use of power electronic devices such as: variable speed drives, inverters, UPS systems, battery chargers, LED lighting etc. is causing increasing levels of harmonic distortion in electrical networks, often leading to problems with capacitor installations.

Installation of detuned *(reactor-connected)* capacitors designed to force the resonant frequency of the network below the frequency of the lowest harmonic present *(usually the 5th)* thereby ensuring no resonant circuit or amplification of harmonic currents. Such an installation also has a partial filtering effect, reducing the level of voltage distortion on the supply.

Detuned capacitors are safer than non-detuned capacitors and future-proof for conditions of more and more deteriorating power quality in modern mains.

**Complete ready-to-connect floor standing power factor system comprising:**

- Suitably ventilated floor standing enclosure with roof mounted exhaust fan
- Mains isolator, door interlocking *(with early make/late break auxiliary contact)*
- HR heavy duty racks comprising: capacitors, reactors, switchgear, fusegear and busbars
- High end reactive control relay DCRG 8 *(incorporating digital display of all important network parameters)*

  Configurable to monitor three voltage and current phases and provide accurate indication of:
  - Active, Apparent power as well as Active, Reactive, Apparent Energy monitoring
  - Current and Voltage Harmonics analysis *(up to 31st harmonic)*
  - Calendar-clock with backup reserve power
  - Event logging: alarms, setup, changes, etc. *(internal memory stores last 250 events)*
  - Internal panel temperature monitoring
- Expandable with up to 4 expansion modules for:
  - Additional steps, Analog I/O's, RS-323, RS-485, Ethernet, optional - remote monitoring

| type | kvar at: | | steps (kvar) at 400V | | | | Expands | dimensions (mm) | | | price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **400V** | 440V | 12.5 | 25 | 50 | 100 | to kvar | (H) | (W) | (D) | |
| **Anti-harmonic systems** incorporating 7% detuned reactors *(480V capacitors)* | | | | | | | | | | | |
| • **7% - 189 Hz detuned reactors** *for 400V networks with a high level of 5th and 7th Harmonic* | | | | | | | | | | | |
| **FHS138074** | **138** | 165 | 1 | 1 | 2 | – | 375 | 2280 | 900 | 600 | **172 200.00** |
| **FHS175074** | **175** | 210 | – | 1 | 3 | – | 375 | 2280 | 900 | 600 | **193 200.00** |
| **FHS213074** | **213** | 255 | 1 | 2 | 3 | – | 375 | 2280 | 900 | 600 | **228 900.00** |
| **FHS238074** | **238** | 285 | 1 | 1 | 2 | 1 | 375 | 2280 | 900 | 600 | **240 450.00** |
| **FHS275074** | **275** | 330 | – | 1 | 1 | 2 | 375 | 2280 | 900 | 600 | **260 400.00** |
| **FHS313074** | **313** | 375 | 1 | 2 | 1 | 2 | 375 | 2280 | 900 | 600 | **297 150.00** |
| **FHS338074** | **338** | 405 | 1 | 1 | 2 | 2 | 375 | 2280 | 900 | 600 | **307 650.00** |
| **FHS375074** | **375** | 450 | – | 1 | 1 | 3 | – | 2280 | 900 | 600 | **328 650.00** |
| **FHS438074*** | **438** | 525 | 1 | 1 | 2 | 3 | 775 | 2280 | 1800 | 600 | **431 550.00** |
| **FHS475074*** | **475** | 570 | – | 1 | 1 | 4 | 775 | 2280 | 1800 | 600 | **452 550.00** |
| **FHS538074*** | **538** | 645 | 1 | 1 | 2 | 4 | 775 | 2280 | 1800 | 600 | **499 800.00** |
| **FHS575074*** | **575** | 690 | – | 1 | 1 | 5 | 775 | 2280 | 1800 | 600 | **519 750.00** |
| **FHS638074*** | **638** | 765 | 1 | 1 | 2 | 5 | 775 | 2280 | 1800 | 600 | **567 000.00** |
| **FHS675074*** | **675** | 810 | – | 1 | 1 | 6 | 775 | 2280 | 1800 | 600 | **588 000.00** |
| **FHS738074*** | **738** | 885 | 1 | 1 | 2 | 6 | 775 | 2280 | 1800 | 600 | **635 250.00** |
| **FHS775074*** | **775** | 930 | – | 1 | 1 | 7 | – | 2280 | 1800 | 600 | **656 250.00** |
| **FHS838074**** | **838** | 1005 | 1 | 1 | 2 | 7 | 975 | 2280 | 2700 | 600 | **759 150.00** |
| **FHS875074**** | **875** | 1050 | – | 1 | 1 | 8 | 975 | 2280 | 2700 | 600 | **779 100.00** |
| **FHS975074**** | **975** | 1170 | – | 1 | 1 | 9 | – | 2280 | 2700 | 600 | **847 350.00** |
| **Anti-harmonic systems** incorporating 14% detuned reactors *(525V capacitors)* | | | | | | | | | | | |
| • **14% - 134 Hz detuned reactors** *for 400V networks with a high level of 3rd Harmonic* | | | | | | | | | | | |
| **FHS138144** | **138** | 165 | 1 | 1 | 2 | – | 203 | 2280 | 900 | 600 | **207 900.00** |
| **FHS150144** | **150** | 180 | – | 2 | 2 | – | 203 | 2280 | 900 | 600 | **220 500.00** |
| **FHS200144** | **200** | 240 | – | 2 | 3 | – | – | 2280 | 900 | 600 | **266 700.00** |
| **FHS238144*** | **238** | 285 | 1 | 1 | 4 | – | 432 | 2280 | 1800 | 600 | **355 950.00** |
| **FHS288144*** | **288** | 345 | 1 | 1 | 5 | – | 432 | 2280 | 1800 | 600 | **402 150.00** |
| **FHS300144*** | **300** | 360 | – | 2 | 5 | – | 432 | 2280 | 1800 | 600 | **414 750.00** |
| **FHS350144*** | **350** | 420 | – | 2 | 6 | – | 432 | 2280 | 1800 | 600 | **462 000.00** |
| **FHS400144*** | **400** | 480 | – | 2 | 7 | – | – | 2280 | 1800 | 600 | **509 250.00** |
| **FHS450144**** | **450** | 540 | – | 2 | 8 | – | 648 | 2280 | 2700 | 600 | **555 450.00** |
| **FHS500144**** | **500** | 600 | – | 2 | 9 | – | 648 | 2280 | 2700 | 600 | **657 300.00** |
| **FHS550144**** | **550** | 660 | – | 2 | 10 | – | 648 | 2280 | 2700 | 600 | **703 500.00** |
| **FHS600144**** | **600** | 720 | – | 2 | 11 | – | 648 | 2280 | 2700 | 600 | **749 700.00** |

*Larger systems are made up with two (*) or three (**) panels each incorporating an individual isolator requiring supply cable to be split between the isolators.*



WMS...

## WMS series - Wall-mount power factor systems *(automatic)* 400/440V

For applications with varying capacitor requirements. An automatic reactive controller monitors the network and only switches capacitor banks when required, avoiding potential over or under compensation in a network.

**Complete ready-to-install system comprising following:**

- Reverse-flow fan ventilated wall-mount enclosure, bottom cable entry *(top entry on request)*
- Mains isolator, door interlocking *(with early make / late break auxiliary)*
- Heavy duty three phase capacitors *(with internal discharge resistors)*
- Reactive control relay DCRL 5 *(digital display of all important electrical network parameters)*
- "Special" capacitor switching contactors incorporating limiting resistors
- HRC fuse protection *(per capacitor bank)*

| type | kvar at: | | steps (kvar) at 415V | | | Expands | dimensions (mm) | | | price |
|---|---|---|---|---|---|---|---|---|---|---|
| | **400V** | 440V | 12.5 | 25 | 50 | to (kvar) | (H) | (W) | (D) | |
| **WM series - Wall-mount complete PFC systems** *(440V capacitors)* | | | | | | | | | | |
| **WMS03804** | **37.5** | 45 | 1 | 1 | – | 87.5 | 950 | 700 | 270 | **36 015.00** |
| **WMS05004** | **50** | 60 | 2 | 1 | – | 87.5 | 950 | 700 | 270 | **40 845.00** |
| **WMS07504** | **75** | 90 | 2 | 2 | – | 87.5 | 950 | 700 | 270 | **49 875.00** |
| **WMS10004** | **100** | 120 | 2 | 1 | 1 | 150 | 950 | 700 | 270 | **56 805.00** |
| **WMS12504** | **125** | 150 | 2 | 2 | 1 | 150 | 950 | 700 | 270 | **61 845.00** |
| **WMS15004** | **150** | 180 | – | 2 | 2 | – | 950 | 700 | 270 | **69 195.00** |



HFRA...

## HFRA series - Detuned anti-harmonic reactors 400V, 50Hz

Detuned reactors protect capacitors against harmonics, avoiding parallel resonance and amplification of harmonics flowing within the network.

- Insulation: F class insulation, 155°C
- Internal protection: Thermal cutout (125°C) incorporated *(on centre phase)*
- Reference standards: IEC/EN 60076-6, 61558-2-20

| type | kvar at: | | % | description | dimensions (mm) | | | price |
|---|---|---|---|---|---|---|---|---|
| | **400V** | 440V | | | (H) | (W) | (D) | |
| **7% - 189 Hz Detuned reactors** *for networks with a high level of 5th and 7th Harmonics* | | | | | | | | |
| **HFRA1207** | **12.5** | 15 | 7% | anti-harmonic reactors | 215 | 210 | 120 | **5 512.50** |
| **HFRA2507** | **25** | 30 | 7% | anti-harmonic reactors | 190 | 240 | 170 | **11 655.00** |
| **HFRA5007** | **50** | 60 | 7% | anti-harmonic reactors | 240 | 300 | 180 | **16 590.00** |
| **14% - 134 Hz Detuned reactors** *for networks with a high level of 3rd Harmonic* | | | | | | | | |
| **HFRA1314** | **12.5** | 15 | 14% | anti-harmonic reactors | 280 | 240 | 150 | **8 295.00** |
| **HFRA2714** | **25** | 30 | 14% | anti-harmonic reactors | 250 | 330 | 220 | **16 170.00** |
| **HFRA5414** | **50** | 60 | 14% | anti-harmonic reactors | 270 | 340 | 220 | **21 000.00** |



EXP1011

## Communication modules for PFC systems

For remote monitoring and control of all electrical network parameters including harmonics, panel internal temperature, alarms, events and all setup parameters.

Communication modules simply plug-in to the controller and are automatically configured to offer various communication protocols.

| | | | |
|---|---|---|---|
| **EXP1011** | opto-isolated | RS-232 plug-in communication | expansion module | **4 347.00** |
| **EXP1012** | opto-isolated | RS-485 plug-in communication | expansion module | **2 194.50** |
| **EXP1013** | opto-isolated | Ethernet with web server function | expansion module | **5 386.50** |
| **EXP1014** | opto-isolated | Profibus-DP plug-in communication | expansion module | **18 060.00** |



PM-GW-LTE

## Remote monitoring solutions for PFC systems

Polar Monitoring offers remote monitoring systems that enable (RS-485) devices to be securely viewed from anywhere via its comprehensive cloud platform. This provide an ideal solution to monitor generator controllers and Power Factor Correction systems.

**General features:**

- Remote programming, monitoring, trending
- Alerts and notifications *(SMS and email)*
- Error codes and reporting
- Multiple user access rights
- Device agnostic *(Supports multiple types of devices and applications in one platform)*

| type | supply voltage | network connection | connector type | description |
|---|---|---|---|---|
| **PM-GW-LTE** | 9...36 VDC | 2G/LTE | terminal | LTE - Gateway *(within South Africa)* |

For more information, see **category G**

*see* ***Cat G*** *for pricing.*



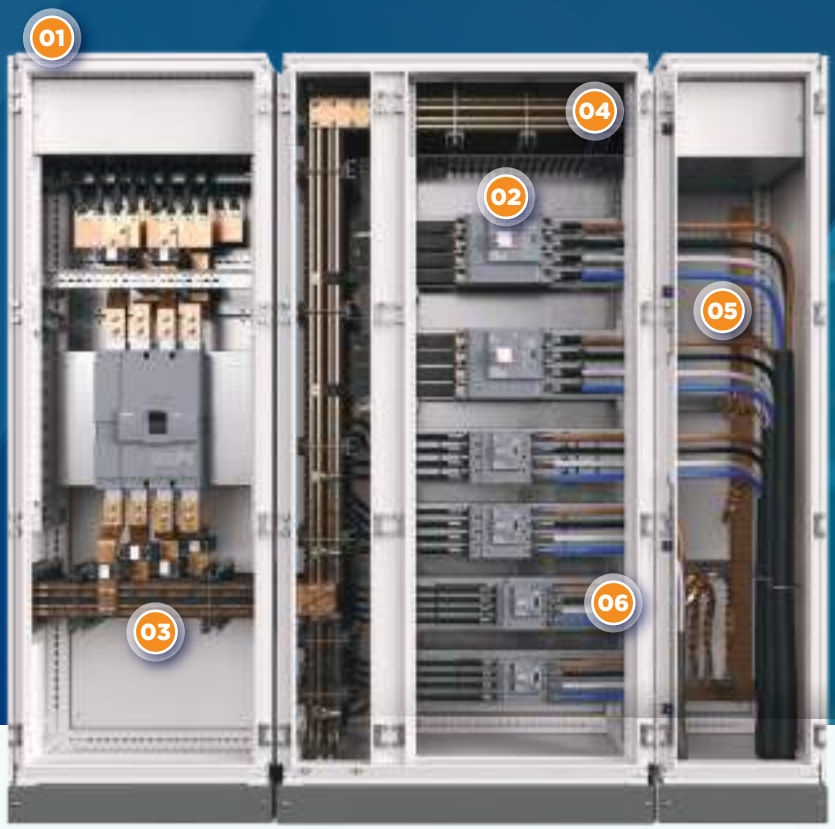
Above ZAR prices do not include VAT. E&OE

Introducing more possibilities

# quadro evo.

## The New Hager Main Distribution Board

A tested Hager solution, fully compliant with IEC 61439-1&2, up to 4000A, quadro evo now offers 4 safety classes. With segregations 1, 2b, 3b or 4b, there is a solution for projects of any dimension. The new quadro evo is a solution that will meet almost any challenge. Its many improvements make it the base of a main distribution that will endure. Choosing, configuring and building the quadro evo is now easier and more efficient.




01 Outside, the familiar Hager look, inside there's plenty more to see

02 New capabilities and more intelligence

03 New form segregations for up to 4b and new safety features

04 Ready for an all-new power busbar, allowing systems for up to 4000A

05 The new design allows for more space, making wiring and maintenance easier

06 Improved mounting kits, fewer screws and a clear positioning

## hagercad software

**A fully integrated, electrical planning software from Hager, offering maximum simplicity, speed, reliability and flexibility.**

- Automatic power loss and heat calculation feature
- Simply generate your terminal plan
- User-friendly function for device labels
- Quickly generate circuit diagrams
- Easily create and share your project
- Windows 10 & 11 compatible with quick, automatic updates

hager

Scan to learn more about **quadro evo**

Modular Solution | User Friendly HMI | Complete Protection Features | Efficient Heat Dissipation

## Active Power Filter (APF) systems

The increase of non-linear and other challenging loads in electrical grids today present unique power quality challenges. APF (Active Power Filter) provides a cost efficient solution to power quality problems, eliminating resonance problems, preventing amplified harmonic current and voltage, simultaneously compensating reactive power in real-time to maintain power factor at >0.99, enhancing equipment operating life whilst improving overall power system capacity.

### APF systems provide multiple compensation functionality including:

- **Harmonic compensation** *(filtering any order from 2nd to 50th harmonic)*
- **Power Factor compensation** *(compensating in real-time to maintain power factor at >0.99)*
- **Phase Imbalance compensation** *(reducing the peak current demand tariff on electricity bills)*

### Typical applications

Malls, shopping centres, office blocks, hospitals, printing works, processing plants, Data centres, pumping stations and all applications where Harmonic generating equipment such as variable speed drives *(VSDs)* rectifiers, battery charges, UPS's, Power supplies, LED lighting is utilised.

**Benefits include: Reduced maintenance, a considerably longer lifespan**

- Complete power quality improvement solution including real-time elimination of harmonics and flicker mitigation
- Provides dynamic step-less compensation instantaneously in real-time to each phase individually
- Only injects the kVAr required in that moment with no possibility of over or under-compensation
- Voltage fluctuations *(flicker)* mitigation and reduction of voltage *(sag and swell)* variations
- Correcting phase imbalance *(reducing the peak current reducing peak demand tariff on electricity bills)*
- Maintenance free *(with no electromechanical components)*
- Expandable by paralleling up to 8 modules *(unnecessary to over-dimension capacity to cater for future needs)*
- Output current is unaffected by mains voltage fluctuations providing stable support for mains voltage



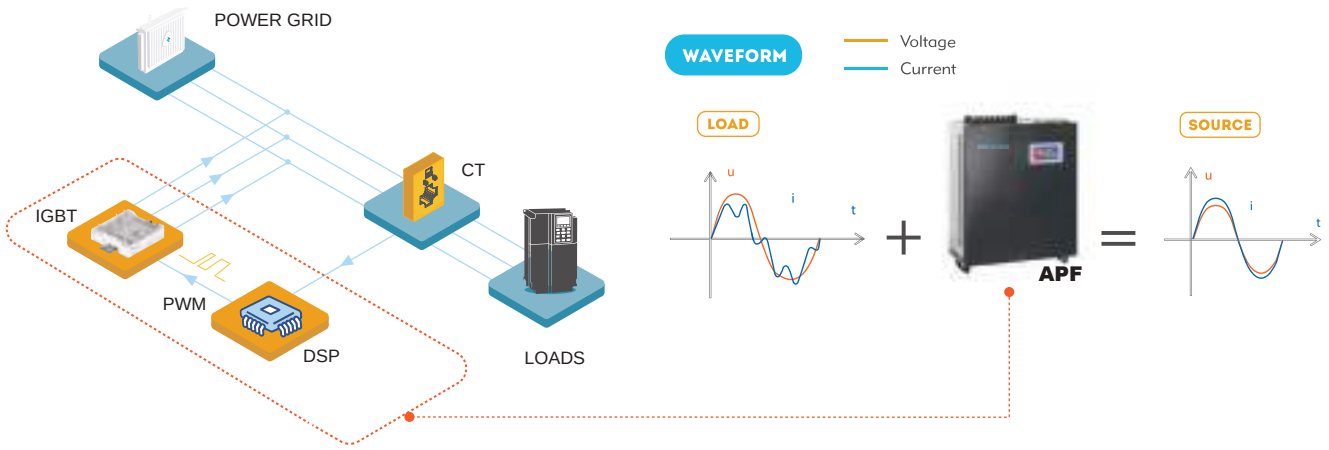
SFR-APF4...

- Harmonic compensation: 2nd to 51st order
- Response time: <5ms
- Efficiency: ≥97%
- Communication port: RS-485 - Modbus-RTU protocol
- Display interface: 4.3" LCD
- Operating temp: -20°C...45°C
- Cooling: Forced air cooling *(fan cooling)*
- Protection class: IP20

| type | rated current | description | rated input (V) | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **Active Power Filters (APF) - Wall-mount system** *(3-phase 4 wire) 400V* | | | | | | | |
| **SFR-APF4-30/0.4B** | 30A | Active Power Filter (APF) | 400V ±15% | 641 | 440 | 149 | **54 600.00** |
| **SFR-APF4-50/0.4B** | 50A | Active Power Filter (APF) | 400V ±15% | 641 | 440 | 149 | **68 985.00** |
| **SFR-APF4-75/0.4B** | 75A | Active Power Filter (APF) | 400V ±15% | 641 | 440 | 149 | **86 205.00** |
| **SFR-APF4-100/0.4B** | 100A | Active Power Filter (APF) | 400V ±15% | 753 | 520 | 230 | **97 650.00** |
| **SFR-APF4-150/0.4B** | 150A | Active Power Filter (APF) | 400V ±15% | 753 | 520 | 230 | **120 750.00** |

*Larger sizes can be made up by paralleling up to 8 wall-mount systems.*
*External protection (a circuit breaker is required)*

## Active Power Filter






Above ZAR prices do not include VAT. E&OE

Modular Solution | User Friendly HMI | Complete Protection Features | Efficient Heat Dissipation

## Static Var Generator (SVG) systems

The increase of non-linear and other challenging loads in electrical grids today present unique power quality challenges. **SVG** (Static Var Generator) provides a cost effective, extremely fast solution to power quality problems, enhancing equipment operating life whilst improving overall power system capacity.

The **SVG** operates by detecting the load current, analysing the reactive content and then injecting the exact reverse reactive compensating current on an instantaneous real-time basis enabling perfect compensation on each phase for both inductive and capacitive loads.

**Typical applications:**

- Highly dynamic loads requiring rapid reactive power compensation, e.g: electric arc furnaces, or in big steps like cranes, sawmill machinery, etc.
- Electrical welding systems
- Renewable power generation *(e.g. photovoltaics and wind turbines)*
- Plastic industry machinery *(e.g. extruders, injection moulders)*
- Loads with low power factor: Motors, cables, lightly loaded transformers, lighting, etc.

**SVG an IGBT based compensation device with the following advantages:**

- Is a controllable current source, avoiding harmonic amplification which may be present
- Can dynamically and continuously compensate power factor according to the change of load. The module exports reactive power and can absorb reactive power, completely eliminating reactive power reverse transmission.
- With response time of ≤ 5ms, and the conversion from conductive reactive power to inductive reactive power can be accomplished almost instantaneously and can be fully utilised for fast switching loads

**Benefits include: Reduced maintenance, a considerably longer lifespan, compact size**

- Complete power quality improvement solution including real-time elimination of harmonics and flicker mitigation
- Provides dynamic step-less compensation instantaneously in real-time to each phase individually
- Only injects the kVAr required in that moment with no possibility of over or under-compensation
- Can maintain a PF of 0.99 lagging or unity *(if required)* for both inductive and capacitive loads
- Voltage fluctuations *(flicker)* mitigation and reduction of voltage *(sag and swell)* variations
- Correcting phase imbalance *(reducing the peak current which reduces the peak demand tariff on electricity bills)*
- Immune to harmonics, resonance and voltage level and is maintenance free *(with no electromechanical components)*
- Expandable by paralleling up to 8 modules *(unnecessary to over-dimension capacity to cater for future needs)*
- Output current is unaffected by mains voltage fluctuations providing stable support for mains voltage

- Overall efficiency: ≥97%
- Overload capability: 120%
- Response time: ≥5ms
- Communication port: RS-485 - Modbus-RTU protocol
- Display interface: 4.3" LCD
- Operating temp: -20°C...45°C
- Cooling: Forced air cooling *(fan cooling)*



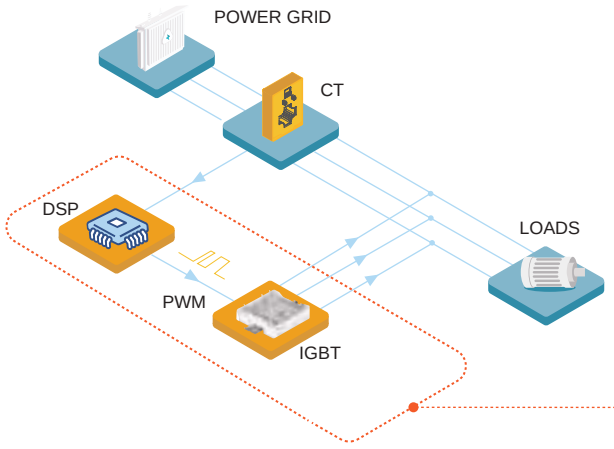
SFR-SVG4...

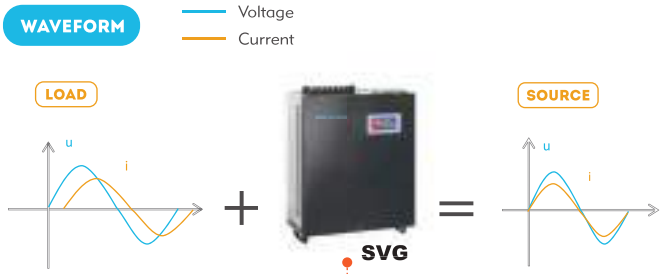
| type | kvar | description | rated input (V) | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **Static Var Generator (SVG) - Wall-mount system** | | | *(3-phase 4 wire) 400V* | | | | |
| **SFR-SVG4-30/0.4B** | 30 kvar | Static Var Generator (SVG) | 400V ± 15% | 641 | 440 | 149 | **66 045.00** |
| **SFR-SVG4-50/0.4B** | 50 kvar | Static Var Generator (SVG) | 400V ± 15% | 641 | 440 | 149 | **86 205.00** |
| **SFR-SVG4-75/0.4B** | 75 kvar | Static Var Generator (SVG) | 400V ± 15% | 753 | 520 | 230 | **103 425.00** |
| **SFR-SVG4-100/0.4B** | 100 kvar | Static Var Generator (SVG) | 400V ± 15% | 753 | 520 | 230 | **124 950.00** |

*Larger sizes can be made up by paralleling up to 8 wall-mount systems.*

*External protection (a circuit breaker is required)*

## Static Var Generator




ALARM
RESET
PWR1
PWR2
DI1
DI2
DELTA
16AM
MODEL:
POWER INPUT:
S/N:
MAC Address:
LISTED
IND. CONT. EQ.
Made in China
+24DC
0VDC
W123
W124
W125
W126




G

# Monitoring & Control

Interactive Catalogue

# Monitoring & Control



Layer 1 industrial ethernet switches

G-1



Layer 2 industrial managed switches

G-1



Layer 3 rack-mount managed switches

G-2



Industrial routers

G-2



LTE & Ethernet gateways

G-3



Edge Gateway with on-board processing

G-3

POLAR CLOUD

Cloud-based monitoring and control platform

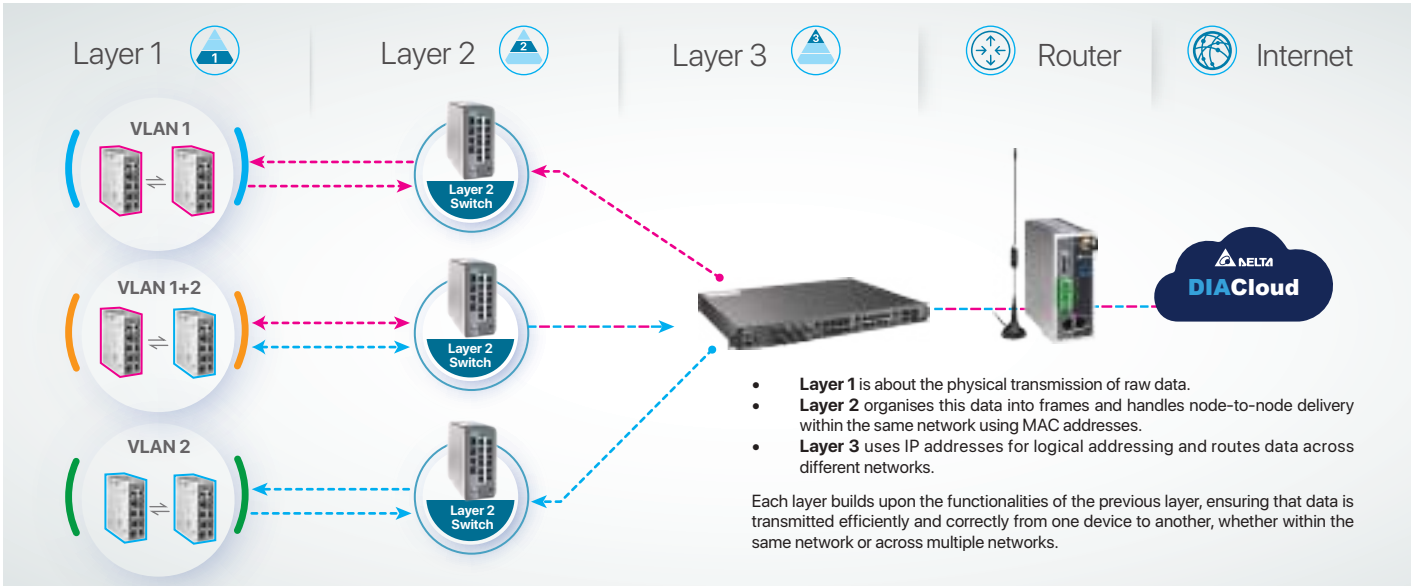
G-4

VTScada by Trihedral

Supervisory control and data acquisition system

G-6

Need help navigating the interactive catalogue? Scan the QR code for a short tutorial video.




- **Layer 1** is about the physical transmission of raw data.
- **Layer 2** organises this data into frames and handles node-to-node delivery within the same network using MAC addresses.
- **Layer 3** uses IP addresses for logical addressing and routes data across different networks.

Each layer builds upon the functionalities of the previous layer, ensuring that data is transmitted efficiently and correctly from one device to another, whether within the same network or across multiple networks.

Rugged Ethernet | EMC | FANLESS

## Industrial Ethernet switches

### Layer 1: Compact Ethernet switches *(Unmanaged)*

- Input voltage: 12 to 48 VDC
- 10 /100 base-T(X), auto MDI / MDI-X, auto negotiation

| type | no. ports | operating temperature | alarm contact | no. fibre ports | description | price |
|---|---|---|---|---|---|---|
| **DVS-005R00** | 5 | -20...+70ºC | – | – | entry level Ethernet switch | **1 407.00** |
| **DVS-008R00** | 8 | -20...+70ºC | – | – | entry level Ethernet switch | **2 005.50** |

### Layer 1:Standard Ethernet switches *(Unmanaged)*

- IEEE 802.1p Class of service / quality of service, priority protocols ***(8W01** and **16W01)***
- Input voltage: 2 sets, 12 to 48 VDC redundant terminal block input

| type | no. ports | operating temperature | alarm contact | no. fibre ports | description | price |
|---|---|---|---|---|---|---|
| **DVS-005W01** | 5 | -40...+75ºC | yes | – | standard Ethernet switch | **2 982.00** |
| **DVS-008W01** | 8 | -40...+75ºC | yes | – | standard Ethernet switch | **4 315.50** |
| **DVS-016W01** | 16 | -40...+75ºC | yes | – | standard Ethernet switch | **7 339.50** |


DVS-005R00

### Layer 1: Gigabit Ethernet switches *(Unmanaged)*

- 10 / 100 / 1000 base-T, auto MDI/MDI-X, auto negotiation
- 10Gbps, wired speed
- Input voltage: 12 to 48 VDC (2 set)

| type | no. ports | operating temperature | alarm contact | no. fibre ports | description | price |
|---|---|---|---|---|---|---|
| **DVS-G005I00C** | 5 | -40...+70ºC | – | – | Gigabit Ethernet switch | **2 247.00** |

### Layer 1: PoE Gigabit Ethernet switches *(Unmanaged)*

- 10 / 100 / 1000 base-T PoE(PSE) ports. 2 x 100 / 1000 base-SFP
- Based on IEEE 802.3at standard up to 30W per port. Backward compatible with IEEE 802.3af
- 48 to 57 VDC redundant terminal block power input

| type | no. ports | operating temperature | alarm contact | no. fibre ports | description | price |
|---|---|---|---|---|---|---|
| **DVS-G406W01-2GF** | 6 | -40...+70ºC | yes | 2 x SFP | PoE Gigabit Ethernet switch | **8 631.00** |


DVS-008R00

### Layer 2: Managed Ethernet switches

High-end Layer 2 management, redundant self-healing ring and a wide-operating temperature.

- Supports EtherNet/IP and Modbus TCP protocols for remote management by SCADA etc.
- IEEE 802.1X, TACACS+, SSH, HTTPS and SNMP v3 for enhanced network security
- Compatible with most industrial protocols, including: EtherNet/IP, Profinet, CC-LINK IE, DNP 3.0
- RJ45 ports: 10 / 100 / 1000 base-T, auto MDI/MDI-X, auto negotiation
- SFP ports: 100 / 1000 base-SFP

| type | no. ports | operating temperature | alarm contact | no. fibre ports | description | price |
|---|---|---|---|---|---|---|
| **DVS-G112W02-4GF** | 8 | -40...+75ºC | yes | 4 x SFP | Managed Ethernet switch | **13 020.00** |
| **DVS-G116W02-4GF** | 12 | -40...+75ºC | yes | 4 x SFP | Managed Ethernet switch | **17 010.00** |


DVS-G116W02-4GF

### SFP fibre transciever *(SFP fibre transceiver - 1 port)*

| type | operating temperature | interface: connectors | interface: fibre type | interface: max. link distance | price |
|---|---|---|---|---|---|
| **LCP-1250A4FDRJ** | -5ºC...70ºC | duplex LC | multi mode | 550 m | **1 554.00** |



Above ZAR prices do not include VAT. E&OE

Rugged Ethernet · EMC · FANLESS



DVS-G928W01

Excluding modules

New



DVS-G900-8GE



DVS-G900-6GM12



DVS-G900-8GF


DX-2400L9


DX-3021L9

## Communication devices

| type | no. ports | DI | DO (relay) | power input | operating temperature | description | price |
|---|---|---|---|---|---|---|---|
| **Layer 3: Managed industrial rack mount Ethernet switch** *(100 to 240VAC / 125 to 370VDC)* | | | | | | | |
| Layer 3 switches route network packets between different subnets, using hardware to determine the correct paths and ensure efficient data exchange. Delta Layer 3 switches incorporate advanced hardware and software to function effectively in harsh industrial settings.<br>• Enhanced network security with **IEEE 802.1X, TACACS+, SSH, HTTPS and SNMP v3**<br>• STP/RSTP/MSTP for network redundancy further ensures reliability | | | | | | | |
| **DVS-G928W01** | 4 | – | 2 | 2 | -40...+85ºC | L3 managed ETH switch | **58 170.00** |
| | module slot M1 | M2 | M3 | M4 | | no ports | |
| **DVS-G900-8GE** | • | • | • | – | -40...+85ºC | 8 RJ45 ETH module | **10 815.00** |
| **DVS-G900-6GM12** | • | • | • | – | -40...+85ºC | 6 M12 ETH module | **14 805.00** |
| **DVS-G900-8GF** | • | • | • | – | -40...+85ºC | 8 SPF ETH module | **10 279.50** |
| **DVS-G900-4GF** | – | – | – | • | -40...+85ºC | 4 SFP ETH module | **8 946.00** |
| **DX-series - Industrial cloud solutions** *input: 24 VDC* | | | | | | | |
| • Data acquisition equipment connected to DIA cloud servers<br>• Supports a two-way data collection channel between the device and the cloud<br>• Various peripheral interfaces include RS-485, RS-232 and LAN ports<br>• Built-in RTC and supports NTP time synchronization over a network<br>• Supports TCP/IP, UDP, ICMP, DHCP, HTTP, DNS, SSH, TCP and Modbus RTU protocols | | | | | | | |
| **Industrial Ethernet cloud router** *(4-Port LAN FE + 1-Port WAN FE + 1 RS-232 + 1 RS-485)*<br>The DX-2310LN is an IoT wired communication product of industrial grade.<br>The product includes Ethernet, RS232 and RS485 interfaces.<br>• Flexible connection method over WAN ports, e.g. static IP, DHCP client and more<br>• Customisable SMS alarm functions<br>• SD card for data backup and quick installation | | | | | | | |
| **DX-2310LN** | 5 | – | – | 1 | -20...+70ºC | cloud based VPN router | **5 523.00** |
| **Industrial 4G cloud router** *(1-Port Lan + 1-Port WAN/LAN + 1-Port RS-485 + 1-Port RS-232)*<br>The DX-2400L9 industrial router supports multiple mobile networks and provides internet access via WAN and cellular connections. It includes Ethernet, RS232, and RS485 interfaces<br>• Connect to AWS IoT MQTT Broker through MQTT protocol<br>• Universal LTE-FDD and LTE-TDD frequency bands<br>• Connect to internet through 4G cellular network or WAN broadband interfaces | | | | | | | |
| **DX-2400L9** | 2 | – | – | 1 | -20...+70ºC | 4G/WAN cloud router | **7 885.50** |
| **Industrial 3/4G/WAN** *(1-Port WAN + 4-Port LAN + 1-Port RS-232 + 1-Port RS-485)*<br>• USB port can accept 3rd-party Wi-Fi USB adapter(only Realtek RTL8192EU driver supported)<br>• Universal 4G LTE-FDD and LTE-TDD frequency bands | | | | | | | |
| **DX-3021L9** | 5 | 2 | 2 | 1 | -20...+70ºC | cloud based 4G/WAN router | **15 225.00** |

## Industrial fieldBus Delta solution

Industrial automation products for converting communication signals of automation, servo and control devices. IFD communication modules are robust, high quality devices offering stable communication with in-built protection.

| type | from | to | description | price |
|---|---|---|---|---|
| **Ethernet to serial Modbus RS-232/485 Converters** *(full isolation)* | | | | |
| **IFD9506** | RS-232/485 | MODBUS TCP | converter *(inc. power supply)* | **3 696.00** |
| *To configure IFD devices you need to install DCISoft* | | | | |
| **Serial to serial communication converters** | | | | |
| **IFD6500** | USB | RS-485 | converter *(no ext. power supply required)* | **1 134.00** |
| **IFD6530** | USB | RS-485 | with 9V power supply *(115.2k bps Max.)* | **1 911.00** |
| **IFD8500-A** | RS-232 | RS-422/485 | RS-232 isolated converter | **1 228.50** |
| **IFD8510** | RS-485 | isolated repeater/amplifier | *(extends transmission to 1.2 km)* | **1 417.50** |
| ***IFD65xx** requires special driver to work with Windows OS, available on Delta website.* | | | | |
| **CAN / DeviceNet to serial converters** | | | | |
| **IFD6503** | USB | CAN | CAN to serial converter | **4 945.50** |



PM-GW-LTE



PM-GW-GE



PM-MB4442





PM-S-CUBE

**Polar Monitoring** - All-in-One Cloud-Based Monitoring

Polar Monitoring offers a comprehensive, cloud-based monitoring solution tailored for the agriculture, commercial, and industrial sectors. This innovative system allows users to integrate and manage data from multiple devices and brands into a single, centralised platform, streamlining the process of data viewing and management.

| type | supply voltage | network connection | connector type | description | price |
|---|---|---|---|---|---|
| **LTE gateway** | | | DIN mounting rail | **IP40** | |

LTE Gateways use the GSM/LTE mobile network to connect to the Polar Cloud Service.
Gateways have a pre-installed SIM Card, managed by Polar Monitoring for user convenience.

- SIM: Pre-installed, no airtime/data required *(managed by Polar Monitoring)*
- Antenna Includes standard antenna (PM-A-2)

| | | | | | |
|---|---|---|---|---|---|
| **PM-GW-LTE** | 9 - 36 VDC | 2G/LTE | terminal | LTE - Gateway *(within South Africa)* | **3 066.00** |
| **PM-GW-LTE-G*** | 9 - 36 VDC | 2G/LTE | terminal | LTE - Gateway *(outside South Africa)* | **3 066.00** |

* *For Zambia and Namibia add ZAM / NAM to the above part number*

| | | | | | |
|---|---|---|---|---|---|
| **Ethernet gateway** | | | DIN mounting rail | **IP40** | |

The Ethernet Gateway requires an existing on site internet connection. It connects directly into an existing IP network via DHCP.

- DHCP client connects through firewall. No VPN or port forwarding required

| | | | | | |
|---|---|---|---|---|---|
| **PM-GW-ETH** | 9 - 36 VDC | Ethernet | terminal | Ethernet - Gateway | **1 491.00** |

| | | | | | |
|---|---|---|---|---|---|
| **Edge gateway** | | | DIN mounting rail | **IP40** | |

Introducing the Glacier Edge, the next-generation IoT edge gateway designed by Polar Monitoring for the industrial and commercial sectors.

With the capability to store data locally and maintain on-site control even during an internet outage, the Glacier Edge experiences no downtime due to network issues and automatically syncs any missing data with the cloud once the connection is restored.

- Key features: Dual Ethernet ports, GPS, Intel CPU 4-core 2.5Ghz, 4GB RAM, 126GB SSD, fan-less design, 4x isolated RS-485, Modbus TCP support,Virtual Com ports

| | | | | | |
|---|---|---|---|---|---|
| **PM-GW-GE** | 12 - 24 VDC | 2G/LTE | terminal | Edge - Gateway | **32 025.00** |

| type | supply voltage | inputs (DI) | outputs (DO) | inputs (AI) | pulse counter | price |
|---|---|---|---|---|---|---|
| **Industrial fieldbus solution** | | | DIN mounting rail | | **IP40** | |

The PM-MB4442 is a Remote I/O solution designed for use with the Polar Gateway via RS-485. This unit supports 4-20mA analog inputs, pulse counters, and Digital I/O, allowing you to conveniently monitor real-world variables in the Polar Cloud.

| | | | | | | |
|---|---|---|---|---|---|---|
| **PM-MB4442** | 12 - 24 VDC | 4 | 4 | 4 (4-20mA) | 2 | **3 076.50** |

| | | | | | |
|---|---|---|---|---|---|
| **Advanced remote monitoring and control solution** | | | (H) 240 (W) 190 (D) 125 | | |

The Polar Cube combines the Polar Monitoring LTE Gateway and the MB4442 module into an advanced remote monitoring and control system designed for easy installation and versatile application.
Ideal for borehole and water pumping operations. Coupled to the Polar Cloud the system tracks and trends data in real-time, providing intuitive visualisation enabling alerts and detailed reports.

- SIM: Pre-installed, no airtime/data required *(managed by Polar Monitoring)*
- Antenna Includes standard antenna (PM-A-2)

| | | | | | |
|---|---|---|---|---|---|
| **PM-S-CUBE** | 12-24 VDC or 230 VAC | 2G/LTE | – | remote monitoring and control solution | **6 982.50** |

*Polar Cube requires polar license subscription*

**Accessories for above**

| type | gain | mounting | cable length | description | price |
|---|---|---|---|---|---|
| **PM-A-2** | 2.5db | magnetic | 2m | magnetic base antenna cable | **457.80** |
| **PM-A-24** | 4db | bracket | 5m | omni directional outdoor ant. cable | **1 071.00** |
| **PM-A-28** | 8db | bracket | 5m | omni directional outdoor ant. cable | **1 974.00** |
| **PM-A-32** | 3db | p/mount | 1m | vandal resistant ant. cable | **505.05** |
| **PM-CAB-RS-2** | RS485 | | 2m | shielded communication cable | **97.65** |
| **PM-CAB-RS-5** | RS485 | | 5m | shielded communication cable | **148.05** |
| **PM-CAB-RS-10** | RS485 | | 10m | shielded communication cable | **232.05** |
| **PM-CAB-D-2** | RJ-45-RS485 | | 2m | comm. cable for Delta VFDs | **88.20** |
| **PM-CAB-D-5** | RJ-45-RS485 | | 5m | comm. cable for Delta VFDs | **155.40** |
| **PM-CAB-D-10** | RJ-45-RS485 | | 10m | comm. cable for Delta VFDs | **364.35** |



Above ZAR prices do not include VAT. E&OE

# Cloud-based remote monitoring systems




## Polar Cloud - Software for Monitoring & Control

Polar Cloud serves as the backbone of the entire Polar Monitoring ecosystem. This user-friendly platform, in conjunction with the Polar Gateway, consolidates and displays crucial data from your field devices in a single location. It also provides the convenience of remote programming and system parameter adjustments.

The Polar Cloud is device and brand agnostic meaning one can monitor a multitude of different devices and brand types from one platform.

**General features:**

- Remote programming, monitoring, trending
- Alerts and notifications *(SMS and email)*
- Error codes and reporting
- Multiple user access rights
- Device agnostic *(Supports multiple types of devices and applications in one platform)*

Scan here to learn more

## Pricing small to medium systems

| Polar Site Based Licencing | | | | | Subscription options | | |
|---|---|---|---|---|---|---|---|
| **Code** | **I/O tags** | **Alerts** | **Schedulers** | **Up to Gateways** | **1-Year** | **2-Year** | **3-Year** |
| **PL-Y-T15** | 15 | **2** | **4** | 1 | **2 126.25** | **3 832.50** | **5 105.63** |
| **PL-Y-T32** | 32 | **10** | **20** | 2 | **4 541.25** | **8 163.75** | **10 880.63** |
| **PL-Y-T50** | 50 | **16** | **32** | 5 | **6 916.88** | **12 442.50** | **16 590.00** |
| **PL-Y-T100** | 100 | **32** | **64** | 10 | **13 466.25** | **24 241.88** | **32 313.75** |
| **PL-Y-T150** | 150 | **46** | **92** | 20 | **20 199.38** | **36 356.25** | **48 483.75** |
| **PL-Y-T250** | 250 | **70** | **140** | 50 | **32 786.25** | **59 010.00** | **78 671.25** |
| **PL-Y-T500** | 500 | **130** | **260** | 100 | **63 787.50** | **114 817.50** | **153 090.00** |
| **PL-Y-T1000** | 1 000 | **200** | **400** | 250 | **127 575.00** | **229 635.00** | **306 180.00** |

*For **2** or **3** year licence option, replace **Y** with **2Y** or **3Y** to part number eg. **PL-2Y-T15** for a 2 year licence*

### Extras

Additional tags, alerts and schedulers can be added to any licence above to extend the offering

| Code | description | price per year |
|---|---|---|
| **PL-Y-AT-1** | Additional Tag | **181.44** |
| **PL-Y-AA-1** | Additional Alerts | **120.96** |
| **PL-Y-AS-1** | Additional Schedulers | **75.60** |

***Note:*** *Up front, net price, no discount applicable*

* *Glacier Edge Gateways require data bundles if connecting to the internet through the embedded SIM*

** *3rd party API available*

## Polar Cloud - Software for Monitoring & Control

POLAR CLOUD Remote Monitoring Solution

Live Viewing | Remote Commissioning | Alarm Notification | Data Storage

Polar Monitoring's new tag/site based licensing offers a flexible tag based pricing model. Below is an example of how the tag based model works and how you can implement it in your future projects and applications.

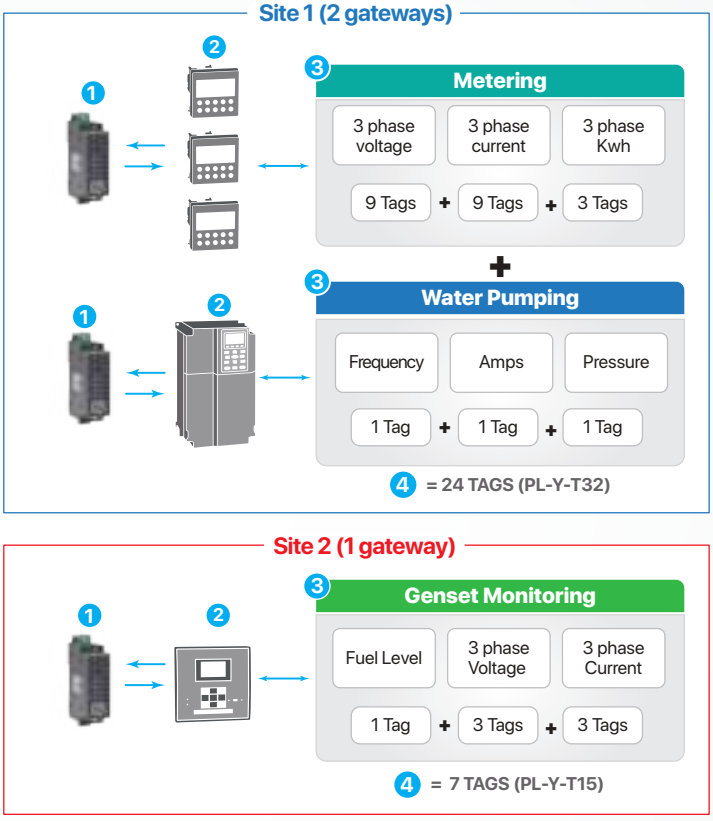
**Step 1** Choose Your Gateway (LTE Local, LTE International, or Ethernet)

**Step 2** Select Your Compatible RS485/Modbus RTU Device

**Step 3** Identify Your Monitoring Needs and Calculate Required Tags

**Step 4** Choose a License That Fits Your Requirements

**Test the Polar Platform today!** Access the Polar Demo Portal via the QR code for a hands-on experience of everything Polar has to offer.



VTScada® by Trihedral

# Powerful Simplicity

## Monitor and Control your system from anywhere in the world



VTScada award-winning software trusted for real-time monitoring and control of industrial operations. Its user-friendly interface and advanced visualisation make it ideal for all users, ensuring operational excellence across industries.

**Key Benefits:**

- **User-Friendly Interface:** Designed for both technical and non-technical users.
- **Advanced Visualisation:** Clear and concise data presentation.
- **Scalability:** Ideal for both small and large operations.
- **Operational Excellence:** Reduce costs, enhance safety, increase uptime, and improve compliance.

Featured VTScada Industries

Manufacturing | Water & Waste Water | Oil & Gas | Power Generation | Mining | ICT

## VTScada Successes

The City of Houston modernised its 400 MGD water purification plant expansion by implementing VTScada, providing real-time monitoring and control over its water and wastewater systems. This upgrade improved efficiency, reduced downtime, and enhanced reliability, ensuring continuous clean water delivery. The user-friendly interface also enabled the team to quickly adapt and optimise processes.

Scan to learn more





Scan to learn more

Bright Alloys, a ferrochrome smelter in South Africa, transformed into a more agile, sustainable, and efficient operation with the implementation of VTScada. This led to a one-third reduction in natural gas consumption, a 10% increase in furnace availability, and a 1% improvement in feed accuracy tolerance, driving better performance and reducing environmental impact.

A leading oil and gas producer modernised its operations with VTScada, enabling real-time monitoring and control across its complex infrastructure. This upgrade improved operational efficiency, reduced downtime, and enhanced safety, ensuring continuous production. The intuitive interface also allowed the team to quickly adapt and optimise processes.

Scan to learn more



# Supervisory control and data acquisition systems

## VTScada by Trihedral - SCADA system

SCADA (Supervisory Control and Data Acquisition) software is essential for real-time monitoring and control of industrial processes. Providing operators with tools to manage equipment efficiently, analyse data and respond to system alerts. This ensures optimal performance, safety and reliability across various industries.

### Advanced SCADA Monitoring and Control with user- friendly design

VTScada an intuitive SCADA software solution designed to simplify complex industrial processes. Combining real-time data acquisition, scalable architecture and integrated alarm management enhancing operational efficiency while reducing learning curves for engineers.

With a customisable interface and extensive support resources, offering a user-centric approach to industrial automation, ensuring that new and experienced users can leverage their full potential.

- Integrated Alarm Management: Real-time event detection to prevent disruptions
- Scalable Architecture: Seamless integration across all system sizes
- Customisable Interface: Tailor your HMI to specific requirements
- Built-in Protocols: Hundreds of device drivers for broad connectivity
- Data Sharing: Integrates external data from 3rd party systems for seamless control

| type | development runtime | alarm notification | data sharing | thin clients | | | price |
|---|---|---|---|---|---|---|---|
| | | | | 1 | 5 | ∞ | |
| **VTScada development runtime (200 Tag combos)** | | | | | | | |
| **VTS-200DRTCANS** | • | • | – | • | – | – | **84 000.00** |
| **VTS-200DRULTCANS** | • | • | – | – | – | • | **262 500.00** |
| *Add additional thin clients (price per each thin client)* | | | | | | | |
| **VTS-200VIC01** | – | – | – | • | – | – | **34 650.00** |
| *Add 3rd party data sharing* | | | | | | | |
| **VTS-2003RD** | – | – | • | – | – | – | **36 750.00** |

## Small to Medium Systems (up to 25,000 I/O Tags)

Designed to handle the complexities of large-scale industrial systems, VTScada offers robust scalability to manage thousands of I/O points seamlessly. Its architecture supports extensive data logging, high availability, and distributed systems across multiple locations.

**Prices as per below table for custom builds**

| | | A | B | C | D | S | T | U | V |
|---|---|---|---|---|---|---|---|---|---|
| type | tags | run time | development runtime | alarm notification | data sharing | thin clients | | | dual server premium* |
| | | | | | | 1 | 5 | ∞ | |
| **VTS-001Kx** | 1 000 | **63 000.00** | **115 500.00** | **31 500.00** | **36 750.00** | **52 500.00** | **152 250.00** | **183 750.00** | **367 500.00** |
| **VTS-005Kx** | 5 000 | **78 750.00** | **152 250.00** | **52 500.00** | **47 250.00** | **63 000.00** | **199 500.00** | **304 500.00** | **546 000.00** |
| **VTS-010Kx** | 10 000 | **94 500.00** | **189 000.00** | **57 750.00** | **57 750.00** | **73 500.00** | **231 000.00** | **441 000.00** | **682 500.00** |
| **VTS-025Kx** | 25 000 | **110 250.00** | **225 750.00** | **73 500.00** | **63 000.00** | **94 500.00** | **304 500.00** | **693 000.00** | **945 000.00** |

*Replace* **X** *above with* **A, B, C, D, S, T, U** *or* **V** *for the relevant software component - pricing for more than 25 000 tags available on request*

* **Dual Server Premium** for Enterprise-Level SCADA solutions for large-scale critical operations *(includes all of the features as below)*

| | | |
|---|---|---|
| **Access and User Interaction:** | Unlimited Thin Clients | Unlimited PC and mobile access for seamless large-scale operations |
| | Widgets and Graphics Library | Access thousands of pre-built industry-specific widgets |
| | Multi-User Scripting | Advanced scripting capabilities with hundreds of functions |
| | Idea Studio | Powerful development environment with on/offline and multi-user support |
| **Data Management and Analysis:** | High-Performance Historian | Capture and store extensive real-time data with ease |
| | Comprehensive Trending | Automatic trend analysis with no additional setup required |
| | Customisable Reporting | Generate tailored reports to meet all compliance needs |
| | DataLogger Support | Integrated logging for DF1, SCADAPack, and more |
| **System Security and Redundancy:** | Advanced Security | Robust, integrated security features for enterprise-level protection |
| | Backup Alarms and Event | Full redundancy for alarms and event logging |
| | Backup ODBC/OPC | Redundant ODBC and OPC servers for uninterrupted operations |
| | Backup Deployment | Redundant deployment tools for uninterrupted operations |
| **Connectivity and Integration:** | Common I/O Drivers | Supports Modbus, Siemens S7, Omron Host Link, Delta and more |
| | Advanced I/O Drivers | Includes DNP3, SNMP, Motorola ACE, and other advanced protocols |
| | Proprietary I/O Drivers | Supports DataFlow Systems and other proprietary protocols |
| | Data Sharing | ODBC Server, OPC Server, and Web Services for third-party integration |
| | Multi-Plant Support | Centralised management of multiple plants or locations |
| **System Management and Support:** | Resource Monitoring | Full system view with SNMP Agent for efficient resource management |
| | SupportPlus Year 1 | Unlimited support, upgrades, and version compatibility |
| | Version Control | Automatic version control (for seamless updates and disaster recovery) |
| | Change Deployment | Remotely update all system components with a single click |
| | Alarms and Events Logging | Comprehensive logging of all system and user actions |


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# H

# Enclosures & Climate Control

Interactive Catalogue

# Enclosures & Climate Control



Insulated enclosures

H-1...2



Surface & Flush mount distribution boards

H-3...5



Floor-standing distribution boards

H-6



Modular floor standing distribution boards

H-7...12



Sheet metal & Polyester enclosures

H-13...16



Stainless steel enclosures

H-17



Enclosure accessories

H-18



Panel-mount fans & Lamps

H-19...22



Cabinet air conditioners

H-23

Need help navigating the interactive catalogue?
Scan the QR code for a short tutorial video.



686.204



686.206



686.409



686.230



COMBI 308

## Junction boxes for electrical installations *(halogen free)*

SCABOX series plastic boxes/enclosures are ideal for housing electrical accessories and terminals for household and fixed electrical installations and offer IP56 degree of protection.

- Max. operating temperature: 60°C
- Colour RAL 7035 grey *(stabilised)*
- Material: Self extinguishing thermoplastic
- Reference standards: EN 60439-1, EN 60670-1, EN60670-22

| type | IP rating | description | carton qty. | ext. dimension (mm) (H) | (W) | (D) | price (ea) |
|---|---|---|---|---|---|---|---|
| **Plastic housings** | | **IP56** | | | | | |
| **Shallow lid** | | | | | | | |
| **686.204** | IP56 | PVC housing - opaque lid | 40 | 100 | 100 | 50 | **60.90** |
| **686.205** | IP56 | PVC housing - opaque lid | 42 | 120 | 80 | 50 | **63.00** |
| **686.206** | IP56 | PVC housing - opaque lid | 48 | 150 | 110 | 70 | **94.50** |
| **686.207** | IP56 | PVC housing - opaque lid | 30 | 190 | 140 | 70 | **181.65** |
| **686.208*** | IP56 | PVC housing - opaque lid | 16 | 240 | 190 | 90 | **297.15** |
| **686.209*** | IP56 | PVC housing - opaque lid | 8 | 300 | 220 | 120 | **540.75** |
| **686.210*** | IP56 | PVC housing - opaque lid | 4 | 380 | 300 | 120 | **700.35** |
| **686.211*** | IP56 | PVC housing - opaque lid | 1 | 450 | 370 | 130 | **1 228.50** |
| **Deep lid** | | | | | | | |
| **686.404** | IP56 | PVC housing - opaque *(high)* lid | 24 | 100 | 100 | 80 | **94.50** |
| **686.408*** | IP56 | PVC housing - opaque *(high)* lid | 6 | 240 | 190 | 125 | **392.70** |
| **686.409*** | IP56 | PVC housing - opaque *(high)* lid | 6 | 300 | 220 | 170 | **669.90** |
| **686.410*** | IP56 | PVC housing - opaque *(high)* lid | 3 | 380 | 300 | 170 | **1 023.75** |
| **686.411*** | IP56 | PVC housing - opaque *(high)* lid | 1 | 450 | 370 | 180 | **1 407.00** |
| **Transparent cover/ lid** | | | | | | | |
| **Shallow lid** | | | | | | | |
| **686.226** | IP56 | PVC housing - transparent lid | 48 | 150 | 110 | 70 | **212.10** |
| **686.227** | IP56 | PVC housing - transparent lid | 30 | 190 | 140 | 70 | **367.50** |
| **686.228*** | IP56 | PVC housing - transparent lid | 16 | 240 | 190 | 90 | **572.25** |
| **686.229*** | IP56 | PVC housing - transparent lid | 8 | 300 | 220 | 120 | **834.75** |
| **686.230*** | IP56 | PVC housing - transparent lid | 4 | 380 | 300 | 120 | **1 344.00** |
| **686.231*** | IP56 | PVC housing - transparent lid | 1 | 450 | 370 | 130 | **1 932.00** |
| **Deep lid** | | | | | | | |
| **686.428*** | IP56 | PVC housing - transparent *(high)* lid | 6 | 240 | 190 | 125 | **687.75** |
| **686.429*** | IP56 | PVC housing - transparent *(high)* lid | 6 | 300 | 220 | 170 | **969.15** |
| **686.430*** | IP56 | PVC housing - transparent *(high)* lid | 3 | 380 | 300 | 170 | **1 659.00** |
| **686.431*** | IP56 | PVC housing - transparent *(high)* lid | 1 | 450 | 370 | 180 | **2 278.50** |
| **Accessories for above enclosures** | | | | | | | |
| **Chassis plates** *(steel)* | | | for enclosures | | | | |
| **654.0787** | – | chassis plate for enc. | **686.207/227** | 190 | 140 | – | **113.40** |
| **654.0788** | – | chassis plate for enc. | **686.208/408/228/428** | 240 | 190 | – | **172.20** |
| **654.0789** | – | chassis plate for enc. | **686.209/409/229/429** | 300 | 220 | – | **248.85** |
| **654.0790** | – | chassis plate for enc. | **686.210/410/230/430** | 380 | 300 | – | **680.40** |
| **654.0791** | – | chassis plate for enc. | **686.211/411/231/431** | 460 | 380 | – | **815.85** |
| **654.0080** | – | sealing caps for internal mounting holes | | | | *(12 pcs)* | **48.30** |
| **654.0085** | – | kit to hinge the lid on enclosures | | | | *(1 pair)* | **122.85** |
| **654.0021** | – | plastic wall mounting brackets | | | | *(set of 4)* | **66.15** |

* *Enclosures which accept **654.0085** hinge kit*

## COMBI Junction boxes IP66/67

**Wiska COMBI** junction boxes provide ultimate protection from environmental conditions in a compact, very attractive format, suitable for extreme outdoor installations.

- Weather proof, ultraviolet resistant, shatterproof, impact resistant, flame retardant and halogen free

| type | cable entry sides | rear | thread Ø | description | colour | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **COMBI 308** | IP66/67 | | *(captive - quick release lid screws)* | | | | | | *see **Cat L** for pricing.* |
| **10060400** | 8 | – | M20 | weatherproof junction box | grey | 85 | 85 | 51 | |
| **10060581** | 8 | – | M20 | weatherproof junction box | black | 85 | 85 | 51 | |



Above ZAR prices do not include VAT. E&OE

## Plastic enclosures

**Lovato M** series enclosures are high quality, extremely robust housings ideally suited to indoor or outdoor installations, offering IP65 protection for internally mounted components.

- Protection degree: IP65
- Operating temperature: -25...+60°C
- Material: Made of UV protected polycarbonate
- Colour: Black base and RAL7035 *(light grey)* cover



M1N



M24N



M3N



LPZ M6E8

| type | IP rating | cable entry | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **M1 and M2 series - Plastic housings** | **IP65** | | *(light grey)* | | | | |
| Slim, deep housings designed for compact but tall components such as contactors, timers, voltage, liquid level and phase failure relays etc. required to be housed in a protective enclosure without occupying much space. | | | | | | | |
| • External mounting holes<br>• Incorporated earth terminal<br>• DIN-rail incorporated into internal base of enclosure for mounting electrical components<br>• Two M20 knock-outs on top and bottom of enclosure *(to accommodate gland for cable entry)* | | | | | | | |
| **M1N** | IP65 | M20 | slim polycarbonate housing | 202 | 88 | 135 | |
| **M2N** | IP65 | M20 | slim polycarbonate housing | 234 | 110 | 149 | |
| **M24 and M25 series - Plastic housings** | **IP65** | | *(light grey)* | | | | |
| Robust, heavy duty enclosures for mounting a variety of electrical components. | | | | | | | |
| • Incorporated earth terminal<br>• Mounting holes within the enclosure *(outside the sealing gasket)*<br>• Supplied complete with internal metal chassis plate *(156 x 148 mm)*<br>• Moulded *(alpha and numeric)* grid on internal door for ease of mounting control devices<br>• Two M25/M32 knock-outs on top and bottom of enclosure *(to accommodate gland for cable entry)* | | | | | | | |
| **M24N** | IP65 | M25/32 | shallow polycarbonate housing | 210 | 175 | 99 | |
| **M25N** | IP65 | M25/32 | deep polycarbonate housing | 210 | 175 | 165 | *see* ***Cat A*** *for pricing.* |
| **Accessories** *(spare chassis)* | | | | | | | |
| **MX31** | chassis | | metal chassis/mounting plate | *for M25N enclosures* | | | |
| **M3 series - Plastic housings** | **IP65** | | *(light grey)* | | | | |
| Robust, heavy duty enclosure with high impact resistance and incorporated hinge facility for mounting a variety of electrical components. | | | | | | | |
| • Material: ABS plastic material<br>• Mounting holes within the enclosure *(outside the sealing gasket)*<br>• Internal ribbing in base for mounting components - DIN-rail etc.<br>• Plain base *(no knockouts)* for easy configuration of cable entry/exits<br>• Incorporated hinge facility *(180° full opening)* lid can be removed if required<br>• Moulded *(alpha - numeric)* grid on internal door for easy alignment of control devices | | | | | | | |
| **M3N** | IP65 | – | ABS housing without chassis plate | 280 | 220 | 170 | |
| **MX30** | chassis | | metal chassis/mounting plate | *for M3N enclosures* | | | |

## Metallic enclosures *(empty housings)* — IP66, IP67 — *(without any holes)*

- The thickness of the enclosure is suitable for drilling
- Suitable for pushbuttons, selector switches and pilot lights
- Material: Aluminium alloy
- Colour: Light grey *(base and cover)*
- Protection: IEC/EN: IP66 and IP67<br>UL: Nema 4X
- Earth connection: On base and cover
- Ambient conditions: -25...+70°C
- Compliant: IEC/EN/BS 60947-5-1, cULus

| type | cover | description | (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|
| **LPZ M1E8** | grey | empty aluminium alloy housing only | 80 | 80 | 73 | **709.80** |
| **LPZ M2E8** | grey | empty aluminium alloy housing only | 130 | 80 | 73 | **884.10** |
| **LPZ M3E8** | grey | empty aluminium alloy housing only | 170 | 80 | 73 | **1 060.50** |
| **LPZ M5E8** | grey | empty aluminium alloy housing only | 160 | 160 | 90 | **1 921.50** |
| **LPZ M6E8** | grey | empty aluminium alloy housing only | 170 | 190 | 90 | **2 100.00** |
| **LPZ M7E8** | grey | empty aluminium alloy housing only | 190 | 250 | 90 | **2 499.00** |


(Enclosure only)


GD106B


GP110T


GZ04E


GZ04N


VS118TJ


VF318TJ


VU24NE

## Enclosures / Distribution boards

| type | no. of ways | IP rating | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **Mini gamma series** - Surface shrouds 40A | | | | **IP30** | | | |
| • Incorporated DIN profile and labelling facility<br>• Hinged transparent doors available *(IP40 with door)*<br>• Lead sealable housing | | | | | | | |
| **GD102B** | 2-way | IP30 | surface mounting MCB shroud | 160 | 55 | 82 | **90.30** |
| **GD104B** | 4 way | IP30 | surface mounting MCB shroud | 180 | 110 | 82 | **122.85** |
| **GD106B** | 6 way | IP30 | surface mounting MCB shroud | 180 | 146 | 82 | **142.80** |
| **GD110B** | 10 way | IP30 | surface mounting MCB shroud | 180 | 218 | 82 | **298.20** |
| **Accessories for above GD series boards** | | | | | | | |
| **GP102T** | door | – | transparent *(horizontally)* hinged door | for | GD102B | | **160.65** |
| **GP104T** | door | – | transparent *(horizontally)* hinged door | for | GD104B | | **182.70** |
| **GP106T** | door | – | transparent *(horizontally)* hinged door | for | GD106B | | **192.15** |
| **GP110T** | door | – | transparent *(horizontally)* hinged door | for | GD110B | | **214.20** |
| **GZ104S** | support | – | clip-in support for terminals GZ04E/N | for | GD104B | | **32.13** |
| **GZ106S** | support | – | clip-in support for terminals GZ04E/N | for | GD106B | | **32.13** |
| **GZ110S** | support | – | clip-in support for terminals GZ04E/N | for | GD110B | | **43.05** |
| **GZ04E** | 4 way | terminal | insulated “earth” terminal | *(clips onto above supports)* | | | **58.80** |
| **GZ04N** | 4 way | terminal | insulated “neutral” terminal | *(clips onto above supports)* | | | **58.80** |
| **JP002** | 24 way | blanking | blanking strip | *(breakable sections)* | | | **81.90** |
| **Golf series** - Surface and flush-mount distribution boards 63A | | | | | | | |
| • Transparent door 180° opening *(hinged left or right)* / key-lock facility<br>• Internal cable tie fixing points / cable can be run behind breakers / optional cable retainer clips<br>• Supplied with earth / neutral terminals<br>• Colour: RAL9010 *(white)* / glow wire test to 650°C to UNE 60595-2-1 | | | | | | | |
| **Golf VS series - Surface mounting enclosures - IP40** *(with door)* | | | | | | | |
| • Pre-cut profiles for cable, conduit, trunking entry<br>• Enclosures can be joined together *(horizontally or vertically)* | | | | | | | |
| **VS104TJ** | 4 (1 x 4) | IP40 | surface mounting distribution board | 184 | 138 | 99 | **411.60** |
| **VS108TJ** | 8 (1 x 8) | IP40 | surface mounting distribution board | 184 | 210 | 99 | **462.00** |
| **VS112TJ** | 12 (1 x 12) | IP40 | surface mounting distribution board | 252 | 282 | 99 | **630.00** |
| **VS212TJ** | 24 (2 x 12) | IP40 | surface mounting distribution board | 377 | 282 | 99 | **861.00** |
| **VS118TJ** | 18 (1 x 18) | IP40 | surface mounting distribution board | 252 | 390 | 99 | **724.50** |
| **VS218TJ** | 36 (2 x 18) | IP40 | surface mounting distribution board | 377 | 390 | 99 | **1 144.50** |
| **VS318TJ** | 54 (3 x 18) | IP40 | surface mounting distribution board | 500 | 390 | 99 | **1 291.50** |
| **Golf VF series - Flush mounting enclosures - IP40** *(with door)* | | | | | | | |
| • 72 mm installation depth, can be mounted into “hollow wall” with optional brackets | | | | | | | |
| **VF108TJ** | 8 (1 x 8) | IP40 | flush mounting distribution board | 225 | 275 | 98 | **526.05** |
| **VF112TJ** | 12 (1 x 12) | IP40 | flush mounting distribution board | 293 | 352 | 98 | **622.65** |
| **VF212TJ** | 24 (2 x 12) | IP40 | flush mounting distribution board | 418 | 352 | 98 | **834.75** |
| **VF118TJ** | 18 (1 x 18) | IP40 | flush mounting distribution board | 293 | 460 | 98 | **721.35** |
| **VF218TJ** | 36 (2 x 18) | IP40 | flush mounting distribution board | 418 | 460 | 98 | **1 092.00** |
| **VF318TJ** | 54 (3 x 18) | IP40 | flush mounting distribution board | 543 | 460 | 98 | **1 281.00** |
| **Accessories for Golf series (VS/VF) enclosures** | | | | | | | |
| **VZ696N** | bracket | hollow wall mounting brackets for flush enclosures | | | | *(4pcs)* | **297.15** |
| **VZ699N** | retainer | cable retaining guides for all enclosures | | | | *(4pcs)* | **283.50** |
| **VZ786N** | bracket | brick wall fixing brackets for flush enclosures | | | | *(4pcs)* | **109.20** |
| **VZ787N** | label | spare transparent label holder for all enclosures | | | | *(5pcs)* | **297.15** |
| **VZ794N** | key | key lock facility for all enclosures | | | | *(2pcs)* | **513.45** |
| **Volta series - “Exclusive” flush mounting boards IP41** *(class II)* | | | | | | | |
| • Metallic front door and frame *(reversible - opening from left or right)*<br>• Integrated mini spirit level *(installation aid for alignment)*<br>• 30% more wiring space available<br>• Supplied with earth / neutral terminals<br>• Colour : RAL 9010 *(white)*<br>• IEC 60439-3 | | | | | | | |
| **VU12NE** | 12 (1 x 12) | flush mount “exclusive” distribution board | | 356 | 348 | 96 | **1 281.00** |
| **VU24NE** | 24 (2 x 12) | flush mount “exclusive” distribution board | | 505 | 348 | 96 | **1 491.00** |
| **VU36NE** | 36 (3 x 12) | flush mount “exclusive” distribution board | | 630 | 348 | 96 | **1 816.50** |
| **VU48NE** | 48 (4 x 12) | flush mount “exclusive” distribution board | | 755 | 348 | 96 | **2 026.50** |



Above ZAR prices do not include VAT. E&OE




VE106L

*(Enclosure only)*

**Vector series - Surface mount enclosures** class II

- Compliant: IEC 61439-3
- Colour: RAL 7035 *(light grey)*
- Adjustable DIN-rail depth *(to fit products of different depth)*
- Transparent hinged cover *(2 - 10 way)* or door *(12 - 54 way)*
- Rear adjustment screws for mounting on uneven / irregular wall surfaces *(up to 3 mm)*
- Premarked knock-outs for cable glands **M20, M25, M32, M40, M50** *(size dependant)*

| type | number of ways | | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|
| **Vector VE-L - Surface-mount distribution boards** 63A | | | **IP65** | | | |
| • IP rating: IP65 | | | | | | |
| • Supplied with Earth/Neutral terminals | | | | | | |
| • 2 lateral knockouts for cable entry or coupling pieces | | | | | | |
| • Glow wire test to IEC 60695-2-10 and IEC 60 695-2-11: 750ºC | | | | | | |
| **VE103L** | 3 (1 x 3) | surface mounting distribution board | 175 | 111 | 93 | **541.80** |
| **VE106L** | 6 (1 x 6) | surface mounting distribution board | 190 | 165 | 113 | **624.75** |
| **VE110L** | 10 (1 x 10) | surface mounting distribution board | 210 | 237 | 114 | **704.55** |
| **VE112L** | 12 (1 x12) | surface mounting distribution board | 302 | 310 | 151 | **992.25** |
| **VE212L** | 24 (2 x 12) | surface mounting distribution board | 427 | 310 | 151 | **1 627.50** |
| **VE118L** | 18 (1 x 18) | surface mounting distribution board | 302 | 418 | 151 | **1 449.00** |
| **VE218L** | 36 (2 x 18) | surface mounting distribution board | 452 | 418 | 151 | **2 236.50** |
| **VE318L** | 54 (3 x 18) | surface mounting distribution board | 602 | 418 | 151 | **2 835.00** |




VE212SN

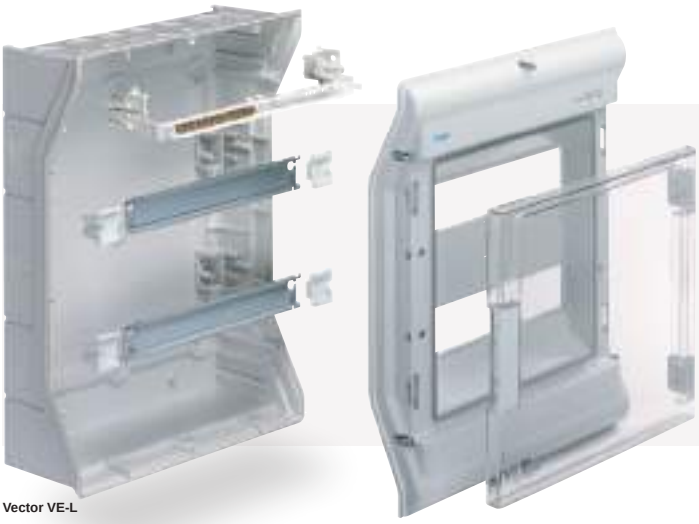
**Vector VE-SN - Surface-mount distribution boards** 63A *(for outdoor use)* **IP65**

UV stabilised and IP65 surface mounting enclosure range designed specifically for outdoor use and **photovoltaic** applications.

- Protection: IP65
- Material: Polycarbonate
- Dimensional stability up to 100°C, resistant to frost down to -25°C
- Plain base *(no knockouts)* for easy configuration of cable entry/exits
- Earth and neutral terminals to be ordered separately *(see below)*
- Glow wire test to IEC 60695-2-10 and IEC 60 695-2-11: 750ºC
- Resistant to ultraviolet radiation, immersion in water in accordance with UL746C

| | | | | | | |
|---|---|---|---|---|---|---|
| **VE112SN** | 12 (1 x 12) | surface mounting distribution board | 302 | 310 | 151 | **976.50** |
| **VE212SN** | 24 (2 x 12) | surface mounting distribution board | 427 | 310 | 151 | **1 617.00** |
| **VE312SN** | 36 (3 x 12) | surface mounting distribution board | 552 | 318 | 151 | **2 509.50** |
| **Earth/Neutral terminal set for above VE...SN boards** | | | | | | |
| **VZ522** | E/Neutral | terminals each with: *(1 x 25 mm² + 5 x 16 mm² + 7 x 10 mm²)* | | | | **271.95** |

## Vector waterproof boards



Vector VE-L

### Technical characteristics

- **Excellent waterproofing: IP55 / 65** - IK 07 and IK 08
- Plastic boxes, class II
- Capacity: 1 to 3 rows, 3 to 54 modules
- Depth **adjustable DIN-rail**
- 2 side knockouts (VE-L)



**Vega D series - Surface and flush mounting distribution boards IP41** *(with optional door fitted)*

Vega D enclosures are suitable for installations in residential and commercial buildings for supplies up to 160A. Delivered in a ready-to-mount configuration. All enclosures have 24 module rows.

**General features:**

- Material: Metallic enclosure
- Colour: RAL 9010 *(white)*
- Integrated quick connect earth terminals
- Removable front frame for optimal access to internal installed devices
- Doors sheet metal plain or with transparent window *(to be ordered separately)*
- Protection class: IP30/IK07 *(without door)* - IP41/IK08 *(with door)* - class II totally insulated

Scan to watch video



FU42AN

FU42DN

| type | number of modular ways | | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **Surface-mounting boards** | 48 to 168 way | | | | | | |
| • Removable top and bottom plates for easier cable entry | | | | | | | |
| **FD22DN** | 48 | (2 x 24) | surface mounting distribution board | 450 | 550 | 193 | **6 310.50** |
| **FD32DN** | 72 | (3 x 24) | surface mounting distribution board | 600 | 550 | 193 | **7 035.00** |
| **FD42DN** | 96 | (4 x 24) | surface mounting distribution board | 750 | 550 | 193 | **8 148.00** |
| **FD52DN** | 120 | (5 x 24) | surface mounting distribution board | 900 | 550 | 193 | **8 662.50** |
| **FD62DN** | 144 | (6 x 24) | surface mounting distribution board | 1050 | 550 | 193 | **10 269.00** |
| **FD72DN** | 168 | (7 x 24) | surface mounting distribution board | 1200 | 550 | 193 | **11 025.00** |
| **Partially equipped surface enclosures** | | | | | | | |
| **FD42AN*** | 48 | (2 x 24) | surface mounting distribution board | 750 | 550 | 193 | **7 035.00** |
| **FD52AN*** | 72 | (3 x 24) | surface mounting distribution board | 900 | 550 | 193 | **7 990.50** |
| **FD62AN*** | 96 | (4 x 24) | surface mounting distribution board | 1050 | 550 | 193 | **8 463.00** |
| **FD72AN*** | 120 | (5 x 24) | surface mounting distribution board | 1200 | 550 | 193 | **8 946.00** |
| **Flush-mounting boards** | 48 to 168 way | | | | | | |
| **General features:** | | | | | | | |
| • Metallic flush mounting tray *(depth 110 mm with insulated cable entries top and bottom)* | | | | | | | |
| • Removable chassis with uprights accommodating modular devices | | | | | | | |
| • Metallic *(easily removable)* finishing frame DN=40 / AN=72 mm depth | | | | | | | |
| **FU22DN** | 48 | (2 x 24) | flush mounting distribution board | 537 | 550 | 150 | **7 255.50** |
| **FU32DN** | 72 | (3 x 24) | flush mounting distribution board | 687 | 550 | 150 | **8 862.00** |
| **FU42DN** | 96 | (4 x 24) | flush mounting distribution board | 837 | 550 | 150 | **9 565.50** |
| **FU52DN** | 120 | (5 x 24) | flush mounting distribution board | 987 | 550 | 150 | **10 353.00** |
| **FU62DN** | 144 | (6 x 24) | flush mounting distribution board | 1137 | 550 | 150 | **10 920.00** |
| **FU72DN** | 168 | (7 x 24) | flush mounting distribution board | 1287 | 550 | 150 | **12 600.00** |
| **Partially equipped flush enclosures** | | | | | | | |
| **FU42AN*** | 48 | (2 x 24) | flush mounting distribution board | 837 | 550 | 182 | **8 862.00** |
| **FU52AN*** | 72 | (3 x 24) | flush mounting distribution board | 987 | 550 | 182 | **10 027.50** |
| **FU62AN*** | 96 | (4 x 24) | flush mounting distribution board | 1137 | 550 | 182 | **10 605.00** |
| **FU72AN*** | 120 | (5 x 24) | flush mounting distribution board | 1287 | 550 | 182 | **11 130.00** |

* *Supplied without top two rows, to be completed with internal modules of choice (below) to accept main switch MCCB (up to 160A) or two rows modular devices or chassis plate*



FD42PN

FD42TN

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Doors for Vega D enclosures** *(sheet metal)* | | | | | | | |
| **Plain doors** | | *(left or right hinged 135° opening)* | | | | | |
| **FD22PN** | plain | sheet metal door for enclosures | FD/FU22 | 350 | 500 | – | **1 260.00** |
| **FD32PN** | plain | sheet metal door for enclosures | FD/FU32 | 500 | 500 | – | **1 470.00** |
| **FD42PN** | plain | sheet metal door for enclosures | FD/FU42 | 650 | 500 | – | **1 680.00** |
| **FD52PN** | plain | sheet metal door for enclosures | FD/FU52 | 800 | 500 | – | **1 785.00** |
| **FD62PN** | plain | sheet metal door for enclosures | FD/FU62 | 950 | 500 | – | **1 890.00** |
| **FD72PN** | plain | sheet metal door for enclosures | FD/FU72 | 1100 | 500 | – | **2 100.00** |
| **Transparent doors** | | *(left or right hinged 135° opening)* | | | | | |
| **FD22TN** | transparent | sheet metal door for enclosures | FD/FU22 | 350 | 500 | – | **1 890.00** |
| **FD32TN** | transparent | sheet metal door for enclosures | FD/FU32 | 500 | 500 | – | **1 995.00** |
| **FD42TN** | transparent | sheet metal door for enclosures | FD/FU42 | 650 | 500 | – | **2 310.00** |
| **FD52TN** | transparent | sheet metal door for enclosures | FD/FU52 | 800 | 500 | – | **2 520.00** |
| **FD62TN** | transparent | sheet metal door for enclosures | FD/FU62 | 950 | 500 | – | **2 730.00** |
| **FD72TN** | transparent | sheet metal door for enclosures | FD/FU72 | 1100 | 500 | – | **3 045.00** |
| **Internal modules** *(to fill upper 2 spaces on FD/FU42,52,62,72AN enclosures)* | | | | | | | |
| **FD01A1** | 1 row 24 way | standard chassis with modular DIN cover | | 150 | – | – | **761.25** |
| **FD01A2** | 1 row adj. | DIN-rail kit for terminals with plain front cover | | 150 | – | – | **1 023.75** |
| **FD01K1** | 1 row | for 1x horizontally mounted 160A MCCB | | 150 | – | – | **1 795.50** |



FD01A1

*See page **H-6** for Vega D internal modules and accessories* ☛



Above ZAR prices do not include VAT. E&OE



## Quadro 5 series - Floor standing distribution board system *(IP55)*

- Nominal insulation voltage: Ui = 690 V
- Type tested nominal current: 630A, 35 kA
- Colour: RAL9010, *(plinth RAL7042)*
- Class of protection: IP55, IK10 *(with door)* to EN 60530

| type | description | for enclosure | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|
| **Enclosures - Height: 1260 mm -** Surface wall mount or *(floor mount with optional plinth)* | | | | | | |
| • Main frame with back plate, removable top and bottom plates and 4 lugs for wall mounting<br>• 1200 mm Internal height - accepts: - 8 rows *(150 mm high)* or 6 rows *(200 mm high)* 24 way | | | | | | |
| **FM205** | upright basic frame ***without plinth*** *(standard)* | | 1260 | 700 | 260 | **10 710.00** |
| **FM405** | pair of side plates *(L and R)* for enclosure | FM205 | 1260 | – | 260 | **2 110.50** |
| **FM450** | plinth *(optional)* for floor mounting enclosure | FM205 | 150 | 700 | 260 | **3 549.00** |
| **FM535** | plain sheet metal hinged door for | FM205 | 1260 | 685 | – | **4 105.50** |
| **FM545** | transparent sheet metal hinged door for | FM205 | 1260 | 685 | – | **5 439.00** |
| **Enclosures - Height: 2010 mm** *(floor standing with back plate, removable top plate and plinth)* | | | | | | |
| • Main frame with back plate, removable top plate and plinth with 2 wall securing lugs<br>• 1800 mm Internal height - accepts: - 12 rows *(150 mm high)* or 9 rows *(200 mm high)* 24 way | | | | | | |
| **FM109** | upright basic frame ***with back plate and plinth*** *(narrow)* | | 2010 | 450 | 260 | **16 275.00** |
| **FM209** | upright basic frame ***with back plate and plinth*** *(standard)* | | 2010 | 700 | 260 | **16 905.00** |
| **FM409** | pair of side plates *(L and R)* for enclosure | FM1/209 | 2010 | – | 260 | **2 940.00** |
| **FM519** | plain sheet metal hinged door *(narrow)* | FM109 | 2010 | 435 | – | **5 218.50** |
| **FM539** | plain sheet metal hinged door *(standard)* | FM209 | 2010 | 685 | – | **6 657.00** |
| **FM549** | transparent sheet metal hinged door (standard) | FM209 | 2010 | 685 | – | **8 484.00** |
| **Equipment mounting kits - For Quadro 5 system** | | | | | | |
| • Comprises: mounting rail + accessories and front covers for modular MCB and MCCB | | | | | | |
| **For 700 mm wide** *(standard)* **panels** | | | | | | |
| **UC201** | mounting kit for MCB *(150 mm)* | 24 modules FM205/9 | 150 | 600 | – | **1 092.00** |
| **UC205** | mounting kit for MCB *(200 mm)* | 24 modules FM205/9 | 200 | 600 | – | **1 197.00** |
| **UC011H** | mounting kit for MCCB | x160 FM205/9 | 300 | 600 | – | **1 638.00** |
| **UC021H** | mounting kit for MCCB | x250 FM205/9 | 300 | 600 | – | **2 772.00** |
| **UC464P** | kit for mounting 2 x MCCB | P630 FM205/9 | 300 | 600 | – | **2 278.50** |
| **UC464X** | kit for mounting 2 x MCCB | x630 FM205/9 | 300 | 600 | – | **2 698.50** |
| **UC233EM** | kit with knock-outs for 3 x 96 mm instruments | FM205/9 | 200 | 600 | – | **1 040.55** |
| **For 450 mm wide** *(narrow)* **panels** | | | | | | |
| **UC200** | mounting kit for MCB | 10 modules FM109 | 150 | 350 | – | **736.05** |
| **UC010H** | mounting kit for MCCB | x160 FM109 | 300 | 350 | – | **1 365.00** |
| **UC020H** | mounting kit for MCCB | x250 FM109 | 300 | 350 | – | **2 310.00** |
| **UC434P** | kit for mounting 1 x MCCB | P630 FM109 | 300 | 350 | – | **1 858.50** |
| **UC434X** | kit for mounting 1 x MCCB | x630 FM109 | 300 | 350 | – | **2 058.00** |
| **Accessories for Quadro 5 enclosures -** *(other common accessories see page **H-11**)* | | | | | | |
| **FM484** | chassis plates for standard enclosures | FM205/9 | 300 | 500 | – | **722.40** |
| **FM486** | chassis plates for standard enclosures | FM205/9 | 600 | 500 | – | **1 207.50** |
| **FM635** | horizontal joining kit *(side by side mounting of frames)* | | | | | **999.60** |
| **FM653** | screw-in lifting ring set for Quadro 5 enclosures | | | | *(2pcs)* | **278.25** |
| **UC915** | clip-in cable trunking support *(60 mm vertical / 40 mm horizontal)* | | | | | **79.80** |
| **JP024** | blanking strip *(24 modules wide)* with breakable sections | | | | | **86.10** |
| **FZ517** | replacement square 6 x 6 mm key lock insert | | | | | **90.30** |



FM109 / 209



FM549

☛ *(continued...)* **Vega D Internal modules**

| type | number of modular ways | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|
| **FD02A1** | 2 rows *(24 way)* | standard chassis with modular DIN cover | 300 | – | – | **1 386.00** |
| **FD02K1** | 2 row | for 1 x vertically mounted 160A MCCB | 300 | – | – | **1 480.50** |
| **FD02C2** | 2 row | perforated chassis plate + plain front cover | 300 | – | – | **2 131.50** |
| **FD00C2** | 2 row | plain flat surface front cover for enclosures | 300 | – | – | **670.95** |
| **FD00M2** | 2 row | chassis plate direct fixing on vert. supports | 300 | – | – | **322.35** |
| **Accessories for Vega D enclosures** | | | | | | |
| **JP002** | blanking strip | 24 way blanking strip *(breakable sections)* | | | *(ea)* | **81.90** |
| **FD00A1** | label holder | 24 way holder and paper strip for marking | | | *(10 per pack)* | **537.60** |
| **FD00F1** | bracket | for horizontal side by side mounting | | | *(ea)* | **633.15** |
| **FD00F2** | brackets | external wall mount for surface enclosures | | | *(ea)* | **531.30** |
| **FZ794** | pocket plan | self adhesive flexible A4 format pocket plan | | | *(10 per pack)* | **500.85** |
| **FD00S1** | key lock | key lock to replace original door latch | | | *(ea)* | **433.65** |

- Quick and easy to assemble
- IP55 *(with door)*
- Access from all sides
- Sheet metal class I

| Dimension (mm) | | | Top and bottom | 4 uprights | plinth (H=100 mm) | back panel | | side panel |
|---|---|---|---|---|---|---|---|---|
| height | width | depth | frame (set) | | | plane | ventilated | |
| 1900 | 450 | 400 | FN018EW | FN046EW | FN438E | FN216E | – | FN356E |
| 1900 | 450 | 600 | FN020EW | FN046EW | FN440E | FN216E | – | FN366E |
| 1900 | 450 | 800 | FN022EW | FN046EW | FN442E | FN216E | – | FN376E |
| 1900 | 700 | 400 | FN021EW | FN046EW | FN441E | FN276E | FN276EDW | FN356E |
| 1900 | 700 | 600 | FN029EW | FN046EW | FN451E | FN276E | FN276EDW | FN366E |
| 1900 | 700 | 800 | FN013EW | FN046EW | FN433E | FN276E | FN276EDW | FN376E |
| 1900 | 900 | 400 | FN023EW | FN046EW | FN443E | FN296E | FN296EDW | FN356E |
| 1900 | 900 | 600 | FN031EW | FN046EW | FN453E | FN296E | FN296EDW | FN366E |
| 1900 | 900 | 800 | FN017EW | FN046EW | FN437E | FN296E | FN296EDW | FN376E |
| 1900 | 1000 | 400 | FN024EW | FN046EW | FN444E | FN246E | FN246EDW | FN356E |
| 1900 | 1000 | 600 | FN032EW | FN046EW | FN454E | FN246E | FN246EDW | FN366E |
| 1900 | 1000 | 800 | FN037EW | FN046EW | FN459E | FN246E | FN246EDW | FN376E |

Introducing more possibilities
quadro evo
The New Hager Main Distribution Board

Basic component requirement to assemble a single floor standing cabinet:
• Top and bottom frames • Four uprights • Plinth • Side panels • Back panel • Top and bottom plates • Door





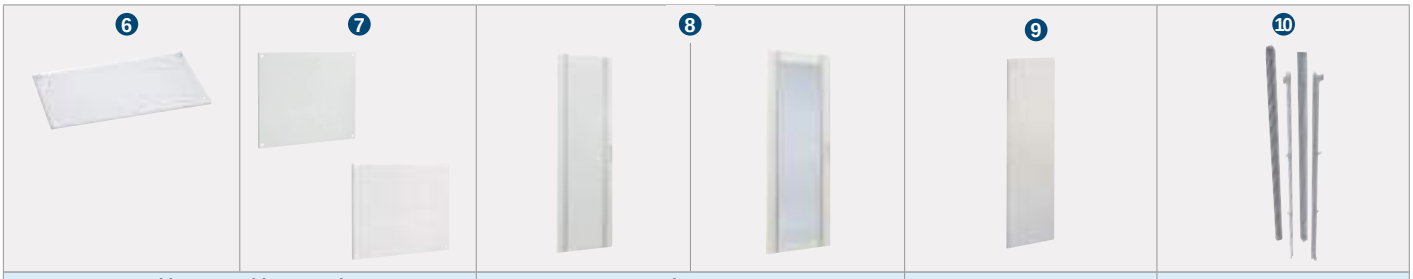




| type | description | | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|
| **Top and bottom frame set** - *Connects to structural uprights* **FN046EW** 1 | | | | | | |
| **FN018EW** | top and bottom frame set | *(connects to uprights)* | – | 450 | 400 | **5 491.50** |
| **FN020EW** | top and bottom frame set | *(connects to uprights)* | – | 450 | 600 | **5 953.50** |
| **FN022EW** | top and bottom frame set | *(connects to uprights)* | – | 450 | 800 | **6 363.00** |
| **FN021EW** | top and bottom frame set | *(connects to uprights)* | – | 700 | 400 | **6 499.50** |
| **FN029EW** | top and bottom frame set | *(connects to uprights)* | – | 700 | 600 | **6 730.50** |
| **FN013EW** | top and bottom frame set | *(connects to uprights)* | – | 700 | 800 | **7 213.50** |
| **FN023EW** | top and bottom frame set | *(connects to uprights)* | – | 900 | 400 | **7 087.50** |
| **FN031EW** | top and bottom frame set | *(connects to uprights)* | – | 900 | 600 | **8 001.00** |
| **FN017EW** | top and bottom frame set | *(connects to uprights)* | – | 900 | 800 | **8 946.00** |
| **FN024EW** | top and bottom frame set | *(connects to uprights)* | – | 1000 | 400 | **7 938.00** |
| **FN032EW** | top and bottom frame set | *(connects to uprights)* | – | 1000 | 600 | **8 809.50** |
| **FN037EW** | top and bottom frame set | *(connects to uprights)* | – | 1000 | 800 | **9 691.50** |
| **Four structural uprights** - *Connects to top and bottom frames with single captive screw* 2 | | | | | | |
| **FN046EW** | set of 4 uprights | *(connects to top and bottom frame)* | 1900 | – | – | **7 297.50** |
| **Plinth** - *Removable front and rear inspection plates* 3 | | | | | | |
| **FN438E** | plinth with inspection plates | *(H) 100 mm* | 100 | 450 | 400 | **2 541.00** |
| **FN440E** | plinth with inspection plates | *(H) 100 mm* | 100 | 450 | 600 | **2 793.00** |
| **FN442E** | plinth with inspection plates | *(H) 100 mm* | 100 | 450 | 800 | **2 961.00** |
| **FN441E** | plinth with inspection plates | *(H) 100 mm* | 100 | 700 | 400 | **2 835.00** |
| **FN451E** | plinth with inspection plates | *(H) 100 mm* | 100 | 700 | 600 | **2 929.50** |
| **FN433E** | plinth with inspection plates | *(H) 100 mm* | 100 | 700 | 800 | **3 160.50** |
| **FN443E** | plinth with inspection plates | *(H) 100 mm* | 100 | 900 | 400 | **2 982.00** |
| **FN453E** | plinth with inspection plates | *(H) 100 mm* | 100 | 900 | 600 | **3 087.00** |
| **FN437E** | plinth with inspection plates | *(H) 100 mm* | 100 | 900 | 800 | **3 307.50** |
| **FN444E** | plinth with inspection plates | *(H) 100 mm* | 100 | 1000 | 400 | **2 961.00** |
| **FN454E** | plinth with inspection plates | *(H) 100 mm* | 100 | 1000 | 600 | **3 066.00** |
| **FN459E** | plinth with inspection plates | *(H) 100 mm* | 100 | 1000 | 800 | **3 286.50** |
| **FN430E** | Plinth connection kit to increase overall height by adding two or more plinths | | | | | **116.55** |
| **Back panels** - *Removable* 4 | | | | | | |
| **FN216E** | rear panel for Quadro enclosures | *(removable)* | 1900 | 450 | – | **2 310.00** |
| **FN276E** | rear panel for Quadro enclosures | *(removable)* | 1900 | 700 | – | **3 402.00** |
| **FN296E** | rear panel for Quadro enclosures | *(removable)* | 1900 | 900 | – | **4 420.50** |
| **FN246E** | rear panel for Quadro enclosures | *(removable)* | 1900 | 1000 | – | **4 966.50** |
| **FN276EDW** | ventilated rear panel for enclosures | *(louvered)* | 1900 | 700 | – | **5 785.50** |
| **FN296EDW** | ventilated rear panel for enclosures | *(louvered)* | 1900 | 900 | – | **7 581.00** |
| **FN246EDW** | ventilated rear panel for enclosures | *(louvered)* | 1900 | 1000 | – | **8 736.00** |
| **Side panels** *(supplied individually)* 5 | | | | | | |
| **FN356E** | side panel for Quadro enclosures | (removable) | 1900 | – | 400 | **2 194.50** |
| **FN366E** | side panel for Quadro enclosures | (removable) | 1900 | – | 600 | **2 719.50** |
| **FN376E** | side panel for Quadro enclosures | (removable) | 1900 | – | 800 | **4 189.50** |



Above ZAR prices do not include VAT. E&OE



| top and bottom cable entry plates | | doors | | chassis plate | functional uprights |
|---|---|---|---|---|---|
| plain plate | cable entry | plain | transparent | full height | |
| FN078E | FN4540DREM | FN546E | FN510E | FN726E | UC1800FB |
| FN080E | FN4560DREM | FN546E | FN510E | FN726E | UC1800FB |
| FN082E | FN4580DREM | FN546E | FN510E | FN726E | UC1800FB |
| FN081E | FN7040DREM | FN506E | FN516E | FN736E | UC1800FB |
| FN089E | FN7060DREM | FN506E | FN516E | FN736E | UC1800FB |
| FN073E | FN7080DREM | FN506E | FN516E | FN736E | UC1800FB |
| FN083E | FN9040DREM | FN526E | FN536E | FN746E | UC1800FB |
| FN091E | FN9060DREM | FN526E | FN536E | FN746E | UC1800FB |
| FN077E | FN9080DREM | FN526E | FN536E | FN746E | UC1800FB |
| FN084E | FN10040DREM | – | – | – | UC1800FB |
| FN092E | FN10060DREM | – | – | – | UC1800FB |
| FN121E | FN10080DREM | – | – | – | UC1800FB |

**Scan Here**
for How To Tutorial Videos



FN089E



FN4540DREM



FN506E



FN516E

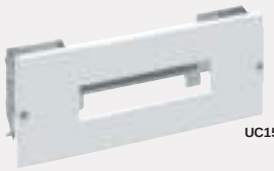
| type | description | | | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **Top and bottom cover plates** *(plain)* 6 | | | | | | | |
| **FN078E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 450 | 400 | **1 071.00** |
| **FN080E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 450 | 600 | **1 291.50** |
| **FN082E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 450 | 800 | **1 501.50** |
| **FN081E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 700 | 400 | **1 344.00** |
| **FN089E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 700 | 600 | **1 617.00** |
| **FN073E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 700 | 800 | **2 268.00** |
| **FN083E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 900 | 400 | **1 417.50** |
| **FN091E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 900 | 600 | **1 848.00** |
| **FN077E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 900 | 800 | **2 310.00** |
| **FN084E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 1000 | 400 | **1 575.00** |
| **FN092E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 1000 | 600 | **1 879.50** |
| **FN121E** | plain cover plate | top *(or)* bottom | *(plain)* | – | 1000 | 800 | **2 971.50** |
| **Top and bottom cable entry plates** *(frame + precut plate)* 7 | | | | | | | |
| **FN4540DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 450 | 400 | **1 542.45** |
| **FN4560DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 450 | 600 | **2 062.20** |
| **FN4580DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 450 | 800 | **2 317.35** |
| **FN7040DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 700 | 400 | **2 126.25** |
| **FN7060DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 700 | 600 | **2 697.45** |
| **FN7080DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 700 | 800 | **3 286.50** |
| **FN9040DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 900 | 400 | **2 583.00** |
| **FN9060DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 900 | 600 | **3 286.50** |
| **FN9080DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 900 | 800 | **3 927.00** |
| **FN10040DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 1000 | 400 | **3 160.50** |
| **FN10060DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 1000 | 600 | **3 727.50** |
| **FN10080DREM** | cable entry plate | top *(or)* bottom | *(precut)* | – | 1000 | 800 | **4 567.50** |
| **Cable entry plates** - *for (above) open cover plates* | | | | | | | |
| **FZ404** | cable entry plain plastic plate without precuts | | | | | plain | **276.15** |
| **FZ422** | cable entry plain steel plate without precuts | | | | | plain | **470.40** |
| **FZ402AL** | aluminium cable entry plate | | | | | plain | **456.75** |
| **FZ402** | cable entry plate with flexible rubber pins | | | | various entry diameters | | **297.15** |
| **FZ406M** | cable entry plate with precuts for cable glands | | | | 13x M20 + 2x M25/20 | | **275.10** |
| **FZ407M** | cable entry plate with precuts for cable glands | | | | 6x M25 + 2x M32/25 | | **276.15** |
| **FZ408M** | cable entry plate with precuts for cable glands | | | | 2x M25/32 + 1x M50/63 | | **276.15** |
| **FZ403WP** | top ventilating cap for enclosures | | | *(mounts onto open cover plates)* | | | **780.15** |
| **Doors** - *Supplied with hinges and rotary locks* 8 | | | | | | | |
| **FN510E** | door for Quadro system | *(reversible)* | *(t/parent)* | 1900 | 450 | – | **5 145.00** |
| **FN516E** | door for Quadro system | *(reversible)* | *(t/parent)* | 1900 | 700 | – | **7 444.50** |
| **FN536E** | door for Quadro system | *(reversible)* | *(t/parent)* | 1900 | 900 | – | **8 599.50** |
| **FN546E** | door for Quadro system | *(reversible)* | *(plain)* | 1900 | 450 | – | **4 315.50** |
| **FN506E** | door for Quadro system | *(reversible)* | *(plain)* | 1900 | 700 | – | **5 407.50** |
| **FN526E** | door for Quadro system | *(reversible)* | *(plain)* | 1900 | 900 | – | **6 405.00** |
| **FN952** | door stopper unit *(to latch door in open position)* | | | – | – | – | **882.00** |



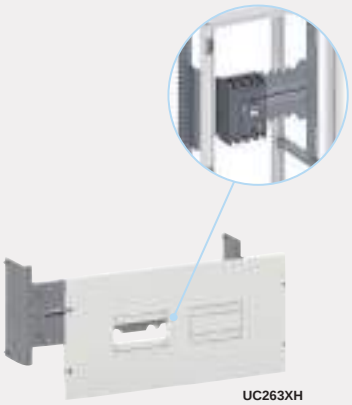
**Equipment mounting kits** *(for Quadro Evo systems)*

- Comprises: mounting accessories and front covers for MCB, MCCB and ACB

| type | description | | for components | dimensions (mm) (H) | (W) | price |
|---|---|---|---|---|---|---|
| **Functional uprights** - *Mandatory for mounting equipment kits in enclosures* 10 | | | | | | |
| **UC1800FB** | functional uprights | *(to support mounting accessories)* | | 1900 | – | **6 510.00** |
| **UC1600FB** | functional uprights | *(space for busbar in top section)* | | 1600 | – | **6 573.00** |
| **Mounting kits for circuit breakers** - *Vertical mounting (terminals top/bottom)* | | | | | | |
| **For 450** *(350)* **mm wide panels** | | | | | | |
| **UC1530MDN** | kit for mounting MCB | | 10 modules | 150 | 350 | **1 512.00** |
| **UC2035AMD*** | terminal kit with mounting kit, DIN-rail and front cover | | | 200 | 350 | **1 144.50** |
| **UC133X** | kit for mounting 2 x MCCB | vertical | x160 | 300 | 350 | **2 016.00** |
| **UC233XH** | kit for mounting 1 x MCCB | vertical | x250 | 300 | 350 | **2 100.00** |
| **UC434PN** | kit for mounting 1 x MCCB | vertical | P630 | 400 | 350 | **2 289.00** |
| **UC434XN** | kit for mounting 1 x MCCB | vertical | x630 | 400 | 350 | **2 278.50** |
| **For 700** *(600)* **mm wide panels** | | | | | | |
| **UC1560MDN** | kit for mounting MCB | | 24 modules | 150 | 600 | **1 543.50** |
| **UC2060MDN** | kit for mounting MCB | | 24 modules | 200 | 600 | **1 575.00** |
| **UC2060AMD*** | terminal kit with mounting kit, DIN-rail and front covercover plate | | | 200 | 600 | **1 218.00** |
| **UC163X** | kit for mounting 4 x MCCB | vertical | x160 | 300 | 600 | **2 205.00** |
| **UC263XH** | kit for mounting 2 x MCCB | vertical | x250 | 300 | 600 | **1 827.00** |
| **UC464PN** | kit for mounting 2 x MCCB | vertical | P630 | 400 | 600 | **3 097.50** |
| **UC464XN** | kit for mounting 2 x MCCB | vertical | x630 | 400 | 600 | **3 265.50** |
| **UC566H** | kit for mounting 1 x MCCB | vertical | h1000 | 600 | 600 | **4 147.50** |
| **UC666H** | kit for mounting 1 x MCCB | vertical | h1600 | 600 | 600 | **4 882.50** |
| **Horizontal mounting** *(terminals left and right)* | | | | | | |
| **UC262XHR** | kit for mounting 1 x MCCB | horizontal | x250 | 200 | 600 | **2 184.00** |
| **UC463XRN** | kit for mounting 1 x MCCB | horizontal | x630 | 300 | 600 | **2 688.00** |
| **UC463PRN** | kit for mounting 1 x MCCB | horizontal | P630 | 400 | 600 | **2 625.00** |
| **UC564H** | kit for mounting 1 x MCCB | horizontal | h1000 | 400 | 600 | **3 937.50** |
| **Mounting kits for ACB** - *Vertically mounted (terminals top/bottom)* | | | | | | |
| **UC6040HW1** | kit for mounting HW1 ACB | fixed-D/out | 1600A | 400 | 600 | **2 898.00** |
| **UC6060HW2** | kit for mounting HW2 ACB | fixed-D/out | 2500A | 600 | 600 | **4 662.00** |
| **Other mounting kits** - *For 700mm wide cabinets* | | | | | | |
| **UC301** | kit with knock-outs for up to | 4 x 72 mm² | instruments | 200 | 600 | **700.35** |
| **UC233EM** | kit with knock-outs for up to | 3 x 96 mm² | instruments | 200 | 600 | **1 040.55** |
| **For 900** *(800)* **mm wide panels** | | | | | | |
| **UC1580MDN** | kit for mounting MCB | | 35 modules | 150 | 800 | **1 932.00** |
| **UC2080MDN** | kit for mounting MCB | | 35 modules | 200 | 800 | **1 995.00** |
| **UC2080AMD*** | terminal kit with mounting kit, DIN-rail and front cover | | | 200 | 800 | **1 249.50** |
| **UC183X** | kit for mounting 6 x MCCB | vertical | x160 | 300 | 800 | **1 785.00** |
| **UC283XH** | kit for mounting 3 x MCCB | vertical | x250 | 300 | 800 | **2 079.00** |
| **UC484XDN** | kit for mounting 3 x MCCB | vertical | x630 | 400 | 800 | **3 748.50** |
| **UC484PDN** | kit for mounting 3 x MCCB | vertical | P630 | 400 | 800 | **3 717.00** |
| **UC586H** | kit for mounting 1 x MCCB | vertical | h1000 | 600 | 800 | **4 326.00** |
| **UC686HD** | kit for mounting 2 x MCCB | vertical | h1600 | 600 | 800 | **3 349.50** |
| **Horizontal mounting MCCB** *(terminals left and right)* | | | | | | |
| **UC282XHR** | kit for mounting 1 x MCCB | horizontal | x250 | 200 | 800 | **2 509.50** |
| **UC483XRN** | kit for mounting 1 x MCCB | horizontal | x630 | 300 | 800 | **3 024.00** |
| **UC483PRN** | kit for mounting 1 x MCCB | horizontal | P630 | 400 | 800 | **3 087.00** |
| **UC584H** | kit for mounting 1 x MCCB | horizontal | h1000 | 400 | 800 | **4 578.00** |
| **Mounting kits for ACB** | | | | | | |
| **UC8040HW1** | kit for mounting HW1 ACB | fixed-D/out | 1600A | 400 | 800 | **3 318.00** |
| **UC8060HW2** | kit for mounting HW2 ACB | fixed-D/out | 2500A | 600 | 800 | **5 113.50** |
| **UC8060FHW4** | kit for mounting HW4 ACB | fixed | 4000A | 600 | 800 | **6 762.00** |
| **UC8060DHW4** | kit for mounting HW4 ACB | D/out | 4000A | 600 | 800 | **6 762.00** |
| **Other mounting kits** - *For 900 mm wide cabinets* | | | | | | |
| **UC243EM** | kit with knock-outs for up to | 3 x 96 mm² | instruments | 200 | 800 | **1 344.00** |



UC1530MD



UC263XH



UC1560MD



UC243EM

* *Front cover to be purchased separately.*



Above ZAR prices do not include VAT. E&OE




FN6030PDW


FN6060PDW


UC232


FN266E


FN206E

| type | description | | | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **Partial door system** - *Replaces classical door system with partial doors* | | | | | | | |
| **Vertical upright** - *requires front top and bottom finishing panels (below)* | | | | | | | |
| **FN1900PD** | vertical upright to attach partial doors onto | | *(ea)* | 1900 | – | – | **1 407.00** |
| **FN60TBPW** | top and bottom finishing panels for partial doors | | *(set 2 pcs)* | – | 600 | – | **1 564.50** |
| **FN80TBPW** | top and bottom finishing panels for partial doors | | *(set 2 pcs)* | – | 800 | – | **1 974.00** |
| **Partial doors for cabinets** | | | | | | | |
| **FN6020MDW** | partial door with cut-out for modular devices (MCB's) | | *(1 lock)* | 200 | 600 | – | **2 772.00** |
| **FN6020PDW** | partial plain blank doors only | *(hinged)* | *(1 lock)* | 200 | 600 | – | **2 740.50** |
| **FN6030PDW** | partial plain blank doors only | *(hinged)* | *(1 lock)* | 300 | 600 | – | **3 192.00** |
| **FN6040PDW** | partial plain blank doors only | *(hinged)* | *(2 locks)* | 400 | 600 | – | **2 625.00** |
| **FN6060PDW** | partial plain blank doors only | *(hinged)* | *(2 locks)* | 600 | 600 | – | **2 772.00** |
| **FN8020MDW** | partial door with cut-out for modular devices (MCB's) | | *(1 lock)* | 200 | 800 | – | **2 982.00** |
| **FN8020PDW** | partial plain blank doors only | *(hinged)* | *(1 lock)* | 200 | 800 | – | **2 163.00** |
| **FN8030PDW** | partial plain blank doors only | *(hinged)* | *(1 lock)* | 300 | 800 | – | **2 520.00** |
| **FN8040PDW** | partial plain blank doors only | *(hinged)* | *(2 locks)* | 400 | 800 | – | **2 740.50** |
| **FN8060PDW** | partial plain blank doors only | *(hinged)* | *(2 locks)* | 600 | 800 | – | **3 013.50** |
| **Blanking plates** - *For Quadro systems - screws onto functional uprights* | | | | | | | |
| **UC221** | front blanking cover plate | *(screw on)* | *(plain)* | 50 | 350 | – | **497.70** |
| **UC222** | front blanking cover plate | *(screw on)* | *(plain)* | 150 | 350 | – | **431.55** |
| **UC223** | front blanking cover plate | *(screw on)* | *(plain)* | 200 | 350 | – | **546.00** |
| **UC224** | front blanking cover plate | *(screw on)* | *(plain)* | 300 | 350 | – | **620.55** |
| **UC225** | front blanking cover plate | *(screw on)* | *(plain)* | 400 | 350 | – | **869.40** |
| **UC226** | front blanking cover plate | (screw on) | (plain) | 600 | 350 | – | **833.70** |
| **UC231** | front blanking cover plate | *(screw on)* | *(plain)* | 50 | 600 | – | **567.00** |
| **UC239** | front blanking cover plate | *(screw on)* | *(plain)* | 100 | 600 | – | **612.15** |
| **UC232** | front blanking cover plate | *(screw on)* | *(plain)* | 150 | 600 | – | **675.15** |
| **UC233** | front blanking cover plate | *(screw on)* | *(plain)* | 200 | 600 | – | **929.25** |
| **UC234** | front blanking cover plate | *(screw on)* | *(plain)* | 300 | 600 | – | **687.75** |
| **UC235** | front blanking cover plate | *(screw on)* | *(plain)* | 400 | 600 | – | **966.00** |
| **UC236** | front blanking cover plate | *(screw on)* | *(plain)* | 600 | 600 | – | **1 228.50** |
| **UC6020PL** | ventilating front blanking cover | *(screw on)* | *(louvered)* | 200 | 600 | – | **1 071.00** |
| **UC241** | front blanking cover plate | *(screw on)* | *(plain)* | 50 | 800 | – | **616.35** |
| **UC249** | front blanking cover plate | *(screw on)* | *(plain)* | 100 | 800 | – | **662.55** |
| **UC242** | front blanking cover plate | *(screw on)* | *(plain)* | 150 | 800 | – | **703.50** |
| **UC243** | front blanking cover plate | *(screw on)* | *(plain)* | 200 | 800 | – | **812.70** |
| **UC244** | front blanking cover plate | *(screw on)* | *(plain)* | 300 | 800 | – | **946.05** |
| **UC245** | front blanking cover plate | *(screw on)* | *(plain)* | 400 | 800 | – | **1 239.00** |
| **UC246** | front blanking cover plate | *(screw on)* | *(plain)* | 600 | 800 | – | **1 522.50** |
| **UC8020PL** | ventilating front blanking cover | *(screw on)* | *(louvered)* | 200 | 800 | – | **1 144.50** |
| **Vertical dividing uprights** - *(supplied individually)* | | | | | | | |
| - To create a cable compartment (W) 200/300 mm within (W) 900/1000 mm cabinets | | | | | | | |
| **FN286EW** | vertical dividing upright for cable compartment | | *(each)* | 1900 | – | – | **4 977.00** |
| **Cable compartment plate** - *(supplied individually) fixing with screws* | | | | | | | |
| **FN266E** | cable compartment blanking plate | *(front or back mount)* | | – | 200 | – | **2 152.50** |
| **FN206E** | cable compartment blanking plate | *(front or back mount)* | | – | 300 | – | **1 932.00** |
| **Horizontal dividing support** - *to support functional uprights when creating a cable compartment* | | | | | | | |
| **FX289** | horizontal dividing side support for functional uprights | | | – | – | 400 | **660.45** |
| **FX291** | horizontal dividing side support for functional uprights | | | – | – | 600 | **836.85** |
| **FX292** | horizontal dividing side support for functional uprights | | | – | – | 800 | **1 031.10** |
| **Partial front functional uprights** - *can be used when no functional uprights for equipment are used* | | | | | | | |
| **UC200F** | partial front functional uprights for cabinet | | | 200 | – | – | **792.75** |
| **UC300F** | partial front functional uprights for cabinet | | | 300 | – | – | **917.70** |
| **UC400F** | partial front functional uprights for cabinet | | | 400 | – | – | **1 071.00** |
| **UC600F** | partial front functional uprights for cabinet | | | 600 | – | – | **1 260.00** |
| **UC1800F** | full length functional front uprights for cabinet | | | 1800 | – | – | **2 478.00** |
| **Partial rear functional uprights** - *to accommodate rear mounted chassis and support brackets* | | | | | | | |
| **UC400BU** | partial rear functional uprights | | | 400 | – | – | **2 562.00** |
| **UC600BU** | partial rear functional uprights | | | 600 | – | – | **2 488.50** |
| **UC800BU** | partial rear functional uprights | | | 800 | – | – | **2 635.50** |
| **UC1000BU** | partial rear functional uprights | | | 1000 | – | – | **3 570.00** |



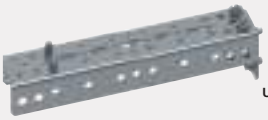


FN950

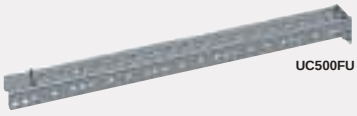


Finishing frame

FN406E



UC200FU



UC500FU



UC000FU



UC990



FZ767



UC268

| type | description | | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|
| **Coupling kits** - *To combine cabinets (of the same height) depth or laterally* | | | | | | |
| **FN950** | lateral coupling to combine two cabinets horizontally *(for greater width)* | | | | | **446.25** |
| **FN942E** | cover plate for gap between adjoining enclosures | widthwise | – | – | 400 | **306.60** |
| **FN943E** | cover plate for gap between adjoining enclosures | widthwise | – | – | 600 | **330.75** |
| **FN944E** | cover plate for gap between adjoining enclosures | widthwise | – | – | 800 | **376.95** |
| **FN954E** | depth coupling to combine two cabinets back to back *(for greater depth)* | | | | | **1 386.00** |
| **FN946E** | cover plate for gap between adjoining enclosures | depthwise | – | 450 | – | **393.75** |
| **FN947E** | cover plate for gap between adjoining enclosures | depthwise | – | 700 | – | **415.80** |
| **FN948E** | cover plate for gap between adjoining enclosures | depthwise | – | 900 | – | **467.25** |
| **FN949E** | cover plate for gap between adjoining enclosures | depthwise | – | 901 | – | **745.50** |
| **FN951** | adhesive gasket/seal tape for enclosures | *(10 x 6 mm)* | *(length 10 met)* | | | **312.90** |
| **Finishing frame** - *Required when no door is fitted to enclosure* | | | | | | |
| **FN1970AF** | finishing frame when no door is used on enclosures | | 1900 | 700 | – | **2 383.50** |
| **FN1990AF** | finishing frame when no door is used on enclosures | | 1900 | 900 | – | **2 698.50** |
| **Chassis plates** - *UC partial plates can be increased in height by adding* 1 *or more kits* 9 | | | | | | |
| **UC2060MP** | partial chassis mounting plate | *(without cover plate)* | 200 | 600 | – | **945.00** |
| **UC2080MP** | partial chassis mounting plate | *(without cover plate)* | 200 | 800 | – | **1 024.80** |
| **FN726E** | chassis plate for Quadro cabinets | *(full height)* | 1900 | 450 | – | **2 436.00** |
| **FN736E** | chassis plate for Quadro cabinets | *(full height)* | 1900 | 700 | – | **3 370.50** |
| **FN746E** | chassis plate for Quadro cabinets | *(full height)* | 1900 | 900 | – | **4 945.50** |
| **Perforated mounting accessories** | | | | | | |
| All accessories are designed for adapting enclosures to accommodate a range of components. Perforations in profiles, brackets, rails are in steps 25 mm apart and accommodate cage nuts M6 **(UC990).** | | | | | | |
| **Side brackets** - *mounts horizontally between side structural uprights* | | | | | | |
| **UC300FU** | side mount horizontal support bracket | *(perforated)* | 50 | – | 400 | **633.15** |
| **UC500FU** | side mount horizontal support bracket | *(perforated)* | 50 | – | 600 | **570.15** |
| **UC700FU** | side mount horizontal support bracket | *(perforated)* | 50 | – | 800 | **668.85** |
| **Back brackets** - *mounts horizontally between back structural uprights or mounted side brackets* | | | | | | |
| **UC350FU** | back bracket mounts bet. rear funct. uprights or side brackets | | – | 450 | – | **512.40** |
| **UC600FU** | back bracket mounts bet. rear funct. uprights or side brackets | | – | 700 | – | **784.35** |
| **UC800FU** | back bracket mounts bet. rear funct. uprights or side brackets | | – | 900 | – | **1 006.95** |
| **UC200FU** | back bracket for accessories | for cable compartment section | – | 200 | – | **555.45** |
| **UC300FU** | back bracket for accessories | for cable compartment section | – | 300 | – | **633.15** |
| **UC000FU** | support mounting bracket for perforated profiles *(one per profile)* | | | | | **216.30** |
| **FZ767** | lifting rings for enclosures | Quadro evo *(2 pcs)* | – | – | – | **260.40** |
| **FZ760E** | lifting rings for double enclosures | Quadro evo *(2 pcs)* | – | – | – | **423.15** |
| **UC990** | clip-in M6 cage nut for perforations in profiles | *(pack of 25)* | – | – | – | **333.90** |
| **UC991** | M6 x 12 mm screw for above cage nuts | *(pack of 25)* | – | – | – | **626.85** |
| **Accessories for Quadro systems** | | | | | | |
| **UC268** | hinge kit for modular covers *(hinge from left or right)* | *(2 pcs)* | – | – | – | **166.95** |
| **UC000HTS** | clip-in cable trunking support | *(6pcs)* | – | – | – | **899.85** |
| **UZ25V1*** | rail mount cable clamp/guide | *(20pcs)* | – | – | – | **171.15** |
| **UZ01V1** | cable guide to fix cable clamp to DIN-rail | *(20pcs)* | | | | **893.55** |
| **JP024** | blanking strip *(24 - way)* with breakable sections | | – | – | – | **86.10** |
| **JE003** | spare transparent self-adhesive marking strips *(24 - way)* | | – | – | – | **57.75** |
| * *Requires **UZ01V1** - cable guide to fix cable clamp **UZ25V1** to DIN-rail* | | | | | | |
| **FZ795D** | metal self-adhesive document holder *(A4)* for inside doors | | – | – | – | **604.80** |
| **FZ794** | plastic self-adhesive transparent pocket *(A4)* for inside doors | | – | – | – | **500.85** |
| **Key locks** | | | | | | |
| • To replace existing lock cylinders with other key types | | | | | | |
| **FZ537** | spare swing lever handle for enclosures without lock | | | | | **873.60** |
| **FZ506** | key lock replacement cylinder | with key 1242E | – | – | – | **543.90** |
| **FZ519** | key lock replacement cylinder | with key 405 | – | – | – | **544.95** |
| **FZ520** | key lock replacement cylinder | with key 455 | – | – | – | **528.15** |
| **FZ850** | panel key triangle/square/double bit | | – | – | – | **65.10** |
| **FL74Z** | lock replacement insert | triangle 8 mm | – | – | – | **283.50** |
| **FL76Z** | lock replacement insert | square 8x8 mm | – | – | – | **318.15** |
| **FZ516** | lock replacement insert | square 6x6 mm | – | – | – | **95.55** |

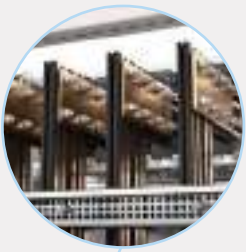


Above ZAR prices do not include VAT. E&OE



## Busbar supports for Quadro system

| type | current (A) | bar size (mm) width | bar size (mm) thick | no. pole | description | dimensions (mm) (H) | dimensions (mm) (W) | dimensions (mm) (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **Universal edgewise mounting busbar support** - *Variable phase-spacing 75/100/150mm* | | | | | | | | | |
| • Supplied with 8 x insulated supports *(for top and bottom of busbars)* with fixing screws<br>• For vertical or horizontal busbar mounting within Quadro enclosures<br>• Suitable for aluminium profile bars or flat copper bars<br>• Requires support brackets *(below)* to complete system | | | | | | | | | |
| **UC825BB** | 1600A | 50...120 | 1 x 10 | 4 | edgewise busbar support | | variable | | **1 942.50** |
| **UC8110BB** | 2000A | 50...120 | 1 x 10 | 4 | edgewise busbar support | | variable | | **1 869.00** |
| **UC8210BB** | 2500A | 50...120 | 2 x 10 | 4 | edgewise busbar support | | variable | | **2 068.50** |
| **UC8310BB** | 4000A | 50...120 | 3 x 10 | 4 | edgewise busbar support | | variable | | **2 289.00** |
| **Busbar support profiles and mounting brackets** - *required to mount the above edgewise supports* | | | | | | | | | |
| • Delivered with 2 x perforated profiles, 2 x mounting brackets and 8 x screws | | | | | | | | | |
| **UC300BB** | support on Quadro structure kit | | | | for enclosure depth | | | 400 | **945.00** |
| **UC500BB** | support on Quadro structure kit | | | | for enclosure depth | | | 600 | **1 030.05** |
| **UC700BB** | support on Quadro structure kit | | | | for enclosure depth | | | 800 | **1 281.00** |
| **UC400BB** | flying support profile kit | | | | for enclosure depth | | | 400 | **975.45** |
| **UC600BB** | flying support profile kit | | | | for enclosure depth | | | 600 | **1 228.50** |
| **UC800BB** | flying support profile kit | | | | for enclosure depth | | | 800 | **1 407.00** |
| **Lower vertical busbar holders** - *set of 4 holders to be mounted at the bottom of vertical bars* | | | | | | | | | |
| **UC000BB** | lower busbar support kit for vertically mounted bars *(to prevent sliding)* | | | | | | variable | | **1 176.00** |
| **Aluminium profile busbars** - *Mounts into holders* **UC825BB** | | | | | | | | | |
| **UC91880AL** | 800A | 50 | 18.5 | | aluminium profile busbars | 1800 | 50 | 18.5 | **2 373.00** |
| **UC918125AL** | 1250A | 60 | 18.5 | | aluminium profile busbars | 1800 | 60 | 18.5 | **3 748.50** |
| **UC918160AL** | 2000A | 100 | 18.5 | | aluminium profile busbars | 1800 | 100 | 18.5 | **5 134.50** |
| **Copper connection plates for aluminium bars** - *to extend or join profile bars* | | | | | | | | | |
| **UC9800C** | 800A | connection plates for **UC91880AL** aluminium bars | | | | 110 | 50 | – | **3 087.00** |
| **UC9125C** | 1250A | connection plates for **UC918125AL** aluminium bars | | | | 130 | 60 | – | **3 402.00** |
| **UC9160C** | 1600A | connection plates for **UC918160AL** aluminium bars | | | | 210 | 100 | – | **6 174.00** |
| **UC9800T** | 800A | deviation plates for **UC91880AL** aluminium bars | | | | 110 | 50 | – | **3 811.50** |
| **UC9125T** | 1250A | deviation plates for **UC918125AL** aluminium bars | | | | 130 | 60 | – | **4 578.00** |
| **UC9160C** | 1600A | deviation plates for **UC918160AL** aluminium bars | | | | 210 | 100 | – | **6 174.00** |
| **Screws for aluminium bars** - *steel class 8.8, supplied (screw + nut + washer)* | | | | | | | | | |
| **UC9825S** | screws | hammerhead zinc plated screws | | | M8x25 *(50 pcs)* | 25 | M8 | – | **2 037.00** |
| **UC9840S** | screws | hammerhead zinc plated screws | | | M8x25 *(50 pcs)* | 40 | M8 | – | **3 181.50** |
| **Flat copper bar supports** *(multi-pole)* | | | | | | | | | |
| **Multi stage bar support** - *supplied individually with 6x M6 and 2 cagenuts* | | | | | | | | | |
| **UC815** | 250A | 20 | 5 | 4 | multi stage busbar support | 180 | 25 | 126 | **1 501.50** |
| **UC816** | protective screen kit | | | | for *(above)* **UC815** support | 620 | – | – | **2 992.50** |
| **Inclined busbar support** - *set of 2 with with all mounting accessories and terminals* | | | | | | | | | |
| **UC826** | 630A | 20...32 | 5/10 | 4 | inclined busbar support | 245 | 54 | 114 | **2 499.00** |
| **UC828** | protective screen kit | | | | for *(above)* **UC826** support | 990 | 212 | – | **1 197.00** |
| **Flat busbars** - *supplied individually with mounting accessories* | | | | | | | | | |
| **UC820** | 630A | 12...30 | 5/10 | 4 | inclined busbar support | 242 | 22 | 42 | **833.70** |
| **UC827** | protective screen kit | | | | for *(above)* **UC820** support | 990 | 294 | – | **1 596.00** |



UC918125AL



UC918160AL



UC9840S



UC815



UC820



UC826

## hagercad: Layout software for distribution boards with 3D visualisation

01 **Easily** create & share your projects

02 **Quickly** generate circuit diagrams

03 **Automatic** power loss & heat calculation feature

04 **Simply** generate your terminal plan

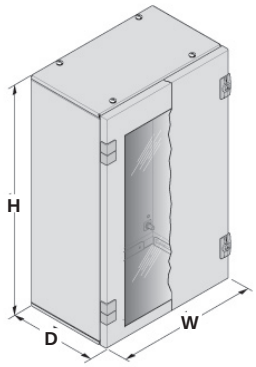
05 **Up to Date** documentation & operating instructions

06 **Greater accuracy** for cabinet calculations

07 **User friendly** function for device labels



**To learn more about Hagercad visit www.em.co.za/hagercad**




**Orion + Enclosures** *(IP65) (sheet metal and polyester)*

Sheet steel or glass reinforced polyester - **Orion Plus** enclosures suited for the harshest conditions can be applied for wet and mechanical use. Even under chemical use, Orion Plus offers the ideal solution with glass reinforced polyester.

Flexibility is provided via mounting plate or DIN-rail *(in 2 different versions)* and thus offers the suitable interior equipment system - both for the application in automation and for classical current distribution.

- Colour: RAL 7035 *(light grey)*
- Mounting: Surface mounting
- Certification: CEI EN 60439-1
- Material: Sheet steel - class I or polyester - class II
- IP Rating: *(IP65/IK10)* protection, insulation class I *(powder-coated epoxy polyester)*

**General features:**

- Size and depth adapted according to your need
- Front door with foamed gasket opening 140º, hinged left or right
- Interior kits for conversion to distribution facility *(for mounting MCB and modular products)*
- Polyester enclosures for indoor and outdoor applications
- Sheet metal enclosures for indoor application

**Typical applications:**

- Installation of automation products for the control of machines or small processes
- Installation of non modular products such as contactors, transformers, etc
- Cable termination and distribution


FL117A


FL110A+FL547A


FL404A

| type | protection | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|
| **Sheet metal enclosures** 630A *(surface mounting)* | | | | | | |
| • Colour: RAL 7035 *(light grey)* | | | | | | |
| • IP65 protection, insulation class I *(powder-coated epoxy polyester)* | | | | | | |
| • Full-sized top and bottom gland plates *(enclosures can be mounted on top of each other)* | | | | | | |
| **FL102A** | IP65 | surface mount sheet metal enclosure | 300 | 250 | 160 | **2 625.00** |
| **FL104A** | IP65 | surface mount sheet metal enclosure | 350 | 300 | 160 | **2 845.50** |
| **FL110A** | IP65 | surface mount sheet metal enclosure | 500 | 300 | 200 | **3 538.50** |
| **FL112A** | IP65 | surface mount sheet metal enclosure | 500 | 400 | 200 | **3 990.00** |
| **FL117A** | IP65 | surface mount sheet metal enclosure | 650 | 400 | 200 | **4 441.50** |
| **FL120A** | IP65 | surface mount sheet metal enclosure | 650 | 500 | 250 | **5 239.50** |
| **FL124A** | IP65 | surface mount sheet metal enclosure | 800 | 600 | 300 | **6 153.00** |
| **FL128AEM** | IP65 | surface mount sheet metal enclosure | 950 | 800 | 300 | **8 001.00** |
| **FL130AEM** | IP65 | surface mount sheet metal enclosure | 1250 | 800 | 300 | **10 279.50** |
| *Above enclosures with transparent door (add suffix T to part no. - e.g **FL102AT** )* | | | | | | **+ 15%** |
| **Polyester enclosures** 630A *(surface mounting)* | | | | | | |
| • Colour: RAL 7035 *(light grey)* | | | | | | |
| • IP66 protection, insulation class II | | | | | | |
| • Waterproof hood, top and bottom *(incorporated)* | | | | | | |
| **FL204B** | IP66 | surface mount polyester enclosure | 350 | 300 | 160 | **3 874.50** |
| **FL209B** | IP66 | surface mount polyester enclosure | 500 | 300 | 200 | **4 441.50** |
| **FL213B** | IP66 | surface mount polyester enclosure | 500 | 400 | 200 | **4 903.50** |
| **FL216B** | IP66 | surface mount polyester enclosure | 650 | 400 | 200 | **6 153.00** |
| **FL221B** | IP66 | surface mount polyester enclosure | 650 | 500 | 250 | **7 518.00** |
| **FL221BT** | IP66 | as above + transparent door | 650 | 500 | 250 | **5 901.00** |
| **FL229B** | IP66 | surface mount polyester enclosure | 800 | 600 | 300 | **9 796.50** |
| *Above enclosures,* add suffix T to part no. - e.g **FL204BT** *(excl.* **FL221BT** *with transparent door)* | | | | | | **+15%** |

**Chassis plates** *(supplied separately)*

- Plain mounting plate mounted either directly
- Sheet metal thickness 2 mm
- Mounting either directly on the back of enclosure or on the integrated slides with brackets **FL450A** to adjust depth, see page ***H-14***

| type | description | | for enclosures | price |
|---|---|---|---|---|
| **FL402A** | internal sheet metal chassis plate | for enclosure | FL102 | **399.00** |
| **FL404A** | internal sheet metal chassis plate | for enclosure | FL104/204 | **411.60** |
| **FL407A** | internal sheet metal chassis plate | for enclosure | FL110/209 | **625.80** |
| **FL408A** | internal sheet metal chassis plate | for enclosure | FL112/213 | **683.55** |
| **FL412A** | internal sheet metal chassis plate | for enclosure | FL117/216 | **865.20** |
| **FL413A** | internal sheet metal chassis plate | for enclosure | FL120/221/221B | **1 025.85** |
| **FL415A** | internal sheet metal chassis plate | for enclosure | FL124/229 | **1 480.50** |
| **FL417AEM** | internal sheet metal chassis plate | for enclosure | FL128 | **2 299.50** |
| **FL419AEM** | internal sheet metal chassis plate | for enclosure | FL130 | **2 898.00** |



Above ZAR prices do not include VAT. E&OE


FL544A

## Orion + Enclosures *(IP65) (sheet metal and polyester)*

### Internal door assembly

- Internal doors, sheet metal reversible
- Delivered with fixing accessories mounting on slides with delivered fixing frame

| type | description | | for enclosures | price |
|---|---|---|---|---|
| **FL544A** | internal door mounting kit | for enclosure | FL104/204 | **2 509.50** |
| **FL547A** | internal door mounting kit | for enclosure | FL110/209 | **2 740.50** |
| **FL548A** | internal door mounting kit | for enclosure | FL112/213 | **2 740.50** |
| **FL551A** | internal door mounting kit | for enclosure | FL117/216 | **3 076.50** |
| **FL552A** | internal door mounting kit | for enclosure | FL120/221 | **3 192.00** |
| **FL555A** | internal door mounting kit | for enclosure | FL124/229 | **3 990.00** |
| **FL557A** | internal door mounting kit | for enclosure | FL128 | **4 672.50** |
| **FL559A** | internal door mounting kit | for enclosure | FL130 | **5 239.50** |

### Functional chassis *(complete)* for mounting modular products and MCB


FL981A

- To convert a surface mount enclosure int a distribution board
- Pre-assembled made up of: 2 Uprights, DIN guides and modular panels

| type | number of modular ways | | description | for enclosures | price |
|---|---|---|---|---|---|
| **FL979A** | 24 | *(2x12)* | complete modular chassis system | FL104A | **1 428.00** |
| **FL980A** | 24 | *(2x12)* | complete modular chassis system | FL204B | **1 375.50** |
| **FL981A** | 36 | *(3x12)* | complete modular chassis system | FL110/209 | **1 533.00** |
| **FL982A** | 54 | *(3x18)* | complete modular chassis system | FL112/213 | **2 058.00** |
| **FL983A** | 72 | *(4x18)* | complete modular chassis system | FL117/216 | **2 982.00** |
| **FL994A** | 88 | *(4x22)* | complete modular chassis system | FL120A/221B | **3 444.00** |
| **FL996A** | 140 | *(5x28)* | complete modular chassis system | FL124A/229B | **4 578.00** |
| **FL998A** | 216 | *(6x36)* | complete modular chassis system | FL128A | **5 953.50** |
| **FL000A** | 288 | *(8x36)* | complete modular chassis system | FL130A | **7 150.50** |

### Kits for main incomer for enclosures

| | | | | | |
|---|---|---|---|---|---|
| **FL372A** | (H) 300 mm | kit to mount 125/160A MCCB | into | FL120/221 | **1 386.00** |
| **FL373A** | (H) 300 mm | kit to mount 125/160A MCCB | into | FL124/229 | **1 606.50** |
| **FL374A** | (H) 300 mm | kit to mount 125/160A MCCB | into | FL128/130 | **1 869.00** |

*Above requires **HYA033H** DIN-rail adaptor to mount onto rail in kit, see MCCB accessories*

### Blank front covers


FL713E

- Fixed by screws of 1/4 turn to replace modular covers

| | | | | |
|---|---|---|---|---|
| **FL711E** | 150 mm | blank front cover for enclosures | FL104/10FL204/9 | **327.60** |
| **FL712E** | 150 mm | blank front cover for enclosures | FL112/17/FL213/16 | **390.60** |
| **FL713E** | 150 mm | blank front cover for enclosures | FL120A/221B | **415.80** |
| **FL714E** | 150 mm | blank front cover for enclosures | FL124A/229B | **512.40** |
| **FL715E** | 150 mm | blank front cover for enclosures | FL128/130A | **649.95** |
| **FL733E** | 300 mm | blank front cover for enclosures | FL120A/221B | **1 480.50** |
| **FL734E** | 300 mm | blank front cover for enclosures | FL124A/229B | **1 596.00** |
| **FL735E** | 300 mm | blank front cover for enclosures | FL128/130A | **1 711.50** |

### Plinths for enclosures

| | | | | |
|---|---|---|---|---|
| **FL958A** | base mount plinth system | for enclosures | FL120/221 | **3 423.00** |
| **FL960A** | base mount plinth system | for enclosures | FL124/229 | **3 874.50** |
| **FL962A** | base mount plinth system | for enclosures | FL128/130 | **4 441.50** |

### Accessories for enclosures


FL96Z


FL958A


FL85Z


FL670A

| | | |
|---|---|---|
| **FL670A** | seal kit for mounting enclosures one above another | **399.00** |
| **FL85Z** | metallic mounting brackets for sheet metal enclosures | **174.30** |
| **FL863Z** | plastic mounting brackets for polyester enclosures | **333.90** |
| **FL871Z** | blanking strip *(grey)* 6 x 4 way blanks in a pack | **76.65** |
| **FL96ZX01** | lever handle door lock *(without key)* for all enclosures | **236.25** |
| **FL96Z** | lever handle door lock *(with key)* for all enclosures | **229.95** |
| **FL93Z** | set of 2 locks triangular centre 8 mm | **161.70** |
| **FL450A** | 4 brackets delivered with fixing screws | **256.20** |



HE204



HE204T-G

## HE series - Sheet metal electrical enclosures

- Manufactured from high-grade mild steel, powder-coated
- Supplied with internal Aluzinc chassis plate *(2 mm thick)*
- Supplied with 6 mm square drive locks, panel key and mounting brackets
- Degree of protection: IP65 *(continuous foam gasket)*

| type | IP rating | colour | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **Sheet metal enclosures** | | | | **IP65** | | | |
| Orange enclosures - *(RAL2000)* electric orange | | | | | | | |
| **HE200** | IP65 | orange | wall mount sheet metal enclosure | 250 | 200 | 170 | **1 470.00** |
| **HE201** | IP65 | orange | wall mount sheet metal enclosure | 350 | 250 | 170 | **1 785.00** |
| **HE202** | IP65 | orange | wall mount sheet metal enclosure | 450 | 300 | 220 | **2 205.00** |
| **HE203** | IP65 | orange | wall mount sheet metal enclosure | 550 | 400 | 220 | **2 688.00** |
| **HE203GP1*** | IP65 | orange | *as above* with bottom gland plate | 550 | 400 | 220 | **3 318.00** |
| **HE204** | IP65 | orange | wall mount sheet metal enclosure | 650 | 450 | 270 | **3 339.00** |
| **HE205** | IP65 | orange | wall mount sheet metal enclosure | 750 | 550 | 270 | **4 137.00** |
| **HE206** | IP65 | orange | wall mount sheet metal enclosure | 850 | 600 | 270 | **5 134.50** |
| **HE206E** | IP65 | orange | wall mount sheet metal enclosure | 850 | 600 | 330 | **5 554.50** |
| **HE206EGP1*** | IP65 | orange | *as above* with bottom gland plate | 850 | 600 | 330 | **6 888.00** |
| **HE207** | IP65 | orange | wall mount sheet metal enclosure | 950 | 700 | 270 | **6 153.00** |
| **HE207E** | IP65 | orange | wall mount sheet metal enclosure | 950 | 700 | 330 | **6 667.50** |
| **HE207EGP1*** | IP65 | orange | *as above* with bottom gland plate | 950 | 700 | 330 | **8 820.00** |
| **HE208** | IP65 | orange | wall mount sheet metal enclosure | 1150 | 850 | 270 | **8 274.00** |
| **HE208E** | IP65 | orange | wall mount sheet metal enclosure | 1150 | 850 | 330 | **9 082.50** |
| * **GP1**-*(bottom gland plate)* | | | | | | | |
| **Enclosures with transparent glass door** | | | | | | | |
| **HE201T** | IP65 | orange | enclosure with transparent door | 350 | 250 | 170 | **2 457.00** |
| **HE202T** | IP65 | orange | enclosure with transparent door | 450 | 300 | 220 | **2 961.00** |
| **HE203T** | IP65 | orange | enclosure with transparent door | 550 | 400 | 220 | **3 454.50** |
| **HE204T** | IP65 | orange | enclosure with transparent door | 650 | 450 | 270 | **4 641.00** |
| **HE205T** | IP65 | orange | enclosure with transparent door | 750 | 550 | 270 | **6 058.50** |
| **HE206T** | IP65 | orange | enclosure with transparent door | 850 | 600 | 270 | **6 825.00** |
| **HE206ET** | IP65 | orange | enclosure with transparent door | 850 | 600 | 330 | **7 234.50** |
| **HE207T** | IP65 | orange | enclosure with transparent door | 950 | 700 | 270 | **8 242.50** |
| **HE207ET** | IP65 | orange | enclosure with transparent door | 950 | 700 | 330 | **8 746.50** |
| **HE208T** | IP65 | orange | enclosure with transparent door | 1150 | 850 | 270 | **11 130.00** |
| **HE208ET** | IP65 | orange | enclosure with transparent door | 1150 | 850 | 330 | **11 865.00** |
| **Grey enclosures -** (RAL7032) light grey | | | | **IP65** | | | |
| **HE200-G** | IP65 | grey | wall mount sheet metal enclosure | 250 | 200 | 170 | **1 470.00** |
| **HE201-G** | IP65 | grey | wall mount sheet metal enclosure | 350 | 250 | 170 | **1 785.00** |
| **HE202-G** | IP65 | grey | wall mount sheet metal enclosure | 450 | 300 | 220 | **2 205.00** |
| **HE203-G** | IP65 | grey | wall mount sheet metal enclosure | 550 | 400 | 220 | **2 688.00** |
| **HE204-G** | IP65 | grey | wall mount sheet metal enclosure | 650 | 450 | 270 | **3 475.50** |
| **HE205-G** | IP65 | grey | wall mount sheet metal enclosure | 750 | 550 | 270 | **4 410.00** |
| **HE206-G** | IP65 | grey | wall mount sheet metal enclosure | 850 | 600 | 270 | **5 134.50** |
| **HE206E-G** | IP65 | grey | wall mount sheet metal enclosure | 850 | 600 | 330 | **5 554.50** |
| **HE207-G** | IP65 | grey | wall mount sheet metal enclosure | 950 | 700 | 270 | **6 153.00** |
| **HE207E-G** | IP65 | grey | wall mount sheet metal enclosure | 950 | 700 | 330 | **6 667.50** |
| **HE208-G** | IP65 | grey | wall mount sheet metal enclosure | 1150 | 850 | 270 | **8 274.00** |
| **HE208E-G** | IP65 | grey | wall mount sheet metal enclosure | 1150 | 850 | 330 | **9 082.50** |
| **Enclosures with transparent glass door** | | | | | | | |
| **HE201T-G** | IP65 | grey | enclosure with transparent door | 350 | 250 | 170 | **2 457.00** |
| **HE202T-G** | IP65 | grey | enclosure with transparent door | 450 | 300 | 220 | **2 961.00** |
| **HE203T-G** | IP65 | grey | enclosure with transparent door | 550 | 400 | 220 | **3 454.50** |
| **HE204T-G** | IP65 | grey | enclosure with transparent door | 650 | 450 | 270 | **4 641.00** |
| **HE205T-G** | IP65 | grey | enclosure with transparent door | 750 | 550 | 270 | **6 058.50** |
| **HE206T-G** | IP65 | grey | enclosure with transparent door | 850 | 600 | 270 | **6 825.00** |
| **HE206ET-G** | IP65 | grey | enclosure with transparent door | 850 | 600 | 330 | **7 234.50** |
| **HE207T-G** | IP65 | grey | enclosure with transparent door | 950 | 700 | 270 | **8 242.50** |
| **HE207ET-G** | IP65 | grey | enclosure with transparent door | 950 | 700 | 330 | **8 746.50** |
| **HE208T-G** | IP65 | grey | enclosure with transparent door | 1150 | 850 | 270 | **11 130.00** |
| **HE208ET-G** | IP65 | grey | enclosure with transparent door | 1150 | 850 | 330 | **11 865.00** |



Above ZAR prices do not include VAT. E&OE



HE204T + ID04 + HC04



HC0...



16.4.431.01



HE12960GP2



GAZS1E

| type | IP rating | colour | description | | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Internal door kit for HE enclosures** | | | | | | | | |
| • Reversible and lockable | | | | | | | | |
| **ID02** | – | white | internal door kit for enclosures | HE202 | – | – | – | **873.60** |
| **ID03** | – | white | internal door kit for enclosures | HE203 | – | – | – | **1 155.00** |
| **ID04** | – | white | internal door kit for enclosures | HE204 | – | – | – | **1 512.00** |
| **ID05** | – | white | internal door kit for enclosures | HE205 | – | – | – | **1 858.50** |
| **ID06** | – | white | internal door kit for enclosures | HE206 | – | – | – | **2 268.00** |
| **ID06E** | – | white | internal door kit for enclosures | HE206E | – | – | – | **2 352.00** |
| **ID07** | – | white | internal door kit for enclosures | HE207 | – | – | – | **2 814.00** |
| **ID07E** | – | white | internal door kit for enclosures | HE207E | – | – | – | **2 971.50** |
| **ID08** | – | white | internal door kit for enclosures | HE208 | – | – | – | **3 444.00** |
| **ID08E** | – | white | internal door kit for enclosures | HE208E | – | – | – | **3 654.00** |
| **Canopy for HE enclosures** | | | | | | | | |
| **Orange -** RAL2000 *(electric orange)* | | | | | | | | |
| **HC02** | IP65 | orange | steel canopy for enclosures | HE202 | – | 300 | 220 | **434.70** |
| **HC03** | IP65 | orange | steel canopy for enclosures | HE203 | – | 400 | 220 | **485.10** |
| **HC04** | IP65 | orange | steel canopy for enclosures | HE204 | – | 450 | 270 | **610.05** |
| **HC05** | IP65 | orange | steel canopy for enclosures | HE205 | – | 550 | 270 | **783.30** |
| **HC06** | IP65 | orange | steel canopy for enclosures | HE206 | – | 600 | 270 | **803.25** |
| **HC06E** | IP65 | orange | steel canopy for enclosures | HE206E | – | 600 | 330 | **903.00** |
| **HC07** | IP65 | orange | steel canopy for enclosures | HE207 | – | 700 | 270 | **948.15** |
| **HC07E** | IP65 | orange | steel canopy for enclosures | HE207E | – | 700 | 330 | **1 081.50** |
| **HC08** | IP65 | orange | steel canopy for enclosures | HE208 | – | 850 | 270 | **1 123.50** |
| **HC08E** | IP65 | orange | steel canopy for enclosures | HE208E | – | 850 | 330 | **1 333.50** |
| **Grey -** RAL7032 *(light grey)* | | | | | | | | |
| **HC02-G** | IP65 | grey | steel canopy for enclosures | HE202 | – | 300 | 220 | **434.70** |
| **HC03-G** | IP65 | grey | steel canopy for enclosures | HE203 | – | 400 | 220 | **485.10** |
| **HC04-G** | IP65 | grey | steel canopy for enclosures | HE204 | – | 450 | 270 | **610.05** |
| **HC05-G** | IP65 | grey | steel canopy for enclosures | HE205 | – | 550 | 270 | **783.30** |
| **HC06-G** | IP65 | grey | steel canopy for enclosures | HE206 | – | 600 | 270 | **803.25** |
| **HC06E-G** | IP65 | grey | steel canopy for enclosures | HE206E | – | 600 | 330 | **903.00** |
| **HC07-G** | IP65 | grey | steel canopy for enclosures | HE207 | – | 700 | 270 | **948.15** |
| **HC07E-G** | IP65 | grey | steel canopy for enclosures | HE207E | – | 700 | 330 | **1 081.50** |
| **HC08-G** | IP65 | grey | steel canopy for enclosures | HE208 | – | 850 | 270 | **1 123.50** |
| **HC08E-G** | IP65 | grey | steel canopy for enclosures | HE208E | – | 850 | 330 | **1 333.50** |
| **Accessories** | | | | | | | | |
| **16.4.431.01** | 16 mm | black | padlockable lever handle | | for above enclosures | | | **199.50** |
| **Special "extra deep" enclosures** | | | | | **IP65** | | | |
| • Ideal for changeover switch applications | | | | | | | | |
| • Supplied with internal Aluzinc chassis plate *(2 mm thick)* | | | | | | | | |
| • Degree of protection: IP65 *(continuous foam gasket)* | | | | | | | | |
| • Colour : RAL2000 *(electric orange)* - other colours on request | | | | | | | | |
| **HE09645** | IP65 | orange | extra deep sheet metal enclosures | | 900 | 600 | 450 | **12 180.00** |
| **HE12960GP1*** | IP65 | orange | *as above* with top/bottom gland plate | | 1200 | 900 | 600 | **22 995.00** |
| * **GP1**-*(bottom gland plate)* | | | | | | | | |
| **Special "termination" boxes** | | | | | **IP65** | | | |
| • Front cover secured by 4 x screws | | | | | | | | |
| **Sheet metal enclosures** | | | | | | | | |
| **GAZM1E** | IP65 | grey | sheet metal enclosures | | 200 | 150 | 120 | **1 470.00** |
| **Stainless steel** (AISI 304) **enclosures** | | | | | | | | |
| **GAZS1E** | IP65 | S/Steel | stainless steel enclosures | | 200 | 150 | 120 | **2 919.00** |
| *For stainless steel enclosures see overleaf* | | | | | | | | |


SE....

### 3CR12 series - Stainless steel enclosures

- Manufactured from 3CR12 stainless steel and powder-coated
- Supplied with internal Aluzinc chassis plate *(2 mm thick)*
- Supplied with 6 mm square drive locks, panel key and mounting brackets
- Degree of protection: IP65 *(continuous foam gasket)*
- Colour: RAL2000 *(electric orange)* - other colours on request

| type | IP rating | colour | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **3CR12 stainless steel enclosures** | | | | **IP65** | | | |
| **SE1035** | IP65 | orange | 3CR12 stainless steel enclosure | 350 | 250 | 170 | **2 604.00** |
| **SE1040** | IP65 | orange | 3CR12 stainless steel enclosure | 400 | 300 | 220 | **3 108.00** |
| **SE1050** | IP65 | orange | 3CR12 stainless steel enclosure | 500 | 400 | 220 | **3 780.00** |
| **SE1065** | IP65 | orange | 3CR12 stainless steel enclosure | 600 | 500 | 220 | **4 903.50** |
| **SE1070** | IP65 | orange | 3CR12 stainless steel enclosure | 700 | 600 | 270 | **6 594.00** |
| **SE1080** | IP65 | orange | 3CR12 stainless steel enclosure | 800 | 600 | 270 | **8 095.50** |
| **SE1090** | IP65 | orange | 3CR12 stainless steel enclosure | 900 | 700 | 330 | **9 712.50** |
| **SE1100** | IP65 | orange | 3CR12 stainless steel enclosure | 1000 | 800 | 330 | **11 970.00** |
| **SE1201** | IP65 | orange | 3CR12 stainless steel enclosure | 1200 | 800 | 330 | **13 650.00** |
| **Stainless steel enclosures with transparent glass door** | | | | | | | |
| **SE1040T** | IP65 | orange | 3CR12 enc. with transparent door | 400 | 300 | 220 | **4 011.00** |
| **SE1050T** | IP65 | orange | 3CR12 enc. with transparent door | 500 | 400 | 220 | **4 924.50** |
| **SE1065T** | IP65 | orange | 3CR12 enc. with transparent door | 600 | 500 | 220 | **6 447.00** |
| **SE1070T** | IP65 | orange | 3CR12 enc. with transparent door | 700 | 600 | 270 | **8 473.50** |
| **SE1080T** | IP65 | orange | 3CR12 enc. with transparent door | 800 | 600 | 270 | **10 248.00** |
| **SE1090T** | IP65 | orange | 3CR12 enc. with transparent door | 900 | 700 | 330 | **12 495.00** |
| **SE1100T** | IP65 | orange | 3CR12 enc. with transparent door | 1000 | 800 | 330 | **15 330.00** |
| **SE1201T** | IP65 | orange | 3CR12 enc. with transparent door | 1200 | 800 | 330 | **17 745.00** |


RGS....

### Canopy for above enclosures

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **HC3CR-4** | IP65 | orange | canopy for stainless steel enclosures | | | SE1040 | **1 001.70** |
| **HC3CR-5** | IP65 | orange | canopy for stainless steel enclosures | | | SE1050 | **1 030.05** |
| **HC3CR-6** | IP65 | orange | canopy for stainless steel enclosures | | | SE1065 | **1 144.50** |
| **HC3CR-7** | IP65 | orange | canopy for stainless steel enclosures | | | SE1070/1080 | **1 396.50** |
| **HC3CR-9** | IP65 | orange | canopy for stainless steel enclosures | | | SE1090 | **1 617.00** |
| **HC3CR-10** | IP65 | orange | canopy for stainless steel enclosures | | | SE1100/1200 | **1 848.00** |

*Add **"-G"** to the end of the above **SE.. / HC3CR..** part numbers for grey (RAL7032) enclosures*

### 304 stainless steel enclosures IP65

- Manufactured from high grade SS 304 stainless steel
- Supplied with internal Aluzinc chassis plate *(2 mm thick)*
- Supplied with bottom SS 304 gland plate and enclosure mounting brackets
- Degree of protection: IP65 *(continuous foam gasket)*
- Colour: Stainless steel - "brushed" finish

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **RGS304-30** | IP65 | S/Steel | SS 304 stainless steel enclosure | 350 | 250 | 170 | **4 053.00** |
| **RGS304-40** | IP65 | S/Steel | SS 304 stainless steel enclosure | 400 | 300 | 220 | **5 071.50** |
| **RGS304-50** | IP65 | S/Steel | SS 304 stainless steel enclosure | 500 | 400 | 220 | **6 888.00** |
| **RGS304-65** | IP65 | S/Steel | SS 304 stainless steel enclosure | 600 | 500 | 220 | **9 859.50** |
| **RGS304-70** | IP65 | S/Steel | SS 304 stainless steel enclosure | 700 | 600 | 270 | **13 650.00** |
| **RGS304-80** | IP65 | S/Steel | SS 304 stainless steel enclosure | 800 | 600 | 270 | **15 225.00** |
| **RGS304-93** | IP65 | S/Steel | SS 304 stainless steel enclosure | 900 | 700 | 330 | **19 950.00** |
| **RGS304-103** | IP65 | S/Steel | SS 304 stainless steel enclosure | 1000 | 800 | 330 | **23 835.00** |
| **RGS304-123** | IP65 | S/Steel | SS 304 stainless steel enclosure | 1200 | 800 | 330 | **28 665.00** |


RGS....

### Internal door kit for all above enclosures *(mild steel)*

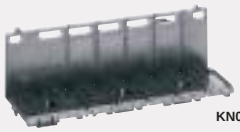
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ID3CR-4** | – | white | internal door kit for above enclosures | 400 | 300 | 170 | **945.00** |
| **ID3CR-5** | – | white | internal door kit for above enclosures | 500 | 400 | 220 | **1 239.00** |
| **ID3CR-6** | – | white | internal door kit for above enclosures | 600 | 500 | 220 | **1 669.50** |
| **ID3CR-7** | – | white | internal door kit for above enclosures | 700 | 600 | 270 | **2 110.50** |
| **ID3CR-8** | – | white | internal door kit for above enclosures | 800 | 600 | 270 | **2 425.50** |
| **ID3CR-9** | – | white | internal door kit for above enclosures | 900 | 700 | 330 | **3 055.50** |
| **ID3CR-10** | – | white | internal door kit for above enclosures | 1000 | 800 | 330 | **3 570.00** |
| **ID3CR-12** | – | white | internal door kit for above enclosures | 1200 | 800 | 330 | **3 801.00** |

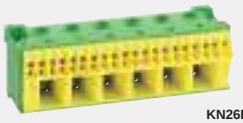


Above ZAR prices do not include VAT. E&OE


KM13E


KM13N


KN00A


KN26E


KN99...


KN04P


KN07N


KJ02C


KJ02A


KJ01B


KJ02E

| type | description | price |
|---|---|---|
| **Rail mountable earth/neutral terminals** *(clips vertically onto rail)* | | |
| **KM13N** | rail mountable neutral terminal *(blue)* 6 x 16 + 7 x 10 mm² | **80.85** |
| **KM13E** | rail mountable earth terminal *(green)* 6 x 16 + 7 x 10 mm² | **85.05** |
| **Terminal support** *(clips into various distribution boards)* | | |
| **KN00A** | universal terminal support DIN-rail mount *(horizontal or vertical)* 105 mm | **54.60** |

**Distribution terminals** *(fully insulated clips onto above support)*

Incoming: 1.5..25 mm² screw clamp terminal
Outgoing: 1.5..4 mm² connect cage clamp terminals (push-in)

| type | | supply 1.5..25 mm² | output 1.5..4 mm² | description | colour | price |
|---|---|---|---|---|---|---|
| **KN10E** | 63A | 2 x 25 mm² | 8 x 4 mm² | insulated earth terminal | *(green)* | **122.85** |
| **KN18E** | 63A | 4 x 25 mm² | 14 x 4 mm² | insulated earth terminal | *(green)* | **151.20** |
| **KN26E** | 63A | 6 x 25 mm² | 20 x 4 mm² | insulated earth terminal | *(green)* | **181.65** |
| **KN99E** | earth insulated bridge piece for above terminals *(push-in)* | | | | | **264.60** |
| **KN10N** | 63A | 2 x 25 mm² | 8 x 4 mm² | insulated neutral terminal | *(blue)* | **122.85** |
| **KN18N** | 63A | 4 x 25 mm² | 14 x 4 mm² | insulated neutral terminal | *(blue)* | **151.20** |
| **KN26N** | 63A | 6 x 25 mm² | 20 x 4 mm² | insulated neutral terminal | *(blue)* | **181.65** |
| **KN99N** | neutral insulated bridge piece for above terminals *(10pcs)* | | | | | **264.60** |
| **KN10P** | 63A | 2 x 25 mm² | 8 x 4 mm² | insulated phase terminal | *(brown)* | **122.85** |
| **KN18P** | 63A | 4 x 25 mm² | 14 x 4 mm² | insulated phase terminal | *(brown)* | **151.20** |
| **KN26P** | 63A | 6 x 25 mm² | 20 x 4 mm² | insulated phase terminal | *(brown)* | **181.65** |
| **KN99P** | phase insulated bridge piece for above terminals *(10 pcs)* | | | | | **264.60** |
| **KN04N** | 90A | 4 x 25 mm² | screw clamp | insulated neutral terminal | *(blue)* | **75.60** |
| **KN07N** | 90A | 7 x 25 mm² | screw clamp | insulated neutral terminal | *(blue)* | **79.80** |
| **KN04P** | 90A | 4 x 25 mm² | screw clamp | insulated phase terminal | *(brown)* | **75.60** |
| **KN07P** | 90A | 7 x 25 mm² | screw clamp | insulated phase terminal | *(brown)* | **79.80** |

**Single-pole distribution blocks** *(fully protected)* *Icc: 36kA*

- Space saving
- IP20 protection
- DIN-rail or bolt down mounting
- One main cable input - various cable outputs

| type | amps | incoming terminals | outgoing terminals (per phase) mm² 1.5...6 | 2.5...10 | 2.5...16 | 2.5...25 | 6...35 | Icc kA | poles | price |
|---|---|---|---|---|---|---|---|---|---|---|
| **KJ02D** | 125A | 1x35/1x16 mm² | | | 6 | | | 36 | 1 pole | **614.25** |
| **KJ02C** | 160A | 70 mm² | | | 6 | | | 36 | 1 pole | **984.90** |
| **KJ02A** | 250A | 95 mm² | | 4 | 5 | 2 | | 36 | 1 pole | **1 270.50** |
| **KJ02B** | 400A | 150 mm² | | 4 | 5 | 2 | | 36 | 1 pole | **1 375.50** |

**Multi-pole distribution blocks**

- Modular DIN-rail mounting *(mounts through modular front cut-out)*
- 3Ph+N distribution bars in modular format
- High fault level
- IEC 60947-1

| type | amps | incoming terminals | outgoing terminals (per phase) mm² 1.5...6 | 2.5...10 | 2.5...16 | 2.5...25 | 6...35 | Icc kA | poles | price |
|---|---|---|---|---|---|---|---|---|---|---|
| **KJ01A** | 100A | 35 mm² | | | 10 | 1 | | 29 | 2 pole | **888.30** |
| **KJ01B** | 80A | 16 mm² | | 8 | | | | 21 | 4 pole | **888.30** |
| **KJ01C** | 125A | 35 mm² | | | 10 | 1 | | 29 | 4 pole | **1 005.90** |
| **KJ01D** | 160A | 50 mm² | | | 8 | | 3 | 20 | 4 pole | **3 066.00** |
| **KJ02E** | 125A | 25 mm² | 5/4* | 2/6* | | | | 20 | 4 pole | **952.35** |

*= Neutral terminals

## Filter / fan units - Panel mounting

Complete filter fan assembly with fan, mounting frame, removable filter, internal finger guard. Mounts through panel wall or door for simple installation as a ventilator device for electrical cabinets/panels.

- Push-in frame, self locking *(fastening without screws)*
- Permanent sealing gasket in polyurethane foam
- Patented hinged system for easy filter replacement without tools
- Shielded self lubricating ball bearings
- Protection type: IP55



113H1238HA2BMT





SVF114H



FU-9804C2 P2A23

| type | voltage (V) | power (W) | noise (dB/A) | air flow (CFM) | dimensions (mm²) size | frame | cutout | price |
|---|---|---|---|---|---|---|---|---|
| **Panel mount fan / filter units** | | | | **IP55** | | | | |
| • Fan, mounting frame, removable filter, internal finger guard | | | | | | | | |
| **AC filter/fans** | | | | | | | | |
| **112H9225HA2BPT** | 230 VAC | 14 | 32 | 18 | 2 | 109 | 92 | **649.95** |
| **113H1238HA2BMT** | 230 VAC | 18 | 42 | 59 | 3 | 145 | 124 | **782.25** |
| **114H17255HA2BMT** | 230 VAC | 28 | 51 | 177 | 4 | 202 | 177 | **2 436.00** |
| **115H1806HA2BMT** | 230 VAC | 47 | 57 | 340 | 5 | 252 | 224 | **2 856.00** |
| **116H2208HA2BMT** | 230 VAC | 58 | 65 | 476 | 6 | 320 | 292 | **3 433.50** |
| **116H2509HA2BMW** | 230 VAC | 57 | 64 | 570 | 6 | 320 | 292 | **3 801.00** |
| **113H1238HA1BMT** | 110 VAC | 18 | 42 | 59 | 3 | 145 | 124 | **782.25** |
| **114H17255HA1BMT** | 110 VAC | 28 | 51 | 177 | 4 | 202 | 177 | **2 436.00** |
| **115H1806HA1BMT** | 110 VAC | 47 | 57 | 340 | 5 | 252 | 224 | **2 856.00** |
| **113H1238HA3BMT** | 380 VAC | 18 | 42 | 59 | 3 | 145 | 124 | **848.40** |
| **114H17255HA3BMT** | 380 VAC | 28 | 51 | 177 | 4 | 202 | 177 | **2 772.00** |
| **115H1806HA3BMT** | 380 VAC | 47 | 57 | 340 | 5 | 252 | 292 | **3 087.00** |
| **DC filter/fans** | | | | | | | | |
| **112H8025MD4BBLS** | 24 VDC | 14 | 36 | 25 | 2 | 109 | 92 | **407.40** |
| **113H1225XD4BCLS** | 24 VDC | 14 | 45 | 41 | 3 | 145 | 124 | **605.85** |
| **115H1724XD4BALS** | 24 VDC | 36 | 54 | 136 | 5 | 252 | 224 | **2 005.50** |
| **Exhaust filter** - *without fan used as a matching air outlet/inlet* | | | | | | | | |
| • Match size of the filter/fan to achieve optimal ventilation within the cabinet | | | | | | | | |
| **SVF112H** | 9225 | – | exhaust filter only | | 2 | 109 | 92 | **176.40** |
| **SVF113H** | 1238 | – | exhaust filter only | | 3 | 145 | 124 | **210.00** |
| **SVF114H** | 1755 | – | exhaust filter only | | 4 | 202 | 177 | **253.05** |
| **SVF115H** | 1806 | – | exhaust filter only | | 5 | 252 | 224 | **463.05** |
| **SVF116H** | 2208 | – | exhaust filter only | | 6 | 320 | 292 | **661.50** |
| **Filter / fan units with rain hood** | | | | **IP55** | | | | |
| • Fan, mounting frame, removable filter, internal finger guard, external rain hood | | | | | | | | |
| **AC filter/fans** - *(with rain hood)* | | | | | | | | |
| **FU-9801C2 P2A23** | 230 VAC | 20 | 30 | 21 | 1 | 109 | 83 | **966.00** |
| **FU-9802C2 P2A23** | 230 VAC | 20 | 35 | 35 | 2 | 121 | 95 | **1 102.50** |
| **FU-9803C2 P2A23** | 230 VAC | 21 | 49 | 99 | 3 | 149 | 122 | **1 207.50** |
| **FU-9804C2 P2A23** | 230 VAC | 30 | 56 | 213 | 4 | 204 | 175 | **1 837.50** |
| **FU-9805C2 P2A23** | 230 VAC | 49 | 67 | 592 | 5 | 255 | 223 | **4 294.50** |
| **FU-9806C2 P2A23** | 230 VAC | 50 | 66 | 788 | 6 | 332 | 292 | **6 163.50** |
| **FU-9803C2 P2A40** | 400 VAC | 21 | 49 | 99 | 3 | 149 | 122 | **1 134.00** |
| **FU-9804C2 P2A40** | 400 VAC | 30 | 56 | 2.3 | 4 | 204 | 175 | **1 722.00** |
| **DC filter/fans** - *(with rain hood)* | | | | | | | | |
| **FU-9801C2 P2D** | 24 VDC | 1.44 | 42 | 34 | 1 | 109 | 83 | **799.05** |
| **FU-9802C2 P2D** | 24 VDC | 1.92 | 44 | 51 | 2 | 121 | 95 | **824.25** |
| **FU-9803C2 P2D** | 24 VDC | 2.64 | 48 | 89 | 3 | 149 | 122 | **1 155.00** |
| **Exhaust filter with rain hood** - *without fan used as an air outlet/inlet* | | | | | | | | |
| • Match size of the filter/fan to achieve optimal ventilation within the cabinet | | | | | | | | |
| **FU9801B P2** | – | – | exhaust filter only | | 1 | 109 | 83 | **559.65** |
| **FU9802B P2** | – | – | exhaust filter only | | 2 | 121 | 95 | **602.70** |
| **FU9803B P2** | – | – | exhaust filter only | | 3 | 149 | 122 | **697.20** |
| **FU9804B P2** | – | – | exhaust filter only | | 4 | 204 | 175 | **803.25** |
| **FU9805B P2** | – | – | exhaust filter only | | 5 | 255 | 223 | **1 249.50** |
| **FU9806B P2** | – | – | exhaust filter only | | 6 | 332 | 292 | **2 499.00** |

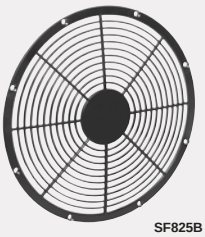


Above ZAR prices do not include VAT. E&OE


1238XA2BPT


1725XA3BPT


FU9805B P2/P5-220


SF825B


MG-80


SF8...

## Frame fans and accessories

- Temperature: -40°C...+60°C
- Shielded self lubricating ball bearing fans

| type | voltage (V) | power (W) | noise (dB/A) | air flow (CFM) | dimensions (mm²) size | □ | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **AC frame fans only** | | | | | | | | |
| **8025HA2BPT** | 230 VAC | 14 | 30 | 19 | 1 | 80 | 25 | **441.00** |
| **9238HA2BPT** | 230 VAC | 17 | 38 | 43 | 2 | 92 | 38 | **441.00** |
| **1238XA2BPT** | 230 VAC | 20 | 40 | 93 | 3 | 120 | 38 | **473.55** |
| **1725XA2BPT** | 230 VAC | 40 | 46 | 200 | 4 | 172 x 150 | 51 | **788.55** |
| **2206HA2BMT** | 230 VAC | 47 | 60 | 450 | 5 | Ø 222 | 60 | **2 005.50** |
| **2509HA2BMW** | 230 VAC | 57 | 64 | 670 | 6 | Ø 255 | 89 | **2 761.50** |
| **1238XA3BPT** | 380 VAC | 18 | 40 | 96 | 3 | 120 | 38 | **529.20** |
| **1725XA3BPT** | 380 VAC | 34 | 46 | 200 | 4 | 172 x 150 | 51 | **935.55** |
| **2206HA3BMW** | 380 VAC | 42 | 60 | 450 | 5 | Ø 222 | 60 | **2 268.00** |
| **2509HA3BMW** | 380 VAC | 52 | 64 | 670 | 6 | Ø 255 | 89 | **3 045.00** |
| **DC frame fans - 24V DC** *(12…27.6 VDC)* | | | | | | | | |
| **8025HD4BBLS** | 24 VDC | 0.80A | 41 | 56 | 1 | 80 | 25 | **143.85** |
| **9225HD4BBLS** | 24 VDC | 0.35A | 44 | 73 | 2 | 92 | 25 | **159.60** |
| **1225HD4BCLS** | 24 VDC | 0.80A | 44 | 100 | 3 | 120 | 25 | **204.75** |
| **1725HD4BALS** | 24 VDC | 2.50A | 58 | 256 | 4 | 172 x 150 | 51 | **1 218.00** |

## Exhaust filter - without fan — IP55

- Match size of the filter/fan to achieve optimal ventilation within the cabinet

| type | accepts fan type | with air duct | external material | | dimensions (mm²) size | frame | cutout | price |
|---|---|---|---|---|---|---|---|---|
| **SVF112H** | 8025 | no | UL94-V0 | – | 1/2 | 109 | 92 | **176.40** |
| **SVF113H** | 1238 | no | UL94-V0 | – | 3 | 145 | 124 | **210.00** |
| **SVF114H** | 1725 | yes | UL94-V0 | – | 4 | 202 | 177 | **253.05** |
| **SVF115H** | 2206 | yes | UL94-V0 | – | 5 | 252 | 224 | **463.05** |
| **SVF116H** | 2509 | yes | UL94-V0 | – | 6 | 320 | 292 | **661.50** |
| **All metallic version** *(ADC12 aluminium alloy material)* | | | | | | | | |
| **FU9803AM** | K1238 | – | metal | – | 3 | 149 | 122 | **1 785.00** |

## Panel mount filter units - with rain hood cover — IP55

| type | accepts fan type | with air duct | external material | | dimensions (mm²) size | frame | cutout | price |
|---|---|---|---|---|---|---|---|---|
| **FU9802B P2** | 9225 | – | PC+UV | – | 2 | 121 | 95 | **602.70** |
| **FU9803B P2** | 1238 | – | PC+UV | – | 3 | 149 | 122 | **697.20** |
| **FU9804B P2/P4-172** | 1725 | P4-172 | PC+UV | – | 4 | 204 | 175 | **878.85** |
| **FU9805B P2/P5-220** | 2206 | P5-220 | PC+UV | – | 5 | 255 | 223 | **1 428.00** |
| **FU9806B P2/P6-250** | 2509 | P6-250 | PC+UV | – | 6 | 332 | 292 | **2 730.00** |
| **All metallic version** *(ADC12 aluminium alloy material)* | | | | | | | | |
| **FU9803BM** | 1238 | – | metal | – | 3 | 149 | 122 | **3 559.50** |

## Finger guards *(internal) for fans*

| type | for fan | colour | material | description | size | H | W | price |
|---|---|---|---|---|---|---|---|---|
| **SF808B** | 8025 | black | ABS | finger guard | 1 | 80 | 80 | **8.61** |
| **SF809B** | 9225 | black | ABS | finger guard | 2 | 92 | 92 | **8.61** |
| **SF812B** | 1238 | black | ABS | finger guard | 3 | 119 | 119 | **13.23** |
| **SF817B** | 1725 | black | ABS | finger guard | 4 | 172 | 151 | **21.84** |
| **SF822B** | 2206 | black | ABS | finger guard | 5 | 222 | Ø | **32.76** |
| **SF825B** | 2509 | black | ABS | finger guard | 6 | 259 | Ø | **45.15** |
| **MG-80** | 8025 | chrome | metal | finger guard | 1 | 75 | 75 | **10.92** |
| **MG-92** | 9225 | chrome | metal | finger guard | 2 | 89 | 89 | **10.92** |
| **MG-120** | 1238 | chrome | metal | finger guard | 3 | 115 | 115 | **16.38** |
| **MG-172** | 1725 | chrome | metal | finger guard | 4 | 162 | 139 | **21.84** |
| **MG-220** | 2206 | chrome | metal | finger guard | 5 | 212 | Ø | **55.65** |
| **MG-250** | 2509 | chrome | metal | finger guard | 6 | 246 | Ø | **77.70** |

## 3-in-1 econo filter - *Comprising of frame, low density fabric filter and cover guard*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **SF808A** | 8025 | black | ABS | 3-in-1 air outlet | 1 | 85 | 85 | **21.84** |
| **SF809A** | 9225 | black | ABS | 3-in-1 air outlet | 2 | 96 | 96 | **21.84** |
| **SF812A** | 1238 | black | ABS | 3-in-1 air outlet | 3 | 125 | 125 | **32.76** |
| **SF817A** | 1725 | black | ABS | 3-in-1 air outlet | 4 | 177 | 156 | **66.15** |


TRT-10A230V-NO


TRT-10A230V-NC


IGR35F


FF12A230UF


FF12A230UF


FF20A230UE


HWM030


HTM060

**TRT series - Mechanical bimetal thermostats** *(used to control temperatures within enclosures)*

Bimetal thermostats used to control temperatures inside enclosures. Suitable for different applications, available with closed-on-rise (NO) or open-on rise (NC) contact for regulation of heating and ventilation equipment or for switching signalling devices.

- Compact dimensions - *(H) 68 x (W) 29 x (D) 45 mm*
- Enclosure PA66 self-extinguishing to UL 94V-0
- DIN-rail mountable
- IP20 protected screw terminals
- Applied standards EN 60730-1, UL approved UL873 and C22.2

| type | temperature range | contact | description | | price |
|---|---|---|---|---|---|
| **Thermostats** 1 | | | | | |
| **TRT-10A230V-NO** | -10 - +80°C | 1 x NO | DIN-rail mount panel thermostat | *(blue knob)* | **308.70** |
| **TRT-10A230V-NC** | -10 - +80°C | 1 x NC | DIN-rail mount panel thermostat | *(red knob)* | **306.60** |

**IGR series - Mechanical hygrostat**

Mechanical hygrostats automatically regulate humidity inside enclosures, triggering a heater or fan when a preset relative humidity is exceeded. To prevent condensation on electric and electronic components the relative humidity is raised above the dew point.

| | | | | price |
|---|---|---|---|---|
| **IGR35F** | 10 - 90% RH | ch/over | DIN-rail mounting panel hygrostat | **1 396.50** |

**Panel ventilation** 2

**FF series - Complete fan-filter units** *(IP54)*

Compact design, snap-on mounting, integrated sealing gasket preventing dust and water penetration. Ideal for all panel ventilation applications.

- Complete fan with mounting frame, removable filter and metal finger guard
- Screwless mounting *(simply clips into panel cut-out)*
- Plastic parts self extinguishing to UL 94V-0
- Permanent sealing gasket in polyurethane foam
- Shielded self lubricating ball bearing fans
- Filter replaceable from the front removable grill

| type | voltage (V) | power (W) | air flow ($m^3/h$) | noise (dB/A) | description | dimensions ($mm^2$) frame | cutout | price |
|---|---|---|---|---|---|---|---|---|
| **FF08A230UN** | 230 VAC | 10 | 10 | 33 | complete fan filter | 107 | 92 | **846.30** |
| **FF12A230UF** | 230 VAC | 18 | 45 | 49 | complete fan filter | 150 | 124 | **871.50** |
| **FF15A230UF** | 230 VAC | 32 | 230 | 50 | complete fan filter | 250 | 223 | **2 100.00** |
| **FF20A230UE** | 230 VAC | 79 | 460 | 66 | complete fan filter | 325 | 291 | **3 717.00** |
| **Outlet filter grill/frame** *(without fan)* | | | | | | | | |
| **FF08U** | outlet/filter | | separate panel mount ventilation unit | | | 107 | 92 | **227.85** |
| **FF12U** | outlet/filter | | separate panel mount ventilation unit | | | 150 | 124 | **231.00** |
| **FF15U** | outlet/filter | | separate panel mount ventilation unit | | | 250 | 223 | **441.00** |
| **FF20U** | outlet/filter | | separate panel mount ventilation unit | | | 325 | 291 | **722.40** |

**Panel heaters** *(anti-condensation)* 3 *15W - 400W*

For the thermo regulation of electrical cabinets. The heaters consist of a self-extinguishing PTC element in a black anodized aluminium DIN-rail mountable housing.

- Compact dimensions - DIN-rail mounting
- Self-regulating PTC resistance
- Screw terminal connection *(15/30W heaters supplied with 500 mm cable)*
- Voltage range: 110...250 VAC
- Complies with standards: IEC/EN 60335-1 and IEC 60004-1

| type | heating power | current mA | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **HWM015** | 15 W | 65 | DIN-rail mount panel heater | 78 | 28 | 49 | **870.45** |
| **HWM030** | 30 W | 130 | DIN-rail mount panel heater | 108 | 28 | 49 | **870.45** |
| **HTM060** | 60 W | 260 | DIN-rail mount panel heater | 138 | 62 | 85 | **1 218.00** |
| **HTM100** | 100 W | 475 | DIN-rail mount panel heater | 188 | 62 | 85 | **1 564.50** |
| **HTM150** | 150 W | 770 | DIN-rail mount panel heater | 238 | 62 | 85 | **1 774.50** |



Above ZAR prices do not include VAT. E&OE



TP19U230B54

## TP series - Roof mount exhaust fan units 4

Roof exhaust fan units used to directly extract heat from the upper region of the cabinet facilitating effective internal air flow. Equipped with a high-head radial fan.

- Mounting via 8 x Ø4 mm screws *(mounts through 175 mm² cutout)*
- Plastic parts in PC/ABS alloy and aluminium self extinguishing to UL 94V-0
- Permanent sealing gasket in polyurethane foam
- Compact dimensions, height: total 94 mm / hood 62 mm
- Colour: RAL 7035 *(others colours available on request)*

| type | voltage (V) | power (W) | air flow ($m^3/h$) | noise (dB/A) | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **Exhaust Fan** *(roof mount)* | | **IP24** | | | | | | | |
| **TP19U230B** | 230 VAC | 70 | 500 | 68 | roof exhaust fan | 324 | 324 | 94 | **3 507.00** |
| **Exhaust Fan** *(roof mount)* | | **IP54** | | | | | | | |
| **TP19U230B54** | 230 VAC | 70 | 420 | 68 | roof exhaust fan | 324 | 324 | 94 | **4 000.50** |



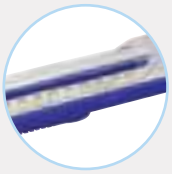


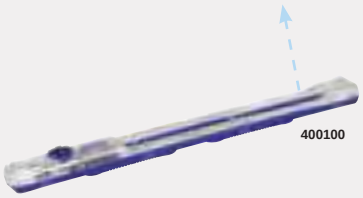
FLL-C3006UITB

## LED Lamp for switchboards 5

During maintenance and inspection on switchboards it is essential for to have a good level of lighting LEDs provides effective illumination within electrical cabinets at significantly low consumption. Switching via a mounted switch or version with a PIR sensor which detects motion within 120° radius with delayed auto off with no detected presence.

| type | power | supply voltage | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **Fandis FLL series - Panel lamps** | | | | | | | |
| Termination is via "push-in" cage clamp terminals on both sides with an incorporated release button. Magnetic fastening for simple positioning on metallic surfaces *(with optional magnet set).* Lamp rotates to six different positions on base *(max. to 40°)* | | | | | | | |
| • LED light output: | | 600 lm *(luminous flux),* 120°, daylight, colour temperature 7100K | | | | | |
| • Operating temp: | | -30 to +60°C | | | | | |
| • Lifetime: | | 160000 h at 25°C | | | | | |
| **FLL-C3006USTB** | 5 Watt | 20...230V AC/DC | LED panel lamp with switch | 32 | 356 | 48 | **1 995.00** |
| **FLL-C3006UITB** | 5 Watt | 20...230V AC/DC | LED lamp with PIR sensor | 32 | 356 | 48 | **1 921.50** |
| **FLL-2MA** | magnet | | magnet mounting kit for lamps *(2 magnets)* | | | | **165.90** |





400100

## Seifert SL 4000 series - Panel lamps

Termination via 2 pin latching plug *(supplied separately)* on both ends of the lamp. Mounting is via supplied mounting clips or incorporated magnets for simple positioning on metallic surfaces.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **400100** | 4 Watt | 24...265V AC/DC | LED panel lamp with switch | 32 | 350 | 28 | **1 585.50** |
| **400000** | 4 Watt | 24...265V AC/DC | LED panel lamp with sensor | 32 | 350 | 33 | **1 890.00** |
| **91.921.3053.0** | white | | female connector plug for panel lamps | 18 | 53 | 14 | **87.15** |
| **91.922.3053.0** | white | | male connector plug for panel lamps | 18 | 53 | 14 | **80.85** |

## Systems & components for enclosures





850600001

## SlimLine Pro - 8500 series - Cabinet cooling units

SlimLine Pro series cabinet cooling air conditioners feature an innovative one man mounting system permitting screwless installation with maintenance free operation due to the eco-friendly filter-less construction. The compact, slim construction combined with modern design features provide excellent size to performance ratio to meet modern day requirements. Providing improved cooling performance ensuring total reliability in all industrial applications.

- Innovative mounting system *(screwless, one man mounting)*
- Simplified panel cutout *(ease mounting even further)*
- Integrated condensate evaporation
- Temperature range 10°C to 60°C
- Standard material powder coated mild steel housing RAL 7035 *(light grey)*
- Compliance to NEMA / UL type 3, 3R, 12, 4 und 4X.
- Can be mounted external or recessed *(with only 35-50 mm protruding)* into the panel

| type | cooling capacity L35L35 | supply voltage | description | dimensions (mm) (H) | (W) | (D) | Ext. | price |
|---|---|---|---|---|---|---|---|---|
| **SlimLine Pro - 8500 series** | | **IP56** | | | | | | |
| **850600001** | 670 W | 230 VAC | panel air conditioner | 600 | 250 | 135 | (25) | **40 215.00** |
| **850800001** | 825 W | 230 VAC | panel air conditioner | 950 | 305 | 210 | (35) | **47 250.00** |
| **851200001** | 1.2 kW | 230 VAC | panel air conditioner | 950 | 305 | 210 | (35) | **49 140.00** |
| **851500001** | 1.5 kW | 230 VAC | panel air conditioner | 1350 | 395 | 210 | (35) | **65 730.00** |
| **852000001** | 2.0 kW | 230 VAC | panel air conditioner | 1350 | 395 | 210 | (35) | **71 820.00** |
| **852500001** | 2.5 kW | 230 VAC | panel air conditioner | 1350 | 395 | 210 | (35) | **77 910.00** |
| **854000001** | 4.0 kW | 230 VAC | panel air conditioner | 1550 | 455 | 270 | (50) | **107 100.00** |



42740001

## SlimLine series - Filterless technology air conditioners

SlimLine series air conditioners provide maximum power-to-size ratio compatible with market standards ensuring simple integration with cabinet systems. Designed to operate with minimum maintenance, due to eco-friendly filter-less construction. Wide-ribbed aluminium condenser provides improved cooling performance ensuring total reliability in all industrial applications.

- Compressor type: Rotary piston compressor
- Mounting: Internal / External

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **42660001** | 320 W | 230 VAC | panel air conditioner | 520 | 270 | 110 | (25) | **33 810.00** |
| **42700001** | 600 W | 230 VAC | panel air conditioner | 810 | 395 | 145 | (25) | **49 350.00** |
| **42710001** | 820 W | 230 VAC | panel air conditioner | 980 | 395 | 145 | (25) | **53 235.00** |
| **42720001** | 1100 W | 230 VAC | panel air conditioner | 1250 | 395 | 145 | (25) | **61 110.00** |
| **42740001** | 1500 W | 230 VAC | panel air conditioner | 1550 | 395 | 145 | (25) | **70 140.00** |

## SlimLine TOP series - Top mounted filterless air conditioners

- Compressor type: Rotary piston compressor

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **45550001** | 1100 W | 230 VAC | roof mount air conditioner | 400 | 600 | 400 | – | **63 840.00** |



43050001

## ComPact series - Economical all-round systems

ComPact series air conditioners optimise high efficiencies with outstanding COP values throughout the range, the built-in controller displays temperature, operating status and can be simply adjusted. Surface treated condenser with high fin separation provide virtually maintenance free service.

- Operating temp. range: 20°C...55°C
- Compressor type: Reciprocating compressor
- Mounting: External mounting
- Colour: RAL 7035 *(other colours available on request)*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **43040001** | 320 W | 230 VAC | panel air conditioner | 500 | 280 | 200 | – | **27 720.00** |
| **43050001** | 550 W | 230 VAC | panel air conditioner | 650 | 315 | 260 | – | **29 820.00** |
| **43100001** | 1000 W | 230 VAC | panel air conditioner | 650 | 315 | 260 | – | **36 750.00** |
| **43150001** | 1500 W | 230 VAC | panel air conditioner | 980 | 395 | 260 | – | **47 145.00** |
| **43200001** | 2000 W | 230 VAC | panel air conditioner | 980 | 395 | 260 | – | **53 550.00** |



TG 3102-24V

## TG series - Thermoelectric cooling units - *for cooling enclosures or electronic components*

Thermoelectric cooling units are an effective solution for the cooling of enclosures. Energy transferred heat without the use of hazardous gases or liquids. Thermoelectric modules *(Peltier modules),* permitting heat absorption from one side *(cold side)* and heat expulsion to the ambient from the other side.

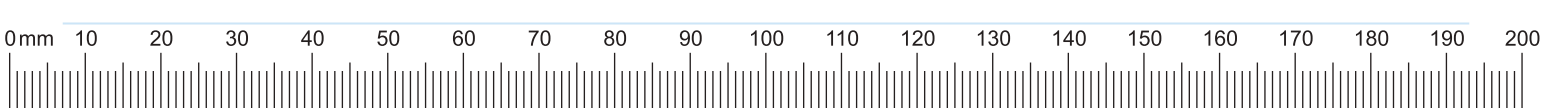
- External or recessed mounting in almost any position *(except roof mounting)*
- Suitable for indor and outdoor application, ingress protection rating of IP66
- Stainless steel AISI 304 (V2A)
- Maintenance free
- Easy installation

| type | voltage (V) | cooling power | rated current | cutout (mm) | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **SoliTherm Peltier - Panel cooling units** | | | | Temperature range: -20°C…+65°C | | | | |
| **TG 3102-24V** | 24 VDC | 100W | 4.8A | 260 x 160 | 304 | 200 | 138 | **23 940.00** |
| **TG 3200-24V** | 24 VDC | 200W | 9.0A | 370 x 155 | 400 | 180 | 171 | **36 435.00** |



Above ZAR prices do not include VAT. E&OE

# Notes


0 mm
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SCAME
VIA COSTA ERTA, 15
24020 PARRE BG ITALY
3P+T-IP44-16A-6h/380-415V~ 50/60Hz MADE IN ITALY




# H

# Plugs & Sockets

Interactive Catalogue



# Plugs & Sockets





Industrial plugs & Sockets

I-1...5



Industrial socket outlets

I-6...7



Surface-mount distribution boards

I-8



Mobile distribution assemblies

I-9



Residential switches & Sockets

I-10



Weatherproof plugs & Sockets

I-11...12



Heavy-duty multi-pole connectors

I-13...15



Photovoltaic (PV) connectors

I-16



Battery storage connectors & Terminals

I-17...20

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2P+E 3P+E 3P+N+E

## Optima series: 16A - 32A - 63A - 125A

- Insulation voltage: 690 VAC
- Standards: IEC 60309-2
- Material: Thermoplastic ***(halogen free)***
- Impact resistance: IK08 *(1.7kg with a striking energy of 2J)*
- Operating temperature: -25...+40°C *(max operating temperature +60°C)*
- Cable inlet: External cable stay with tulip clamping IP67 gland

**Voltage Coding**

| |
|---|
| 100 to 130V* |
| 200 to 250V |
| 380 to 480V |
| 480 to 525V |

* *On request*



213.163...



218.163...



218.1636...



313.324...



318.324...

| type | rated current | (h) pos. | pin configuration | IP protection 44/54 | IP protection 66/7/9 | description | cable outlet | price |
|---|---|---|---|---|---|---|---|---|
| **Male plugs** *(straight cable exit)* | | | **16 - 125A** | | | | | |
| **213.1633** | 16A | 6h | 2P+E *(3pin)* | • | | male ind. plug | straight | **79.80** |
| **213.1636** | 16A | 6h | 3P+E *(4pin)* | • | | male ind. plug | straight | **106.05** |
| **213.1637** | 16A | 6h | 3P+N+E *(5pin)* | • | | male ind. plug | straight | **132.30** |
| **213.3233** | 32A | 6h | 2P+E *(3pin)* | • | | male ind. plug | straight | **151.20** |
| **213.3236** | 32A | 6h | 3P+E *(4pin)* | • | | male ind. plug | straight | **179.55** |
| **213.3237** | 32A | 6h | 3P+N+E *(5pin)* | • | | male ind. plug | straight | **189.00** |
| **213.6333** | 63A | 6h | 2P+E *(3pin)* | • | | male ind. plug | straight | **806.40** |
| **213.6336** | 63A | 6h | 3P+E *(4pin)* | • | | male ind. plug | straight | **682.50** |
| **213.6337** | 63A | 6h | 3P+N+E *(5pin)* | • | | male ind. plug | straight | **718.20** |
| **218.1633** | 16A | 6h | 2P+E *(3pin)* | | • | male ind. plug | straight | **176.40** |
| **218.1636** | 16A | 6h | 3P+E *(4pin)* | | • | male ind. plug | straight | **206.85** |
| **218.16366** | 16A | 7h | 3P+E *(4pin)* | | • | male ind. plug | straight | **280.35** |
| **218.1637** | 16A | 6h | 3P+N+E *(5pin)* | | • | male ind. plug | straight | **234.15** |
| **218.16376** | 16A | 7h | 3P+N+E *(5pin)* | | • | male ind. plug | straight | **333.90** |
| **218.3233** | 32A | 6h | 2P+E *(3pin)* | | • | male ind. plug | straight | **285.60** |
| **218.3236** | 32A | 6h | 3P+E *(4pin)* | | • | male ind. plug | straight | **291.90** |
| **218.32364*** | 32A | 3h | 3P+E *(4pin)* | | • | male ind. plug | straight | **291.90** |
| **218.32366** | 32A | 7h | 3P+E *(4pin)* | | • | male ind. plug | straight | **364.35** |
| **218.3237** | 32A | 6h | 3P+N+E *(5pin)* | | • | male ind. plug | straight | **324.45** |
| **218.32376** | 32A | 7h | 3P+N+E *(5pin)* | | • | male ind. plug | straight | **405.30** |
| **218.6333** | 63A | 6h | 2P+E *(3pin)* | | • | male ind. plug | straight | **896.70** |
| **218.6336** | 63A | 6h | 3P+E *(4pin)* | | • | male ind. plug | straight | **748.65** |
| **218.63366** | 63A | 7h | 3P+E *(4pin)* | | • | male ind. plug | straight | **1 165.50** |
| **218.6337** | 63A | 6h | 3P+N+E *(5pin)* | | • | male ind. plug | straight | **783.30** |
| **218.63376** | 63A | 7h | 3P+N+E *(5pin)* | | • | male ind. plug | straight | **1 239.00** |
| **218.12533** | 125A | 6h | 2P+E *(3pin)* | | • | male ind. plug | straight | **2 142.00** |
| **218.12536** | 125A | 6h | 3P+E *(4pin)* | | • | male ind. plug | straight | **1 858.50** |
| **218.125366** | 125A | 7h | 3P+E *(4pin)* | | • | male ind. plug | straight | **2 782.50** |
| **218.12537** | 125A | 6h | 3P+N+E *(5pin)* | | • | male ind. plug | straight | **1 984.50** |
| **218.125376** | 125A | 7h | 3P+N+E *(5pin)* | | • | male ind. plug | straight | **2 961.00** |
| **Connectors/couplers** *(female in-line socket)* | | | | | | | | |
| **313.1643** | 16A | 6h | 2P+E *(3pin)* | • | | female connector | straight | **140.70** |
| **313.1646** | 16A | 6h | 3P+E *(4pin)* | • | | female connector | straight | **148.05** |
| **313.1647** | 16A | 6h | 3P+N+E *(5pin)* | • | | female connector | straight | **181.65** |
| **313.3243** | 32A | 6h | 2P+E *(3pin)* | • | | female connector | straight | **172.20** |
| **313.3246** | 32A | 6h | 3P+E *(4pin)* | • | | female connector | straight | **210.00** |
| **313.3247** | 32A | 6h | 3P+N+E *(5pin)* | • | | female connector | straight | **232.05** |
| **313.6343** | 63A | 6h | 2P+E *(3pin)* | • | | female connector | straight | **926.10** |
| **313.6346** | 63A | 6h | 3P+E *(4pin)* | • | | female connector | straight | **825.30** |
| **313.6347** | 63A | 6h | 3P+N+E *(5pin)* | • | | female connector | straight | **846.30** |
| **318.1643** | 16A | 6h | 2P+E *(3pin)* | | • | female connector | straight | **247.80** |
| **318.1646** | 16A | 6h | 3P+E *(4pin)* | | • | female connector | straight | **274.05** |
| **318.16466** | 16A | 7h | 3P+E *(4pin)* | | • | female connector | straight | **357.00** |
| **318.1647** | 16A | 6h | 3P+N+E *(5pin)* | | • | female connector | straight | **300.30** |
| **318.16476** | 16A | 7h | 3P+N+E *(5pin)* | | • | female connector | straight | **411.60** |
| **318.3243** | 32A | 6h | 2P+E *(3pin)* | | • | female connector | straight | **344.40** |
| **318.3246** | 32A | 6h | 3P+E *(4pin)* | | • | female connector | straight | **339.15** |
| **318.32464*** | 32A | 3h | 3P+E *(4pin)* | | • | female connector | straight | **357.00** |
| **318.32466** | 32A | 7h | 3P+E *(4pin)* | | • | female connector | straight | **446.25** |
| **318.3247** | 32A | 6h | 3P+N+E *(5pin)* | | • | female connector | straight | **370.65** |
| **318.32476** | 32A | 7h | 3P+N+E *(5pin)* | | • | female connector | straight | **510.30** |
| **318.6343** | 63A | 6h | 2P+E *(3pin)* | | • | female connector | straight | **1 027.95** |
| **318.6346** | 63A | 6h | 3P+E *(4pin)* | | • | female connector | straight | **906.15** |
| **318.63466** | 63A | 7h | 3P+E *(4pin)* | | • | female connector | straight | **1 302.00** |
| **318.6347** | 63A | 6h | 3P+N+E *(5pin)* | | • | female connector | straight | **925.05** |
| **318.63476** | 63A | 7h | 3P+N+E *(5pin)* | | • | female connector | straight | **1 396.50** |

***Continued overleaf....***

* *Refrigerated container (Reefer plugs)*



Above ZAR prices do not include VAT. E&OE




2P+E 3P+E 3P+N+E



243.639...



248.329...



240.639...T



570.90164

| type | rated current | (h) pos. | pin configuration | | IP protection 44/54 | IP protection 66/7/9 | description | flange size | price |
|---|---|---|---|---|---|---|---|---|---|
| ***continued…* Connectors/couplers** *(female in-line socket)* | | | | | | | | | |
| **318.12543** | 125A | 6h | 2P+E | *(3pin)* | | • | female connector | straight | **2 562.00** |
| **318.12546** | 125A | 6h | 3P+E | *(4pin)* | | • | female connector | straight | **2 572.50** |
| **318.125466** | 125A | 7h | 3P+E | *(4pin)* | | • | female connector | straight | **3 664.50** |
| **318.12547** | 125A | 6h | 3P+N+E | *(5pin)* | | • | female connector | straight | **2 751.00** |
| **318.125476** | 125A | 7h | 3P+N+E | (5pin) | | • | female connector | straight | **3 990.00** |
| **Optima series - Appliance inlets** *(male pins - accept female connector)* | | | | | | | | | |
| **Flush mount appliance inlet** | | | | *(straight inlet)* | | | | | |
| **243.1693** | 16A | 6h | 2P+E | *(3pin)* | • | | flush mnt appliance inlet | 75 x 75 | **185.85** |
| **243.1696** | 16A | 6h | 3P+E | *(4pin)* | • | | flush mnt appliance inlet | 75 x 75 | **208.95** |
| **243.1697** | 16A | 6h | 3P+N+E | *(5pin)* | • | | flush mnt appliance inlet | 75 x 75 | **270.90** |
| **243.3293** | 32A | 6h | 2P+E | *(3pin)* | • | | flush mnt appliance inlet | 75 x 75 | **302.40** |
| **243.3296** | 32A | 6h | 3P+E | *(4pin)* | • | | flush mnt appliance inlet | 75 x 75 | **322.35** |
| **243.3297** | 32A | 6h | 3P+N+E | *(5pin)* | • | | flush mnt appliance inlet | 75 x 75 | **330.75** |
| **243.6393** | 63A | 6h | 2P+E | *(3pin)* | • | | flush mnt appliance inlet | 100 x 110 | **903.00** |
| **243.6396** | 63A | 6h | 3P+E | *(4pin)* | • | | flush mnt appliance inlet | 100 x 110 | **964.95** |
| **243.6397** | 63A | 6h | 3P+N+E | *(5pin)* | • | | flush mnt appliance inlet | 100 x 110 | **1 023.75** |
| **248.1693** | 16A | 6h | 2P+E | *(3pin)* | | • | flush mnt appliance inlet | 75 x 75 | **263.55** |
| **248.1696** | 16A | 6h | 3P+E | *(4pin)* | | • | flush mnt appliance inlet | 75 x 75 | **278.25** |
| **248.16966** | 16A | 7h | 3P+E | *(4pin)* | | • | flush mnt appliance inlet | 75 x 75 | **351.75** |
| **248.1697** | 16A | 6h | 3P+N+E | *(5pin)* | | • | flush mnt appliance inlet | 75 x 75 | **351.75** |
| **248.16976** | 16A | 7h | 3P+N+E | *(5pin)* | | • | flush mnt appliance inlet | 75 x 75 | **437.85** |
| **248.3293** | 32A | 6h | 2P+E | *(3pin)* | | • | flush mnt appliance inlet | 75 x 75 | **370.65** |
| **248.3296** | 32A | 6h | 3P+E | *(4pin)* | | • | flush mnt appliance inlet | 75 x 75 | **393.75** |
| **248.32966** | 32A | 7h | 3P+E | *(4pin)* | | • | flush mnt appliance inlet | 75 x 75 | **492.45** |
| **248.3297** | 32A | 6h | 3P+N+E | *(5pin)* | | • | flush mnt appliance inlet | 75 x 75 | **431.55** |
| **248.32976** | 32A | 7h | 3P+N+E | *(5pin)* | | • | flush mnt appliance inlet | 75 x 75 | **541.80** |
| **248.6393** | 63A | 6h | 2P+E | *(3pin)* | | • | flush mnt appliance inlet | 100 x 110 | **592.20** |
| **248.6396** | 63A | 6h | 3P+E | *(4pin)* | | • | flush mnt appliance inlet | 100 x 110 | **633.15** |
| **248.63966** | 63A | 7h | 3P+E | *(4pin)* | | • | flush mnt appliance inlet | 100 x 110 | **1 302.00** |
| **248.6397** | 63A | 6h | 3P+N+E | *(5pin)* | | • | flush mnt appliance inlet | 100 x 110 | **663.60** |
| **248.63976** | 63A | 7h | 3P+N+E | *(5pin)* | | • | flush mnt appliance inlet | 100 x 110 | **1 386.00** |
| **248.12593** | 125A | 6h | 2P+E | *(3pin)* | | • | flush mnt appliance inlet | 114 x 114 | **1 155.00** |
| **248.12596** | 125A | 6h | 3P+E | *(4pin)* | | • | flush mnt appliance inlet | 114 x 114 | **1 249.50** |
| **248.125966** | 125A | 7h | 3P+E | *(4pin)* | | • | flush mnt appliance inlet | 114 x 114 | **2 226.00** |
| **248.12597** | 125A | 6h | 3P+N+E | *(5pin)* | | • | flush mnt appliance inlet | 114 x 114 | **1 375.50** |
| **248.125976** | 125A | 7h | 3P+N+E | *(5pin)* | | • | flush mnt appliance inlet | 114 x 114 | **2 562.00** |
| **Surface mount appliance inlet** | | | | *(angled inlet)* | | | | *cable entry* | |
| **240.1693** | 16A | 6h | 2P+E | *(3pin)* | • | | surf mnt appliance inlet | M25 | **276.15** |
| **240.1696** | 16A | 6h | 3P+E | *(4pin)* | • | | surf mnt appliance inlet | M25 | **303.45** |
| **240.1697** | 16A | 6h | 3P+N+E | *(5pin)* | • | | surf mnt appliance inlet | M25 | **373.80** |
| **240.3293** | 32A | 6h | 2P+E | *(3pin)* | • | | surf mnt appliance inlet | M32 | **409.50** |
| **240.3296** | 32A | 6h | 3P+E | *(4pin)* | • | | surf mnt appliance inlet | M32 | **432.60** |
| **240.3297** | 32A | 6h | 3P+N+E | *(5pin)* | • | | surf mnt appliance inlet | M32 | **441.00** |
| **240.6393T** | 63A | 6h | 2P+E | *(3pin)* | • | | surf mnt appliance inlet | M40 | **1 207.50** |
| **240.6396T** | 63A | 6h | 3P+E | *(4pin)* | • | | surf mnt appliance inlet | M40 | **1 323.00** |
| **240.6397T** | 63A | 6h | 3P+N+E | *(5pin)* | • | | surf mnt appliance inlet | M40 | **1 417.50** |
| **245.1693** | 16A | 6h | 2P+E | *(3pin)* | | • | surf mnt appliance inlet | M25 | **339.15** |
| **245.1696** | 16A | 6h | 3P+E | *(4pin)* | | • | surf mnt appliance inlet | M25 | **354.90** |
| **245.1697** | 16A | 6h | 3P+N+E | *(5pin)* | | • | surf mnt appliance inlet | M25 | **431.55** |
| **245.3293** | 32A | 6h | 2P+E | *(3pin)* | | • | surf mnt appliance inlet | M32 | **450.45** |
| **245.3296** | 32A | 6h | 3P+E | *(4pin)* | | • | surf mnt appliance inlet | M32 | **475.65** |
| **245.3297** | 32A | 6h | 3P+N+E | *(5pin)* | | • | surf mnt appliance inlet | M32 | **515.55** |
| **245.6393T** | 63A | 6h | 2P+E | *(3pin)* | | • | surf mnt appliance inlet | M40 | **1 165.50** |
| **245.6396T** | 63A | 6h | 3P+E | *(4pin)* | | • | surf mnt appliance inlet | M40 | **1 281.00** |
| **245.6397T** | 63A | 6h | 3P+N+E | *(5pin)* | | • | surf mnt appliance inlet | M40 | **1 375.50** |
| **245.12597T** | 125A | 6h | 3P+N+E | *(5pin)* | | • | surf mnt appliance inlet | M63 | **3 255.00** |
| **Protection caps for plugs and appliance inlets IP66 / IP67 / IP69** | | | | | | | | | |
| **570.90163** | 16A | – | 2P+E | | | • | covers for plugs and inlets | | **54.60** |
| **570.90164** | 16A | – | 3P+E | | | • | covers for plugs and inlets | | **59.85** |
| **570.90165** | 16A | – | 3P+N+E | | | • | covers for plugs and inlets | | **66.15** |
| **570.90324** | 32A | – | 2/3P+E | | | • | covers for plugs and inlets | | **73.50** |
| **570.90325** | 32A | – | 3P+N+E | | | • | covers for plugs and inlets | | **78.75** |
| **570.9063** | 63A | – | all configurations | | | • | covers for plugs and inlets | | **48.30** |
| **570.9125** | 125A | – | all configurations | | | • | covers for plugs and inlets | | **118.65** |




2P+E 3P+E 3P+N+E

## Optima series: Panel mount sockets 16A - 32A - 63A - 125A

- Insulation voltage: 690 VAC
- Operating temperature: -25...+40°C *(max operating temperature +60°C)*
- Material: Thermoplastic ***(halogen free)*** / Impact resistance IK08



413.166...



418.636...



570.M0125



423.166...



428.166...

| type | rated current | (h) pos. | pin configuration | IP protection 44/54 | IP protection 67/8/9 | description | flange size | price |
|---|---|---|---|---|---|---|---|---|
| **Flush mount angled socket outlet** *(18°)* | | | | 16A - 125A | | Standards: *IEC 60309-2* | | |
| **413.1663** | 16A | 6h | 2P+E *(3pin)* | • | | angled socket | 70 x 87 | **132.30** |
| **413.1666** | 16A | 6h | 3P+E *(4pin)* | • | | angled socket | 70 x 87 | **140.70** |
| **413.1667** | 16A | 6h | 3P+N+E *(5pin)* | • | | angled socket | 70 x 87 | **154.35** |
| **413.3263** | 32A | 6h | 2P+E *(3pin)* | • | | angled socket | 84 x 106 | **176.40** |
| **413.3266** | 32A | 6h | 3P+E *(4pin)* | • | | angled socket | 84 x 106 | **184.80** |
| **413.3267** | 32A | 6h | 3P+N+E *(5pin)* | • | | angled socket | 84 x 106 | **194.25** |
| **413.6363** | 63A | 6h | 2P+E *(3pin)* | • | | angled socket | 100 x 110 | **851.55** |
| **413.6366** | 63A | 6h | 3P+E *(4pin)* | • | | angled socket | 100 x 110 | **877.80** |
| **413.6367** | 63A | 6h | 3P+N+E *(5pin)* | • | | angled socket | 100 x 110 | **951.30** |
| **418.1663** | 16A | 6h | 2P+E *(3pin)* | | • | angled socket | 70 x 87 | **202.65** |
| **418.1666** | 16A | 6h | 3P+E *(4pin)* | | • | angled socket | 70 x 87 | **220.50** |
| **418.16666** | 16A | 7h | 3P+E *(4pin)* | | • | angled socket | 70 x 87 | **373.80** |
| **418.1667** | 16A | 6h | 3P+N+E *(5pin)* | | • | angled socket | 70 x 87 | **250.95** |
| **418.16676** | 16A | 7h | 3P+N+E *(5pin)* | | • | angled socket | 70 x 87 | **456.75** |
| **418.3263** | 32A | 6h | 2P+E *(3pin)* | | • | angled socket | 84 x 106 | **317.10** |
| **418.3266** | 32A | 6h | 3P+E *(4pin)* | | • | angled socket | 84 x 106 | **322.35** |
| **418.32664*** | 32A | 3h | 3P+E *(4pin)* | | • | angled socket | 84 x 106 | **422.10** |
| **418.32666** | 32A | 7h | 3P+E *(4pin)* | | • | angled socket | 84 x 106 | **526.05** |
| **418.3267** | 32A | 6h | 3P+N+E *(5pin)* | | • | angled socket | 84 x 106 | **370.65** |
| **418.32676** | 32A | 7h | 3P+N+E *(5pin)* | | • | angled socket | 84 x 106 | **575.40** |
| **418.6363** | 63A | 6h | 2P+E *(3pin)* | | • | angled socket | 100 x 110 | **918.75** |
| **418.6366** | 63A | 6h | 3P+E *(4pin)* | | • | angled socket | 100 x 110 | **947.10** |
| **418.63666** | 63A | 7h | 3P+E *(4pin)* | | • | angled socket | 100 x 110 | **1 186.50** |
| **418.6367** | 63A | 6h | 3P+N+E *(5pin)* | | • | angled socket | 100 x 110 | **1 011.15** |
| **418.63676** | 63A | 7h | 3P+N+E *(5pin)* | | • | angled socket | 100 x 110 | **1 291.50** |
| **418.12563** | 125A | 6h | 2P+E *(3pin)* | | • | angled socket | 114 x 114 | **2 593.50** |
| **418.12566** | 125A | 6h | 3P+E *(4pin)* | | • | angled socket | 114 x 114 | **2 194.50** |
| **418.125666** | 125A | 7h | 3P+E *(4pin)* | | • | angled socket | 114 x 114 | **3 244.50** |
| **418.12567** | 125A | 6h | 3P+N+E *(5pin)* | | • | angled socket | 114 x 114 | **2 247.00** |
| **418.125676** | 125A | 7h | 3P+N+E *(5pin)* | | • | angled socket | 114 x 114 | **3 612.00** |
| **Micro-switch** - *for plug inserted indication of above angled outlet sockets only* | | | | | | | | |
| **654.0391** | 16/32A | | 1x NO | | | micro-switch for above angled sockets | – | **160.65** |
| **654.0392** | 16/32A | | 1x NC | | | micro-switch for above angled sockets | – | **160.65** |
| **654.0393** | 63/125A | | 1x NO | | | micro-switch for above angled sockets | – | **233.10** |
| **654.0394** | 63/125A | | 1x NC | | | micro-switch for above angled sockets | – | **233.10** |
| **Housings to surface mount** *(above)* **angled sockets** | | | | | | | | |
| **570.0116** | 16A | | angled housing | | • | for p/mnt sockets | 70 x 87 | **112.35** |
| **570.0016** | 16A | | straight housing | | • | for p/mnt sockets | 70 x 87 | **112.35** |
| **570.0132** | 32A | | angled housing | | • | for p/mnt sockets | 84 x 106 | **154.35** |
| **570.0032** | 32A | | straight housing | | • | for p/mnt sockets | 84 x 106 | **151.20** |
| **570.M0163** | 63A | | angled housing | | • | for p/mnt sockets | 100 x 110 | **727.65** |
| **570.M0125** | 125A | | angled housing | | • | for p/mnt sockets | 114 x 114 | **1 123.50** |
| **Flush mount straight socket outlet** | | | | 16A - 125A | | Standards: *IEC 60309-2* | | |
| **423.1663** | 16A | 6h | 2P+E *(3pin)* | • | | straight socket | 75 x 75 | **128.10** |
| **423.1663/R** | 16A | 6h | 2P+E *(3pin)* | • | | straight socket | 62 x 62 | **171.15** |
| **423.1666** | 16A | 6h | 3P+E *(4pin)* | • | | straight socket | 75 x 75 | **144.90** |
| **423.1666/R** | 16A | 6h | 3P+E *(4pin)* | • | | straight socket | 62 x 62 | **185.85** |
| **423.1667** | 16A | 6h | 3P+N+E *(5pin)* | • | | straight socket | 75 x 75 | **148.05** |
| **423.3263** | 32A | 6h | 2P+E *(3pin)* | • | | straight socket | 75 x 75 | **302.40** |
| **423.3266** | 32A | 6h | 3P+E *(4pin)* | • | | straight socket | 75 x 75 | **308.70** |
| **423.3267** | 32A | 6h | 3P+N+E *(5pin)* | • | | straight socket | 75 x 75 | **359.10** |
| **423.6363** | 63A | 6h | 2P+E *(3pin)* | • | | straight socket | 100 x 110 | **851.55** |
| **423.6366** | 63A | 6h | 3P+E *(4pin)* | • | | straight socket | 100 x 110 | **877.80** |
| **423.6367** | 63A | 6h | 3P+N+E *(5pin)* | • | | straight socket | 100 x 110 | **951.30** |
| **428.1663** | 16A | 6h | 2P+E *(3pin)* | | • | straight socket | 75 x 75 | **269.85** |
| **428.1666** | 16A | 6h | 3P+E *(4pin)* | | • | straight socket | 75 x 75 | **299.25** |
| **428.1667** | 16A | 6h | 3P+N+E *(5pin)* | | • | straight socket | 75 x 75 | **365.40** |
| **428.3263** | 32A | 6h | 2P+E *(3pin)* | | • | straight socket | 75 x 75 | **420.00** |
| **428.3266** | 32A | 6h | 3P+E *(4pin)* | | • | straight socket | 75 x 75 | **422.10** |
| **428.32664*** | 32A | 3h | 3P+E *(4pin)* | | • | straight socket | 75 x 75 | **422.10** |
| **428.3267** | 32A | 6h | 3P+N+E *(5pin)* | | • | straight socket | 75 x 75 | **459.90** |

***Continued overleaf....***

* *Refrigerated container (Reefer plugs)*



Above ZAR prices do not include VAT. E&OE




2P+E 3P+E 3P+N+E



428.636...



513.325...



518.635...T



518.325...TS

| type | rated current | (h) pos. | pin configuration | | IP protection 44/54 | IP protection 67/8/9 | description | flange size | price |
|---|---|---|---|---|---|---|---|---|---|
| ***continued...* Flush mount socket outlet - straight** | | | | | | | | | |
| **428.6363** | 63A | 6h | 2P+E | *(3pin)* | | • | straight socket | 100 x 110 | **918.75** |
| **428.6366** | 63A | 6h | 3P+E | *(4pin)* | | • | straight socket | 100 x 110 | **947.10** |
| **428.6367** | 63A | 6h | 3P+N+E | *(5pin)* | | • | straight socket | 100 x 110 | **966.00** |
| **428.12563** | 125A | 6h | 2P+E | *(3pin)* | | • | straight socket | 114 x 114 | **2 593.50** |
| **428.12566** | 125A | 6h | 3P+E | *(4pin)* | | • | straight socket | 114 x 114 | **2 593.50** |
| **428.12567** | 125A | 6h | 3P+N+E | *(5pin)* | | • | straight socket | 114 x 114 | **2 887.50** |

**OPTIMA series - Surface-mount socket outlets**

- Insulation voltage: 690 VAC
- Operating temperature: -25...+40°C *(max operating temperature +60°C)*
- Material: Thermoplastic ***(halogen free)***
- Impact resistance: IK08 *(1.7kg with a striking energy of 2J)*

| type | rated current | (h) pos. | pin configuration | | IP protection 44/54 | IP protection 67/8/9 | description | cable entry | price |
|---|---|---|---|---|---|---|---|---|---|
| **BASE version - IP44 compact, economical, slimline socket outlets** | | | | | | | | *(angled)* | |
| **513.1653** | 16A | 6h | 2P+E | *(3pin)* | • | | surface mnt socket | M20/25 | **195.30** |
| **513.1656** | 16A | 6h | 3P+E | *(4pin)* | • | | surface mnt socket | M20/25 | **229.95** |
| **513.1657** | 16A | 6h | 3P+N+E | *(5pin)* | • | | surface mnt socket | M20/25 | **235.20** |
| **513.3253** | 32A | 6h | 2P+E | *(3pin)* | • | | surface mnt socket | M32 | **298.20** |
| **513.3256** | 32A | 6h | 3P+E | *(4pin)* | • | | surface mnt socket | M32 | **302.40** |
| **513.3257** | 32A | 6h | 3P+N+E | *(5pin)* | • | | surface mnt socket | M32 | **369.60** |
| **TOP version - IP44 and IP67** | | | | | | | | *(angled)* | |
| • Compact, flexible, safe - removable socket section for ease of wiring<br>• Reversable base *(1 or 2 cable outlets top or bottom entry)* | | | | | | | | | |
| **513.1653T** | 16A | 6h | 2P+E | *(3pin)* | • | | surface mnt socket | M20/25 | **252.00** |
| **513.1656T** | 16A | 6h | 3P+E | *(4pin)* | • | | surface mnt socket | M20/25 | **298.20** |
| **513.1657T** | 16A | 6h | 3P+N+E | *(5pin)* | • | | surface mnt socket | M20/25 | **304.50** |
| **513.3253T** | 32A | 6h | 2P+E | *(3pin)* | • | | surface mnt socket | M32 | **385.35** |
| **513.3256T** | 32A | 6h | 3P+E | *(4pin)* | • | | surface mnt socket | M32 | **392.70** |
| **513.3257T** | 32A | 6h | 3P+N+E | *(5pin)* | • | | surface mnt socket | M32 | **478.80** |
| **513.6353T** | 63A | 6h | 2P+E | *(3pin)* | • | | surface mnt socket | M40 | **1 386.00** |
| **513.6356T** | 63A | 6h | 3P+E | *(4pin)* | • | | surface mnt socket | M40 | **1 407.00** |
| **513.6357T** | 63A | 6h | 3P+E | *(4pin)* | • | | surface mnt socket | M40 | **1 459.50** |
| **518.1653T** | 16A | 6h | 2P+E | *(3pin)* | | • | surface mnt socket | M20/25 | **446.25** |
| **518.1656T** | 16A | 6h | 3P+E | *(4pin)* | | • | surface mnt socket | M20/25 | **478.80** |
| **518.1657T** | 16A | 6h | 3P+N+E | *(5pin)* | | • | surface mnt socket | M20/25 | **557.55** |
| **518.3253T** | 32A | 6h | 2P+E | *(3pin)* | | • | surface mnt socket | M32 | **676.20** |
| **518.3256T** | 32A | 6h | 3P+E | *(4pin)* | | • | surface mnt socket | M32 | **664.65** |
| **518.32564T*** | 32A | 3h | 3P+E | *(4pin)* | | • | surface mnt socket | M32 | **664.65** |
| **518.3257T** | 32A | 6h | 3P+N+E | *(5pin)* | | • | surface mnt socket | M32 | **717.15** |
| **518.6353T** | 63A | 6h | 2P+E | *(3pin)* | | • | surface mnt socket | M40 | **1 491.00** |
| **518.6356T** | 63A | 6h | 3P+E | *(4pin)* | | • | surface mnt socket | M40 | **1 512.00** |
| **518.6357T** | 63A | 6h | 3P+N+E | *(5pin)* | | • | surface mnt socket | M40 | **1 575.00** |
| **518.12553T** | 125A | 6h | 2P+E | *(3pin)* | | • | surface mnt socket | M63 | **3 066.00** |
| **518.12556T** | 125A | 6h | 3P+E | *(4pin)* | | • | surface mnt socket | M63 | **3 318.00** |
| **518.12557T** | 125A | 6h | 3P+N+E | *(5pin)* | | • | surface mnt socket | M63 | **3 475.50** |
| **Surface mount switch sockets** *(not mechanical interlocked)* | | | | | | | | | |
| **513.1653TS** | 16A | 6h | 2P+E | *(3pin)* | • | | surface mnt socket | M25 | **558.60** |
| **513.1656TS** | 16A | 6h | 3P+E | *(4pin)* | • | | surface mnt socket | M25 | **589.05** |
| **513.1657TS** | 16A | 6h | 3P+N+E | *(5pin)* | • | | surface mnt socket | M25 | **606.90** |
| **513.3253TS** | 32A | 6h | 2P+E | *(3pin)* | • | | surface mnt socket | M32 | **748.65** |
| **513.3256TS** | 32A | 6h | 3P+E | *(4pin)* | • | | surface mnt socket | M32 | **781.20** |
| **513.3257TS** | 32A | 6h | 3P+N+E | *(5pin)* | • | | surface mnt socket | M32 | **815.85** |
| **518.1653TS** | 16A | 6h | 2P+E | *(3pin)* | | • | surface mnt socket | M25 | **748.65** |
| **518.1656TS** | 16A | 6h | 3P+E | *(4pin)* | | • | surface mnt socket | M25 | **781.20** |
| **518.1657TS** | 16A | 6h | 3P+N+E | *(5pin)* | | • | surface mnt socket | M25 | **815.85** |
| **518.3253TS** | 32A | 6h | 2P+E | *(3pin)* | | • | surface mnt socket | M32 | **837.90** |
| **518.3256TS** | 32A | 6h | 3P+E | *(4pin)* | | • | surface mnt socket | M32 | **871.50** |
| **518.3257TS** | 32A | 6h | 3P+N+E | *(5pin)* | | • | surface mnt socket | M32 | **906.15** |

* *Refrigerated container (Reefer plugs)*




2P+E 3P+E 3P+N+E

## Eureka series 16A/32A - 90° inlets

- Insulation voltage: 690 VAC
- Protection degree: IP44 and IP67
- Operating temperature: -25...+40°C *(max operating temperature +60°C)*
- Material: Thermoplastic
- Impact resistance: IK07 *(0.5kg with a striking energy of 2J)*
- Standards: IEC 6039-1 / EN 60309-3



221.163...

| type | rated current | (h) pos. | pin configuration | IP protection 44/54 | IP protection 66/7/9 | description | flange size | price |
|---|---|---|---|---|---|---|---|---|
| **Male plugs** *(90° cable inlet)* | | | *16A - 32A* | | | | | |
| **221.1633** | 16A | 6h | 2P+E *(3pin)* | • | | 90° ind male plug | sleeve | **189.00** |
| **221.1636** | 16A | 6h | 3P+E *(4pin)* | • | | 90° ind male plug | sleeve | **210.00** |
| **221.1637** | 16A | 6h | 3P+N+E *(5pin)* | • | | 90° ind male plug | sleeve | **244.65** |
| **221.3233** | 32A | 6h | 2P+E *(3pin)* | • | | 90° ind male plug | sleeve | **296.10** |
| **221.3236** | 32A | 6h | 3P+E *(4pin)* | • | | 90° ind male plug | sleeve | **315.00** |
| **221.3237** | 32A | 6h | 3P+N+E *(5pin)* | • | | 90° ind male plug | sleeve | **384.30** |
| **226.1633** | 16A | 6h | 2P+E *(3pin)* | | • | 90° ind male plug | gland | **241.50** |
| **226.1636** | 16A | 6h | 3P+E *(4pin)* | | • | 90° ind male plug | gland | **259.35** |
| **226.1637** | 16A | 6h | 3P+N+E *(5pin)* | | • | 90° ind male plug | gland | **298.20** |
| **226.3233** | 32A | 6h | 2P+E *(3pin)* | | • | 90° ind male plug | gland | **333.90** |
| **226.3236** | 32A | 6h | P+E *(4pin)* | | • | 90° ind male plug | gland | **349.65** |
| **226.3237** | 32A | 6h | 3P+N+E *(5pin)* | | • | 90° ind male plug | gland | **428.40** |



247.169...

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Appliance inlets** *(90° inlet)* | | | *16A - 32A* | | | | | |
| **242.1693** | 16A | 6h | 2P+E *(3pin)* | • | | 90° appliance inlet | 70 x 87 | **195.30** |
| **242.1696** | 16A | 6h | 3P+E *(4pin)* | • | | 90° appliance inlet | 70 x 87 | **219.45** |
| **242.1697** | 16A | 6h | 3P+N+E *(5pin)* | • | | 90° appliance inlet | 70 x 87 | **294.00** |
| **242.3293** | 32A | 6h | 2P+E *(3pin)* | • | | 90° appliance inlet | 70 x 87 | **332.85** |
| **242.3296** | 32A | 6h | 3P+E *(4pin)* | • | | 90° appliance inlet | 70 x 87 | **354.90** |
| **242.3297** | 32A | 6h | 3P+N+E *(5pin)* | • | | 90° appliance inlet | 70 x 87 | **365.40** |
| **247.1693** | 16A | 6h | 2P+E *(3pin)* | | • | 90° appliance inlet | 70 x 87 | **301.35** |
| **247.1696** | 16A | 6h | 3P+E *(4pin)* | | • | 90° appliance inlet | 70 x 87 | **316.05** |
| **247.1697** | 16A | 6h | 3P+N+E *(5pin)* | | • | 90° appliance inlet | 70 x 87 | **395.85** |
| **247.3293** | 32A | 6h | 2P+E *(3pin)* | | • | 90° appliance inlet | 70 x 87 | **418.95** |
| **247.3296** | 32A | 6h | 3P+E *(4pin)* | | • | 90° appliance inlet | 70 x 87 | **447.30** |
| **247.3297** | 32A | 6h | 3P+N+E *(5pin)* | | • | 90° appliance inlet | 70 x 87 | **494.55** |



452.166...

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Sockets** *(90° outlet)* | | | *16A - 32A* | | | | | |
| **452.1663** | 16A | 6h | 2P+E *(3pin)* | • | | 90° female socket | 70 x 87 | **242.55** |
| **452.1666** | 16A | 6h | 3P+E *(4pin)* | • | | 90° female socket | 70 x 87 | **263.55** |
| **452.1667** | 16A | 6h | 3P+N+E *(5pin)* | • | | 90° female socket | 70 x 87 | **365.40** |
| **452.3263** | 32A | 6h | 2P+E *(3pin)* | • | | 90° female socket | 70 x 87 | **433.65** |
| **452.3266** | 32A | 6h | 3P+E *(4pin)* | • | | 90° female socket | 70 x 87 | **444.15** |
| **452.3267** | 32A | 6h | 3P+N+E *(5pin)* | • | | 90° female socket | 70 x 87 | **612.15** |
| **457.1663** | 16A | 6h | 2P+E *(3pin)* | | • | 90° female socket | 70 x 87 | **402.15** |
| **457.1666** | 16A | 6h | 3P+E *(4pin)* | | • | 90° female socket | 70 x 87 | **443.10** |
| **457.1667** | 16A | 6h | 3P+N+E *(5pin)* | | • | 90° female socket | 70 x 87 | **548.10** |
| **457.3263** | 32A | 6h | 2P+E *(3pin)* | | • | 90° female socket | 70 x 87 | **622.65** |
| **457.3266** | 32A | 6h | 3P+E *(4pin)* | | • | 90° female socket | 70 x 87 | **625.80** |
| **457.3267** | 32A | 6h | 3P+N+E *(5pin)* | | • | 90° female socket | 70 x 87 | **770.70** |

## Container plugs and sockets *32A*

Resistance is a fundamental requirement in a harsh and exhausting environment like a terminal container where sun, humidity, saltiness and temperature changes put a strain on any product.

Scame offers a full range of plugs and socket outlets in 3h configuration for the supply of refrigerated containers: OPTIMA series plugs and sockets, flush or surface mounting interlocked socket in OMNIA series, ADVANCE2 series of interlocked socket outlets in thermoplastic material to offer maximum resistance to shocks and atmospheric and chemical agents.

- Refrigeration container *(Reefer plugs and sockets)*
- Earth pin *(3h)* position
- IP rating: IP67




218.32364

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **218.32364** | 32A | 3h | 3P+E *(4pin)* | | • | container straight male plug | | **291.90** |
| **318.32464** | 32A | 3h | 3P+E *(4pin)* | | • | container straight connector | | **357.00** |
| **428.32664** | 32A | 3h | 3P+E *(4pin)* | | • | p/mnt straight socket | 75 x 75 | **422.10** |
| **418.32664** | 32A | 3h | 3P+E *(4pin)* | | • | p/mnt angled socket | 84 x 106 | **422.10** |
| **518.32564T** | 32A | 3h | 3P+E *(4pin)* | | • | TOP surface mnt socket outlet | | **664.65** |
| **505.32864** | 32A | 3h | 3P+E *(4pin)* | | • | Omnia surf switch/socket outlet | | **1 627.50** |
| **561.32864** | 32A | 3h | 3P+E *(4pin)* | | • | Advance surf switch/socket outlet | | **1 816.50** |



Above ZAR prices do not include VAT. E&OE



2P+E



3P+E



3P+N+E

## Industrial switched sockets *(interlocked)* — IEC 60309-1/-2

- Protection degree: IP44 and IP67 *(non ageing elastomer seals)*
- Operating temp: -25...+40°C *(max operating temperature +60°C)*
- Material: Thermoplastic (RAL 7035)
- Mechanical interlock: Only operates with plug inserted - cannot be removed with switch “ON”


500.168...


505.328...


561.328...


561.328...

| type | rated current | (h) pos. | pin configuration | IP protection 44/54 | IP protection 67/8/9 | description | price |
|---|---|---|---|---|---|---|---|
| **OMNIA series - Switched sockets** | | | | *(I-O)* | *(interlocked)* | | |
| • Surface mounting: | | | *(flush mountable with surface box removed)* | | | | |
| • Impact resistance: | | | IK08 *(1.7kg with a striking energy of 2J)* | | | | |
| **OMNIA Series 16A - 32A** | | | | | | *(H)125 x (W)136 x (D)85 mm* | |
| **500.1683** | 16A | 6h | 2P+E *(3pin)* | • | | surface switch socket outlet | **920.85** |
| **500.1686** | 16A | 6h | 3P+E *(4pin)* | • | | surface switch socket outlet | **999.60** |
| **500.1687** | 16A | 6h | 3P+N+E *(5pin)* | • | | surface switch socket outlet | **1 092.00** |
| **500.3283** | 32A | 6h | 2P+E *(3pin)* | • | | surface switch socket outlet | **1 102.50** |
| **500.3286** | 32A | 6h | 3P+E *(4pin)* | • | | surface switch socket outlet | **1 207.50** |
| **500.3287** | 32A | 6h | 3P+N+E *(5pin)* | • | | surface switch socket outlet | **1 344.00** |
| **505.1683** | 16A | 6h | 2P+E *(3pin)* | | • | surface switch socket outlet | **1 165.50** |
| **505.1686** | 16A | 6h | 3P+E *(4pin)* | | • | surface switch socket outlet | **1 281.00** |
| **505.1687** | 16A | 6h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **1 375.50** |
| **505.3283** | 32A | 6h | 2P+E *(3pin)* | | • | surface switch socket outlet | **1 522.50** |
| **505.3286** | 32A | 6h | 3P+E *(4pin)* | | • | surface switch socket outlet | **1 627.50** |
| **505.32864*** | 32A | 3h | 3P+E *(4pin)* | | • | surface switch socket outlet | **1 627.50** |
| **505.3287** | 32A | 6h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **1 785.00** |
| **OMNIA Series 63A** *(rectangular shape)* | | | | | | *(H)275 x (W)136 x (D)186 mm* | |
| **505.6383** | 63A | 6h | 2P+E *(3pin)* | | • | surface switch socket outlet | **2 761.50** |
| **505.6386** | 63A | 6h | 3P+E *(4pin)* | | • | surface switch socket outlet | **2 992.50** |
| **505.6387** | 63A | 6h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **3 307.50** |
| **Accessories for above Omnia series switched sockets** | | | | | | | |
| **572.0310** | base | | surface base housing for 125 x 136 mm 16/32A switch sockets | | | | **118.65** |
| **654.0120** | blank | | plain blank cover for above surface box **5720310** | | | | **163.80** |
| **572.0120** | 6 way | | 6 module consumer insert and cover for box **5720310** | | | | **573.30** |
| **409.0428** | cover | | IP56 Omnia cover accepts Evolution domestic sockets | | | | **1 375.50** |
| **572.0200** | wall box | | flush mounting wall box for Omnia 16/32A switch socket outlets | | | | **208.95** |
| **572.0220** | frame | | flush frame *(IP55)* for above flush mounting box **5720200** | | | | **94.50** |
| **Advance 2 series - Industrial switch sockets** | | | | *(I-O)* | *(interlocked)* | | |
| • Impact resistance | | | IK07 *(500g with a striking energy of 2J)* | | | | |
| **16A/32A - compact version** | | | | | | *(H)240 x (W)106 x (D)129 mm* | |
| **560.1683** | 16A | 6h | 2P+E *(3pin)* | • | | surface switch socket outlet | **786.45** |
| **560.1686** | 16A | 6h | 3P+E *(4pin)* | • | | surface switch socket outlet | **866.25** |
| **560.1687** | 16A | 6h | 3P+N+E *(5pin)* | • | | surface switch socket outlet | **852.60** |
| **560.3283** | 32A | 6h | 2P+E *(3pin)* | • | | surface switch socket outlet | **920.85** |
| **560.3286** | 32A | 6h | 3P+E *(4pin)* | • | | surface switch socket outlet | **1 005.90** |
| **560.3287** | 32A | 6h | 3P+N+E *(5pin)* | • | | surface switch socket outlet | **938.70** |
| **561.1683** | 16A | 6h | 2P+E *(3pin)* | | • | surface switch socket outlet | **1 281.00** |
| **561.1686** | 16A | 6h | 3P+E *(4pin)* | | • | surface switch socket outlet | **1 407.00** |
| **561.16866** | 16A | 7h | 3P+E *(4pin)* | | • | surface switch socket outlet | **1 753.50** |
| **561.1687** | 16A | 6h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **1 627.50** |
| **561.16876** | 16A | 7h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **2 026.50** |
| **561.3283** | 32A | 6h | 2P+E *(3pin)* | | • | surface switch socket outlet | **1 627.50** |
| **561.3286** | 32A | 6h | 3P+E *(4pin)* | | • | surface switch socket outlet | **1 816.50** |
| **561.32864*** | 32A | 3h | 3P+E *(4pin)* | | • | surface switch socket outlet | **1 816.50** |
| **561.32866** | 32A | 7h | 3P+E *(4pin)* | | • | surface switch socket outlet | **2 268.00** |
| **561.3287** | 32A | 6h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **1 995.00** |
| **561.32876** | 32A | 7h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **2 488.50** |
| **63A - large version** | | | | | | *(H)390 x (W)136 x (D)166-207 mm* | |
| **561.6383** | 63A | 6h | 2P+E *(3pin)* | | • | surface switch socket outlet | **3 706.50** |
| **561.6386** | 63A | 6h | 3P+E *(4pin)* | | • | surface switch socket outlet | **3 990.00** |
| **561.63866** | 63A | 7h | 3P+E *(4pin)* | | • | surface switch socket outlet | **4 998.00** |
| **561.6387** | 63A | 6h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **4 420.50** |
| **561.63876** | 63A | 7h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **5 523.00** |
| **125A - large version** | | | | | | *(H)460 x (W)212 x (D)217 mm* | |
| **548.12586** | 125A | 6h | 3P+E *(4pin)* | | • | surface switch socket outlet | **15 330.00** |
| **548.12587** | 125A | 6h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **16 905.00** |

* *Refrigerated container (Reefer plugs)*




2P+E 3P+E 3P+N+E



568.168...



LED indication



503.638...



590.FEM6303

| type | rated current | (h) pos. | pin configuration | IP protection 44/54 | IP protection 67/8/9 | description | price |
|---|---|---|---|---|---|---|---|
| **Advance2 - Switch socket outlet** | | | | | | | |
| ADVANCE2 is a complete range of industrial interlocked sockets available from 16 up to 125A making it ideal for applications in purely industrial environments. • DIN rail facility for 6 x modular devices - MCB's, earth leakage, contactors • With interlocked switch and 6 way distribution board | | | | | | | |
| **16/32A - switched socket** | | | | | | *(H)410 x (W)136 x (D)163 mm* | |
| **568.1683** | 16A | 6h | 2P+E *(3pin)* | | • | surface switch socket outlet | **2 068.50** |
| **568.1686** | 16A | 6h | 3P+E *(4pin)* | | • | surface switch socket outlet | **2 215.50** |
| **568.1687** | 16A | 6h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **2 331.00** |
| | | | | | | *(H)420 x (W)136 x (D)176 mm* | |
| **568.3283** | 32A | 6h | 2P+E *(3pin)* | | • | surface switch socket outlet | **2 551.50** |
| **568.3286** | 32A | 6h | 3P+E *(4pin)* | | • | surface switch socket outlet | **2 698.50** |
| **568.3287** | 32A | 6h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **2 929.50** |
| **63A - switched socket** | | | | | | *(H)438 x (W)X136 (D)182 mm* | |
| **568.6383** | 63A | 6h | 2P+E *(3pin)* | | • | surface switch socket outlet | **5 071.50** |
| **568.6386** | 63A | 6h | 3P+E *(4pin)* | | • | surface switch socket outlet | **5 460.00** |
| **568.6387** | 63A | 6h | 3P+N+E *(5pin)* | | • | surface switch socket outlet | **5 911.50** |
| **Advance-GRP** *"extra heavy duty"* **interlocked switch socket outlet 16 - 125A** *(O-II)* | | | | | | | |
| Advance-GRP(Ex) series surface mounting interlocked socket outlets are designed to guarantee excellent mechanical resistance to impacts and chemical agents, even under extreme atmospheric and temperature conditions. • Material: Thermosetting ***(halogen free)*** RAL 7037 • Self-extinguishing: GW test: 960°C - UL94 V0 • Impact resistance: IK10 *(5kg with a striking energy of 20J)* • Ex classification: Atex code Ex II 2D • LED indication: Correct supply and all phases present | | | | | | | |
| **16A/32A - extra heavy-duty** | | | | | | (H)260 x (W)130 x (D)170-185 mm | |
| **503.1683** | 16A | 6h | 2P+E *(3pin)* | | • | heavy duty switch socket outlet | **4 672.50** |
| **503.1686** | 16A | 6h | 3P+E *(4pin)* | | • | heavy duty switch socket outlet | **5 071.50** |
| **503.1687** | 16A | 6h | 3P+N+E *(5pin)* | | • | heavy duty switch socket outlet | **5 512.50** |
| **503.3283** | 32A | 6h | 2P+E *(3pin)* | | • | heavy duty switch socket outlet | **7 350.00** |
| **503.3286** | 32A | 6h | 3P+E *(4pin)* | | • | heavy duty switch socket outlet | **7 969.50** |
| **503.3287** | 32A | 6h | 3P+N+E *(5pin)* | | • | heavy duty switch socket outlet | **8 778.00** |
| **63A - extra heavy-duty** | | | | | | (H)380 x (W)170 x (D)225 mm | |
| **503.6386** | 63A | 6h | 3P+E *(4pin)* | | • | heavy duty switch socket outlet | **11 445.00** |
| **503.6387** | 63A | 6h | 3P+N+E *(5pin)* | | • | heavy duty switch socket outlet | **12 705.00** |
| **125A - extra heavy-duty** | | | | | | (H)575 x (W)280 x (D)253 mm | |
| **503.12586-01** | 125A | 6h | 3P+E *(4pin)* | | • | heavy duty switch socket outlet | **25 410.00** |
| **503.12587-01** | 125A | 6h | 3P+N+E *(5pin)* | | • | heavy duty switch socket outlet | **28 350.00** |
| **FR series - Enclosed switch disconnectors "Fire rated"** **IP65** | | | | | | | |
| FR series is a range of fire rated switch disconnectors able to resist at a temperature of 400°C for a period of 120 minutes ensuring the operation of the smoke extraction systems as required by the EN 12101-3 Standard *(2015)*. • Protection degree: IP65 • Operating ambient temp: -25...+ 60°C • Colour: RAL 3020 • Impact resistance: IK08 *(20A...160A)* • Material: Continuos-Casting- Aluminium Alloy • Locking mechanism: Padlockable handle in two positions *(ON or OFF)* • Conformity of standards: - BS EN 12101-3 *(smoke and heat control system)* - EN 60947-3 *(Low voltage switchgear and controlgear)* - EN 60529 *(Degrees of protection provided by enclosure)* **General application:** • Basement parking • Emergency evacuation exit | | | | | | | |

| type | AC-21A ≤ 690V | AC-23A ≤ 415V | poles | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **590.FEM2003** | 20A | 9 kW | 3 | enclosed isolator switch | 192 | 168 | 80 | **4 620.00** |
| **590.FEM3203** | 32A | 15 kW | 3 | enclosed isolator switch | 192 | 168 | 80 | **6 436.50** |
| **590.FEM6303** | 63A | 35 kW | 3 | enclosed isolator switch | 253 | 217 | 93 | **10 815.00** |

*Larger sizes (up to 630A) available on request*



Above ZAR prices do not include VAT. E&OE



672.2012.1102



672.4032.1102



672.4316



672.1200



654.0420



654.0410

## Domino series - Distribution boards

- Protection degree: IP66
- Max. operating temperature: 60°C
- Material: Thermoplastic (RAL 7035)
- Standards: EN 62208 / EN 60670-24 / EN 61439-3
- Impact resistance: IK07 *(500g with a striking energy of 2J)*

### Domino series - Distribution boards

- Reversible hinged door *(hinged from left or right side)*
- Adjustable DIN rail depth *(can accept rail mounted MCCBs)*
- Knock-outs on all sides *(can be coupled to other enclosures using coupler glands)*
- Facility to accept earth and neutral terminals

| type | no. DIN modules | | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **672.2002** | 2 | | IP66 consumer unit / distribution board | 135 | 76 | 102 | **321.30** |
| **672.2004** | 4 | | IP66 consumer unit / distribution board | 190 | 112 | 106 | **426.30** |
| **672.2008** | 8 | | IP66 consumer unit / distribution board | 190 | 184 | 106 | **583.80** |
| **672.2012.1102** | 12 | *(1 x 12)* | IP66 consumer unit / distribution board | 250 | 256 | 140 | **878.85** |
| **672.4024.1102** | 24 | *(2 x 12)* | IP66 consumer unit / distribution board | 400 | 256 | 140 | **1 470.00** |
| **672.2016.1102** | 16 | *(1 x 16)* | IP66 consumer unit / distribution board | 250 | 328 | 140 | **1 228.50** |
| **672.4032.1102** | 32 | *(2 x 16)* | IP66 consumer unit / distribution board | 400 | 328 | 140 | **1 858.50** |
| **672.5048.1102** | 48 | *(3 x 16)* | IP66 consumer unit / distribution board | 550 | 328 | 140 | **2 341.50** |

**.1102** *(supplied with mounted earth and neutral terminals)*

**Boards with additional blank component section** *(for mounting non modular devices)*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **672.3100** | 12 | *(1 x 12)* | with blank section (H) 150 x (D) 115 mm | 400 | 256 | 140 | **1 092.00** |
| **672.4116** | 16 | *(1 x 16)* | with blank section (H) 150 x (D) 115 mm | 400 | 328 | 140 | **1 134.00** |
| **672.5116** | 16 | *(1 x 16)* | with blank section (H) 300 x (D) 115 mm | 550 | 328 | 140 | **1 575.00** |

### Boards with section to accommodate industrial sockets

| type | no. DIN modules | | sockets No. | flange size (mm) | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **672.2300** | 8 | *(1 x 8)* | board + 2 x 16A sockets | 70 x 87 | 340 | 184 | 106 | **1 249.50** |
| **672.3300*** | 12 | *(1 x 12)* | board + 2 x 16A sockets | 70 x 87 | 400 | 256 | 140 | **1 627.50** |
| **672.3302** | 12 | *(1 x 12)* | board + 1 x 63A sockets | 100 x 110 | 400 | 256 | 140 | **1 627.50** |
| **672.4316*** | 16 | *(1 x 16)* | board + 3 x 16A sockets | 70 x 87 | 400 | 328 | 140 | **2 152.50** |
| **672.5616*** | 16 | *(1 x 16)* | board + 6 x 16A sockets | 70 x 87 | 550 | 328 | 140 | **2 866.50** |

**To accommodate Omnia interlocked switch sockets**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **672.3200** | 12 | *(1 x 12)* | board + 1 x 16/32A sw/socket | 136 x 125 | 400 | 256 | 140 | **1 627.50** |
| **672.4216** | 16 | *(1 x 16)* | board + 2 x 16/32A sw/socket | 136 x 125 | 400 | 328 | 140 | **2 215.50** |
| **672.5316** | 16 | *(1 x 16)* | 2 x 16/32A + 1 x 63A sw/socket | 136 x 125 | 550 | 328 | 140 | **2 950.50** |
| **672.5416** | 16 | *(1 x 16)* | board + 4 x 16/32A sw/socket | 136 x 125 | 550 | 328 | 140 | **2 971.50** |

### Empty enclosures for Domino series boards

| type | for boards | | | flange | (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **672.1101** | 12 way | enclosure | with blank cover | – | 150 | 256 | 115 | **434.70** |
| **672.1301*** | 12 way | enclosure | 2 x 16A sockets | 70 x 87 | 150 | 256 | 115 | **463.05** |

* *With suitable adaption, can accommodate 32A socket (84 x 106 mm flange)*

- Enclosures can be attached to boards *(or one another)* using coupler glands *(below)*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **672.1100** | 16 way | enclosure | with blank cover | – | 150 | 328 | 115 | **573.30** |
| **672.1300*** | 16 way | enclosure | 3 x 16A sockets | 70 x 87 | 150 | 328 | 115 | **573.30** |
| **672.1200** | 16 way | enclosure | 2 x 16/32A sw/socket | 136 x 125 | 150 | 328 | 115 | **604.80** |

### Accessories for Domino boards

| | | | | | |
|---|---|---|---|---|---|
| **654.0365** | 4 way | 5 way insulated terminal block for boards | | *(IP20)* | **98.70** |
| **654.0363** | 8 way | 10 way insulated terminal block for boards | | *(IP20)* | **106.05** |
| **654.0362** | 16 - 32 | 10 way insulated terminal block for boards | | *(IP20)* | **113.40** |
| **654.0360** | 12 - 48 way | additional 10 way insulated terminal block | | *(IP20)* | **89.25** |
| **654.0358** | DIN rail mountable insulated terminal block | | vertical | 5 x 10 + 5 x 16 mm² | **183.75** |
| **654.0359** | DIN rail mountable insulated terminal block | | horizontal | 5 x 10 + 5 x 16 mm² | **183.75** |
| **654.0400** | 4 module | blanking strip for boards | | *(sectionable ½ and 1 module)* | **18.27** |
| **654.0410** | 1 module | rail mount dummy module | | *(assists heat dissipation)* | **53.55** |
| **654.0420** | ½ module | rail mount dummy module | | *(assists heat dissipation)* | **54.60** |
| **654.0751** | 12 module | DIN rail kit | | – | **91.35** |

**Coupler glands IP66** *(to join two enclosures together)*

| | | | |
|---|---|---|---|
| **805.3335** | coupler gland PG21 for joining 12/24 way enclosures together | *(ea)* | **23.94** |
| **805.3337** | coupler gland PG36 for joining 16/32 way enclosures together | *(ea)* | **58.80** |






(Excluding sockets & MCBs)

MBOX3



(Excluding sockets & MCBs)

MBOX5

**MBOX series - Distribution assemblies** (EN 60670-1 / EN 61439-3 / EN 61439-4)

MBOX panels are made of engineering resin with high mechanical sturdiness suitable for outdoor installations with high impact resistance and excellent dimensional stability at high temperatures.

Numerous combinations of sockets ensure reliability to meet common installation requirements for construction sites, equipped areas, camping sites, harbours and outdoor areas in general.

- Incorporated fold-out carrying handle
- Wall, trestle, turret or pole mountable *(with additional accessories)*
- Incorporated emergency disconnect pushbutton RAL 7035
- Incorporated distribution board to accommodate modular devices MCBs, earth leakages

| type | no. DIN modules | | mountable accessories to be ordered separately | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **MBOX series - Distribution assemblies** | | | **IP66** | | | | |
| **MBOX2 distribution assemblies** *(no front door)* | | | | | | | |
| • Supplied with 16 mm² 5-pole terminal box | | | | | | | |
| **656.0924-000** | 16 (2 x 8) | 4 x16/32A | Omnia industrial switch sockets | 365 | 332 | 290 | **11 130.00** |
| **656.0926-000** | 16 (2 x 8) | 6 x16/32A | Optima industrial socket outlets | 365 | 332 | 290 | **11 130.00** |
| **MBOX3 distribution assemblies** *(supplied with door for socket compartment)* | | | | | | | |
| • Supplied with door for socket compartment | | | | | | | |
| • Incorporates extremely low consumption LED light connected to a daylight sensor *(for improved visibility at night or in areas with poor light)* | | | | | | | |
| **657.0936-000** | 39 (3 x 13) | 6 x16/32A | Omnia industrial switch sockets | 520 | 465 | 380 | **16 590.00** |
| **657.0938-000** | 39 (3 x 13) | 9 x16/32A | Optima industrial socket outlets | 520 | 465 | 380 | **16 590.00** |
| **MBOX5 distribution assemblies** *(supplied with door for socket compartment)* | | | | | | | |
| • Supplied with door for socket compartment | | | | | | | |
| • Internal frame to accept 4 x Omnia switch sockets with facilities to mount an additional 8 surface | | | | | | | |
| • Supplied with incoming terminal blocks *(5 x 16 mm² + 5 x 35 mm²)* | | | | | | | |
| • Incorporates extremely low consumption LED light connected to a daylight sensor *(for improved visibility at night or in areas with poor light)* | | | | | | | |
| **658.0950-000** | 52 (4 x 13) | 12 x16/32A | Omnia industrial switch sockets | 670 | 775 | 400 | **23 520.00** |

| **Accessories for MBOX distribution assemblies** | | | for enclosure | |
|---|---|---|---|---|
| **654.0051** | cable support kit *(to wind feeder cable on rear of enclosure)* | | MBOX2 | **170.10** |
| **654.0024** | wall | mounting bracket for enclosures | MBOX2/3/5 | **198.45** |
| **655.46090** | pole | mounting bracket for enclosures | MBOX2 | **2 530.50** |
| **655.32090** | pole | mounting bracket for enclosures | MBOX3/5 | **2 341.50** |
| **657.0121** | trestle | metal support trestle for enclosures | MBOX3/5 | **9 250.50** |

## Characteristic of **MBOX2**

01 Compartment for sockets and protection

02 Can be equipped with OMNIA / OPTIMA sockets

03 Enclosure in shockproof and self extinguishing material

04 Possibility of emergency button

05 16 way (2 x 8) consumer unit

06 Protection window/door

07 Integrated tilting handle




(Excluding sockets & MCBs)

MBOX2



Above ZAR prices do not include VAT. E&OE


136.5121-303


136.5122-303


136.5123-303


136.5123-414


101.6303.G


101.6414.G


137.5012


137.5022

## Unibox series - Surface mounting IP55

- Housing: Thermoplastic (RAL 7035) *(grey)*
- Impact resistance: IK06 *(500g with a striking energy of 1J)*
- Max. temperature: +60°C
- Standards: EN 60670-1

| type | amps | poles | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **Unibox series - Surface mounting** | | | **IP55** | | | | |
| **1 gang surface mount switches** | | | | | | | |
| **136.5121-303** | 16A | 1P | 1-way surface mount switch | 82 | 68 | 66 | **193.20** |
| **136.5121-302** | 20A | 2P | 1-way surface mount switch | 82 | 68 | 66 | **296.10** |
| **136.5121-323** | 16A | 1P | 2-way surface mount switch | 82 | 68 | 66 | **217.35** |
| **136.5121-333** | 16A | 1P | bell-push *(momentary action)* | 82 | 68 | 66 | **217.35** |
| **2 gang surface mount switches** | | | | | | | |
| **136.5122-303** | 16A | 2P | 2 x 1-pole surface mount switch | 82 | 68 | 66 | **297.15** |
| **136.5122-414** | 15A | 2P+E | 2-pole + earth socket only | 82 | 68 | 66 | **364.35** |
| **3 gang surface mount switches** | | | | | | | |
| **136.5123-303** | 16A | 3P | 3 x 1-pole surface mount switch | 82 | 98 | 66 | **403.20** |
| **Surface mount switch socket** | | | | | | | |
| **136.5123-414** | 15A | 2P+E | switch socket outlet | 82 | 98 | 66 | **416.85** |
| **Accessories for Unibox series** | | | | | | | |
| **136.5121** | 1 gang | | surface mount empty housing only *(IP55)* | 82 | 68 | 66 | **128.10** |
| **136.5122** | 2 gang | | surface mount empty housing only *(IP55)* | 82 | 68 | 66 | **128.10** |
| **136.5123** | 3 gang | | surface mount empty housing only *(IP55)* | 82 | 98 | 66 | **194.25** |
| **136.001** | – | | external mount brackets for surface boxes | | | *(10 pcs)* | **28.98** |
| **570.5052*** | 2 gang | | panel mount housing for switches or sockets | 82 | 68 | – | **175.35** |
| **570.6001*** | 2 gang | | panel mnt housing *(IP66 with plug inserted)* | 107 | 84 | – | **276.15** |
| **136.5023** | 3 gang | | flush mnt housing for switches or sockets | 82 | 98 | – | **211.05** |
| **875.4303** | 3 gang | | wall box for flush mount empty housing | 82 | 98 | – | **15.75** |

* *Fits into housing for industrial sockets with 70 x 87 mm flange*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Evolution series - Switches and sockets for above boxes** | | | | | | | |
| **101.6303.G** | 16 A | 1-pole | on/off switch for housings | | | *(1 module)* | **70.35** |
| **101.6311.G** | 16 A | 2-pole | changeover switch (I-O-II) | | | *(1 module)* | **126.00** |
| **101.6403.G** | 16A | 2P+E | Italian socket for housings | | | *(1 module)* | **72.45** |
| **101.6414.G** | 15A | 2P+E | SA socket for housings | | | *(2 module)* | **191.10** |
| **101.6407.G** | 16A | 2P+E | German socket for housings | | | *(2 module)* | **147.00** |
| **DIN rail mount support for Evolution switches and sockets** | | | | | | | |
| **654.0091** | support | | rail mnt support for above switches/sockets | | | *(1 module)* | **22.68** |
| **654.0092** | support | | rail mnt support for above switches/sockets | | | *(2 module)* | **27.72** |

## Protecta series - Switches and sockets IP66

- Housing: Thermoplastic *(halogen free)* RAL 7035 *(grey)*
- Mounting: Surface mount *(can be flush mounted)*
- Max temperature: +60°C
- Glow wire test: 850°C / IKO7

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **1 gang surface mount switches** | | | | | | | |
| **137.5012** | 20A | 1P | surface mount switch | 95 | 95 | – | **387.45** |
| **137.5462** | 20A | 2P | surface mount switch | 95 | 95 | – | **488.25** |
| **137.5212** | 20A | 1P | 2 way surface mnt switch | 95 | 95 | – | **475.65** |
| **137.5311P** | 10A | 1P | bell-push*(momentary action)* | 95 | 95 | – | **345.45** |
| **2 gang surface mount switches** | | | | | | | |
| **137.5022** | 20A | 2P | surface mount switch | 95 | 95 | – | **538.65** |
| **Accessories for above Protecta switches** | | | | | | | |
| **137.101** | surface | | surface mount back box for above switches | 95 | 95 | – | **72.45** |
| **137.141** | pole | | pole mount back box for above switches | 95 | 95 | – | **181.65** |
| **137.002** | cover | | IP66 cover accepts 2 x evolution *(modules)* | – | – | – | **280.35** |
| **137.121** | flush | | flush mount frame kit for above switches | 95 | 95 | – | **91.35** |
| **137.123** | flush | | flush mount frame kit for above sockets | 115 | 115 | – | **113.40** |



46.031.4553.1



46.032.4553.1



96.031.4253.1



96.051.5053.1



96.052.5053.1



96.031.4554.3



96.032.4554.3



97.051.4053.1

Z5.567.5653.0

RST connectors are an ideal solution to providing pluggable connections to products able to withstand severe conditions, the connectors easily replace conventional cable glands providing a flexible, pluggable solution.

- Rapid mounting through ease of handling
- UV-resistant *(Polymide - **Halogen free**)*
- Cross-sections up to 6 mm²
- Protection degree: IP65, IP66, IP67, IP68, IP69K
- Colour: Black

| type | current (A) | No. poles | for cable (Ø mm) | wire (mm²) | description | panel hole Ø | price |
|---|---|---|---|---|---|---|---|
| **RST MINI Twistlock technology** 250V | | | | | | | |
| **RST 16i3** 16A 3-pole | | | | | | | |
| **46.031.4553.1** | 16A | 3-pole | 5 - 9.5 | .25 - 2.5 | in-line female connector | – | **180.60** |
| **46.032.4553.1** | 16A | 3-pole | 5 - 9.5 | .25 - 2.5 | in-line male connector | – | **180.60** |
| **46.031.5053.1** | 16A | 3-pole | – | .25 - 2.5 | panel mnt female connector | M16 | **159.60** |
| **46.032.5053.1** | 16A | 3-pole | – | .25 - 2.5 | panel mount male connector | M16 | **159.60** |
| **46.030.1253.1** | 16A | 3-pole | – | – | 1in / 2out distribution block | – | **410.55** |
| **06.563.8953.1** | 16A | 3-pole | protection cover for above 3-pole male connectors | | | – | **48.30** |
| **06.563.8753.1** | 16A | 3-pole | protection cover for above 3-pole female connectors | | | – | **48.30** |
| **RST 16i5** 16A 5-pole | | | | | | | |
| **46.051.4553.1** | 16A | 5-pole | 5 - 9.5 | .25 - 2.5 | in-line female connector | – | **311.85** |
| **46.052.4553.1** | 16A | 5-pole | 5 - 9.5 | .25 - 2.5 | in-line male connector | – | **311.85** |
| **46.051.5053.1** | 16A | 5-pole | – | .25 - 2.5 | panel mnt female connector | M20 | **261.45** |
| **46.052.5053.1** | 16A | 5-pole | – | .25 - 2.5 | panel mount male connector | M20 | **261.45** |
| **46.050.1253.1** | 16A | 5-pole | – | – | 1in / 2out distribution block | – | **537.60** |
| **06.562.5853.1** | 16A | 3/5-pole | mounting base for above 3/5-pole distribution blocks | | | – | **55.65** |
| **06.563.9353.1** | 16A | 5-pole | protection cover for above 5-pole male connectors | | | – | **51.45** |
| **06.563.9153.1** | 16A | 5-pole | protection cover for above 5-pole female connectors | | | – | **51.45** |
| **RST 20i3** **20A** **3-pole** 250V | | | | | | | |
| **96.031.4053.1** | 20A | 3-pole | 6 - 10 | .75 - 6.0 | in-line female connector | – | **195.30** |
| **96.031.4153.1** | 20A | 3-pole | 10 - 14 | .75 - 6.0 | in-line female connector | – | **220.50** |
| **96.032.4053.1** | 20A | 3-pole | 6 - 10 | .75 - 6.0 | in-line male connector | – | **220.50** |
| **96.032.4153.1** | 20A | 3-pole | 10 - 14 | .75 - 6.0 | in-line male connector | – | **220.50** |
| **96.031.5053.1** | 20A | 3-pole | – | .75 - 6.0 | panel mnt female connector | M25 | **164.85** |
| **96.032.5053.1** | 20A | 3-pole | – | .75 - 6.0 | panel mount male connector | M25 | **185.85** |
| **RST 20i5** 20A 5-pole | | | | | | | |
| **96.051.4153.1** | 20A | 5-pole | 10 - 14 | .75 - 4.0 | in-line female connector | – | **323.40** |
| **96.052.4153.1** | 20A | 5-pole | 10 - 14 | .75 - 4.0 | in-line male connector | – | **363.30** |
| **96.051.4353.1** | 20A | 5-pole | 10 - 14 | .75 - 1.5 | female splitter connector | – | **756.00** |
| **96.051.5053.1** | 20A | 5-pole | – | .75 - 4.0 | panel mnt female connector | M25 | **307.65** |
| **96.052.5053.1** | 20A | 5-pole | – | .75 - 4.0 | panel mount male connector | M25 | **307.65** |
| **96.031.4253.1** | 20A | 3/5-pole | 6 - 10 | .75 - 2.5 | female splitter connector | – | **491.40** |
| **96.031.4353.1** | 20A | 3/5-pole | 10 - 14 | .75 - 2.5 | female splitter connector | – | **491.40** |
| **01.006.1553.1** | 20A | 3/5-pole | mounting plate for 20A 3/5-pole splitter connectors | | | – | **115.50** |
| **RST 25i3** **32A** *(using 6 mm² cable)* *PV applications* | | | | | | | |
| **96.031.4554.3** | 32A | 3-pole | 10 - 14 | .75 - 6.0 | in-line female connector | – | **269.85** |
| **96.032.4554.3** | 32A | 3-pole | 10 - 14 | .75 - 6.0 | in-line male connector | – | **269.85** |
| **96.031.5054.3** | 32A | 3-pole | – | .75 - 6.0 | panel mnt female connector | M25 | **183.75** |
| **96.032.5054.3** | 32A | 3-pole | – | .75 - 6.0 | panel mount male connector | M25 | **183.75** |
| **RST 50i5** **50A** **5-pole** *power series* | | | | | | | |
| **97.051.4053.1** | 50A | 5-pole | 15 - 25 | 4.0 - 16.0 | in-line female connector | M32 | **1 186.50** |
| **97.052.4053.1** | 50A | 5-pole | 15 - 25 | 4.0 - 16.0 | in-line male connector | M32 | **1 186.50** |
| **97.051.5553.1** | 50A | 5-pole | – | 4.0 - 16.0 | panel mnt female connector | M32 | **946.05** |
| **97.052.5553.1** | 50A | 5-pole | – | 4.0 - 16.0 | panel mount male connector | M32 | **946.05** |
| **Accessories for RST20/25/50 connectors** | | | | | | | |
| **05.564.8653.1** | 20/32A | – | manual disconnect tool *(easy release button)* | | | – | **16.70** |
| **05.568.8853.1** | 20/32A | – | spacer ring *(manually actuated)* for M25 connectors | | | M25 | **21.84** |
| **99.416.6205.2** | 20/32A | 3-pole | protection cover for 20/32A 3-pole female connector | | | – | **119.70** |
| **99.414.6205.2** | 20/32A | 3-pole | protection cover for 20/32A 3-pole male connector | | | – | **119.70** |
| **99.532.0000.7** | 20/32A | 5-pole | protection cover for 20/32A 5-pole female connector | | | – | **148.05** |
| **99.530.0000.7** | 20/32A | 5-pole | protection cover for 20/32A 5-pole male connector | | | – | **148.05** |
| **Z5.567.5653.0** | 50A | cover | protection cover for 50A male or female connectors | | | – | **373.80** |



Above ZAR prices do not include VAT. E&OE


91.931.3053.0


91.932.3053.0


91.931.9053.0


91.932.9053.0


92.931.3053.1


92.932.3053.1


91.030.4953.0


92.030.4853.1


73.300.0353.0


73.310.0353.0


76.320.0729.0


76.321.0753.0


76.352.0736.1

## GST series - Multipole connectors

Rated voltage: 250V Rated current: 16A
Protection degree: IP20 Colour: White *(black available on request)*

- Quick, easy and reliable connection technology with Integrated locking device

| type | current (A) | No. poles | for cable (Ø mm) | wire (mm²) | description | panel hole Ø | price |
|---|---|---|---|---|---|---|---|
| **GST 15i3 (Gesis mini) connectors** | | | **16A/250V** | | | | |
| **In-line connectors** *(with strain relief)* | | | *screw connection* | | | | |
| **91.921.3053.0** | 16A | 2 pole | 5.5 - 8.5 | 0.5 - 1.5 | female in-line connector | | **87.15** |
| **91.922.3053.0** | 16A | 2 pole | 5.5 - 8.5 | 0.5 - 1.5 | male in-line connector | | **80.85** |
| **91.931.3053.0** | 16A | 3-pole | 5.5 - 8.5 | 0.5 - 1.5 | female in-line connector | | **121.80** |
| **91.932.3053.0** | 16A | 3-pole | 5.5 - 8.5 | 0.5 - 1.5 | male in-line connector | | **113.40** |
| **91.931.9053.0** | 16A | 3-pole | – | 0.5 - 1.5 | flush female p/mnt connector | | **76.65** |
| **91.931.9153.0** | 16A | 3-pole | – | 0.5 - 1.6 | protruding female p/mnt conn. | | **76.65** |
| **91.932.9053.0** | 16A | 3-pole | – | 0.5 - 1.5 | flush male p/mnt connector | | **68.25** |
| **91.932.9153.0** | 16A | 3-pole | – | 0.5 - 1.6 | protruding male p/mnt conn. | | **68.25** |
| **GST 18i3 (Gesis) connectors** | | | **16A/250V** | | | | |
| **In-line connectors** *(with strain relief)* | | | *screw connection* | | | | |
| **92.931.3053.0** | 16A | 3-pole | 6.5 - 10.5 | 0.75 - 2.5 | female in-line connector | | **106.05** |
| **92.932.3053.0** | 16A | 3-pole | 6.5 - 10.5 | 0.75 - 2.5 | male in-line connector | | **91.35** |
| **Panel mounting** *(snap-in)spring-loaded screwless connection* | | | | | | | |
| **92.031.9658.0** | 16A | 3-pole | – | 0.75 - 2.5 | female panel mount connector | | **70.35** |
| **92.032.9658.0** | 16A | 3-pole | – | 0.75 - 2.5 | male panel mount connector | | **65.10** |
| **Accessories for GST connectors** | | | | | | | |
| **91.030.6053.0** | 16A | 3-pole | | | 1 in / 2 out distribution unit for GST15i connectors | | **330.75** |
| **91.030.4953.0** | 16A | 3-pole | | | 1 in / 3 out distribution unit for GST15i connectors | | **376.95** |
| **91.030.5853.0** | 16A | 3-pole | | | U-type intermediate coupling for GST 15i connectors | | **324.45** |
| **91.030.5953.0** | 16A | 3-pole | | | in-line intermediate coupling for GST 15i connectors | | **166.95** |
| **92.030.4853.0** | 16A | 3-pole | | | 1 in / 3 out distribution unit for GST18i connectors | | **186.90** |
| **92.030.5958.0** | 16A | 3-pole | | | in-line intermediate coupling for GST 18i connectors | | **90.30** |
| **05.587.3156.0** | lock | – | | | locking device for in-line connectors | | **24.47** |
| **05.561.3653.0** | cover | – | | | protection cover for GST18i female connectors | | **34.13** |

## Revos MINI - industrial multipole connectors

Protection degree: IP65 *(when used with appropriate cable gland)*

| type | current (A) | No. poles | rated voltage | connect type | cable inlet | description | price |
|---|---|---|---|---|---|---|---|
| • Set is made up with - contact inserts *(male and female)* - base - hood | | | | | | | |
| **Revos MINI** | | | **10A/400V** | | | | |
| **Contact inserts** | | | *Screw connection - (cables 0.5 - 2.5 mm²)* | | | | |
| **73.310.0353.0** | 10A | 3p + ⏚ | 400 V | screw | – | male insert - screw terminal | **191.10** |
| **73.310.0453.0** | 10A | 4p + ⏚ | 400 V | screw | – | male insert - screw terminal | **236.25** |
| **73.300.0353.0** | 10A | 3p + ⏚ | 400 V | screw | – | female insert - screw terminal | **187.95** |
| **73.300.0453.0** | 10A | 4p + ⏚ | 400 V | screw | – | female insert - screw terminal | **264.60** |
| **Crimp connection -** *(crimp contacts to be ordered separately)* | | | | | | | |
| **73.710.0753.0** | 10A | 7p + ⏚ | 250 V | crimp | – | male insert - for crimp pins | **80.85** |
| **73.710.0853.0** | 10A | 8 pole | 50 V | crimp | – | male insert - for crimp pins | **81.90** |
| **05.544.1029.0** | 10A | – | 250 V | crimp | .75 - 1.5 mm² | male crimp contact pins | **12.92** |
| **73.700.0753.0** | 10A | 7p + ⏚ | 250 V | crimp | – | female insert - for crimp pins | **76.65** |
| **73.700.0853.0** | 10A | 8 pole | 50 V | crimp | – | female insert - for crimp pins | **77.70** |
| **02.124.1029.0** | 10A | – | 250 V | crimp | .75 - 1.5 mm² | female crimp contact pins | **13.55** |
| **Bases** | | | *with locking lever for hood connection* | | | | |
| **76.320.0729.0** | metal | 3/4/7/8 | | open | straight | base for contact inserts | **170.10** |
| **76.321.0729.0** | metal | 3/4/7/8 | | open | 90° | angled base for cont. inserts | **266.70** |
| **76.320.0753.0** | plastic | 3/4/7/8 | | open | straight | base for contact inserts | **117.60** |
| **76.321.0753.0** | plastic | 3/4/7/8 | | open | 90° | angled base for cont. inserts | **233.10** |
| **Hoods** | | | *with threaded collar to accept M20 cable glands* | | | | |
| **76.352.0736.1** | metal | 3/4/7/8 | | M20 | straight | hood for contact inserts | **162.75** |
| **76.350.0736.1** | metal | 3/4/7/8 | | M20 | 90° | angled hood for cont. inserts | **265.65** |
| **76.352.0760.1** | plastic | 3/4/7/8 | | M20 | straight | hood for contact inserts | **118.65** |
| **76.350.0760.1** | plastic | 3/4/7/8 | | M20 | 90° | angled hood for cont. inserts | **135.45** |



## Revos BASIC - Industrial multipole connectors

Heavy duty connectors for use in tough environment conditions. Used in the automotive industry, packaging, instrumentation, control and automation equipment.

They permit simple, time-saving installation of machinery and equipment, providing effective protection against mechanical impact, water and dust entry.

- Rated voltage: 690V
- Rated current: 10/16A
- Protection degree: *Supplied without gland (IP65 when used with appropriate cable gland)*

Scan to watch video



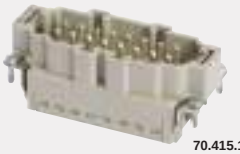
70.300.1040.0



70.415.0653.0



70.405.0653.0



70.415.1653.0



70.405.1653.0



73.810.2453.0



73.810.0853.0

| type | current (A) | No. poles | rated voltage | connect type | cable inlet | size | description | price |
|---|---|---|---|---|---|---|---|---|
| **Contact inserts** | Fit into all revos bases and hoods to make up a complete connector. | | | | | | | |
| **Revos** BASIC | Standard contact inserts with screw termination - 6/10/16/24/32/48 pole + earth | | | | | | | |
| • Connector set is made up with - contact inserts *(male and female)* - base - hood | | | | | | | | |
| Screw terminal *(with wire protection)* | | | *(for cables 0.5 - 2.5 mm²)* | | | | | |
| **70.310.0640.0** | 16A | 6p+ ⏚ | 690V | screw | – | **6** | male insert - screw term. | **187.95** |
| **70.310.1040.0** | 16A | 10p+ ⏚ | 690V | screw | – | **10** | male insert - screw term. | **223.65** |
| **70.310.1640.0** | 16A | 16p+ ⏚ | 690V | screw | – | **16** | male insert - screw term. | **289.80** |
| **70.310.2440.0** | 16A | 24p+ ⏚ | 690V | screw | – | **24** | male insert - screw term. | **361.20** |
| **70.310.3253.0** | 16A | 32p+ ⏚ | 690V | screw | – | **32** | male insert - screw term. | **649.95** |
| **70.310.4840.0** | 16A | 48p+ ⏚ | 690V | screw | – | **48** | male insert - screw term. | **743.40** |
| **70.300.0640.0** | 16A | 6p+ ⏚ | 690V | screw | – | **6** | female insert - screw term. | **191.10** |
| **70.300.1040.0** | 16A | 10p+ ⏚ | 690V | screw | – | **10** | female insert - screw term. | **226.80** |
| **70.300.1640.0** | 16A | 16p+ ⏚ | 690V | screw | – | **16** | female insert - screw term. | **294.00** |
| **70.300.2440.0** | 16A | 24p+ ⏚ | 690V | screw | – | **24** | female insert - screw term. | **366.45** |
| **70.300.3253.0** | 16A | 32p+ ⏚ | 690V | screw | – | **32** | female insert - screw term. | **658.35** |
| **70.300.4840.0** | 16A | 48p+ ⏚ | 690V | screw | – | **48** | female insert - screw term. | **750.75** |
| **Push-in termination contact inserts** | | | | | | | | |
| New push-in technology allows flexible conductors with ferrules to be simply and quickly connected without the use of tools. Simply push-in the wire conductor for a high contact quality, reliable, gas-tight, vibration proof connection. | | | | | | | | |
| • Extremely quick connection time - *(cables are simply withdrawn by pressing a release button)* | | | | | | | | |
| **70.415.0653.0** | 16A | 6p+ ⏚ | 690V | push-in | – | **6** | male insert - push-in term. | **215.25** |
| **70.415.1053.0** | 16A | 10p+ ⏚ | 690V | push-in | – | **10** | male insert - push-in term. | **276.15** |
| **70.415.1653.0** | 16A | 16p+ ⏚ | 690V | push-in | – | **16** | male insert - push-in term. | **336.00** |
| **70.415.2453.0** | 16A | 24p+ ⏚ | 690V | push-in | – | **24** | male insert - push-in term. | **487.20** |
| **70.405.0653.0** | 16A | 6p+ ⏚ | 690V | push-in | – | **6** | female insert - push-in term. | **222.60** |
| **70.405.1053.0** | 16A | 10p+ ⏚ | 690V | push-in | – | **10** | female insert - push-in term. | **283.50** |
| **70.405.1653.0** | 16A | 16p+ ⏚ | 690V | push-in | – | **16** | female insert - push-in term. | **352.80** |
| **70.405.2453.0** | 16A | 24p+ ⏚ | 690V | push-in | – | **24** | female insert - push-in term. | **516.60** |
| **Revos** DD | High density contact inserts for crimp contacts - 24/42/72/108 poles | | | | | | | |
| High contact density in the most compact housing. Connection is made with proven turned crimp contacts. | | | | | | | | |
| • Crimp connection - *(crimp contact pins to be ordered separately - see below)* | | | | | | | | |
| • Connector set is made up with - contact inserts and crimp contact pins *(male and female)* - base - hood | | | | | | | | |
| **73.810.2453.0** | 10A | 24p+ ⏚ | 250V | crimp | – | **6** | male insert - for crimp pins | **352.80** |
| **73.810.4253.0** | 10A | 42p+ ⏚ | 250V | crimp | – | **10** | male insert - for crimp pins | **411.60** |
| **73.810.7253.0** | 10A | 72p+ ⏚ | 250V | crimp | – | **16** | male insert - for crimp pins | **421.05** |
| **73.810.0853.0** | 10A | 108p+ ⏚ | 250V | crimp | – | **24** | male insert - for crimp pins | **444.15** |
| **73.800.2453.0** | 10A | 24p+ ⏚ | 250V | crimp | – | **6** | female insert - for crimp pins | **354.90** |
| **73.800.4253.0** | 10A | 42p+ ⏚ | 250V | crimp | – | **10** | female insert - for crimp pins | **414.75** |
| **73.800.7253.0** | 10A | 72p+ ⏚ | 250V | crimp | – | **16** | female insert - for crimp pins | **423.15** |
| **73.800.0853.0** | 10A | 108p+ ⏚ | 250V | crimp | – | **24** | female insert - for crimp pins | **447.30** |
| **Crimp contacts for Revos DD contact inserts** | | | *(cables 0.75 - 1 mm²)* | | | | | price *(ea)* |
| **05.544.4329.8** | 10A | – | 250 V | | 0.75 - 1 mm² | | male crimp contact pins | **13.55** |
| **02.125.4329.8** | 10A | – | 250 V | | 0.75 - 1 mm² | | female crimp contact pins | **14.81** |
| **05.544.4429.8** | 10A | – | 250 V | | 1.5 mm² | | male crimp contact pins | **13.55** |
| **02.125.4429.8** | 10A | – | 250 V | | 1.5 mm² | | female crimp contact pins | **14.81** |
| **Accessories for contact inserts** | | | | | | | | |
| **95.101.0800.0** | tool | – | – | crimp | – | | crimping tool for crimp contact pins | **6 573.00** |
| **05.502.2100.0** | die | – | – | crimp | – | | die set for crimping contact pins | **2 919.00** |
| **05.502.3100.0** | pos. | – | – | crimp | – | | contact pin positioner for crimping tool | **1 764.00** |
| **05.502.0710.0** | tool | – | extraction tool for removing crimp contact pins from contact inserts | | | | | **615.30** |



Above ZAR prices do not include VAT. E&OE

***continued…*** **Revos - Industrial multipole connectors**

- Set is made up with - contact inserts *(male and female)* - base - hood



70.320.1028.0



70.331.1035.1



70.350.1035.1
*(excluding gland)*



70.352.1035.1
*(excluding gland)*



70.372.0635.1

| type | locking lever | gland entry | cable inlet | size | description | price |
|---|---|---|---|---|---|---|
| **Bases (housings)** | | | | | *(diecast aluminium)* | |
| **Panel mount** *(open bottom base - no cover)* | | | | | | |
| Single locking lever | | | | | | |
| **70.320.0628.0** | single | open | straight | **6** | bulkhead mounting base | **327.60** |
| **71.320.1028.0** | single | open | straight | **10** | bulkhead mounting base | **430.50** |
| **71.320.1628.0** | single | open | straight | **16** | bulkhead mounting base | **450.45** |
| **71.320.2428.0** | single | open | straight | **24** | bulkhead mounting base | **504.00** |
| **70.320.4828.0** | single | open | straight | **48** | bulkhead mounting base | **1 711.50** |
| Double locking lever | | | | | | |
| **70.320.1028.0** | double | open | straight | **10** | bulkhead mounting base | **470.40** |
| **70.320.1628.0** | double | open | straight | **16** | bulkhead mounting base | **485.10** |
| **70.320.2428.0** | double | open | straight | **24** | bulkhead mounting base | **537.60** |
| **70.320.3228.0** | double | open | straight | **32** | bulkhead mounting base | **978.60** |
| **Surface mount** *(closed bottom base)* | | | metric threaded side cable gland entry | | | |
| Single locking lever | | | | | | |
| **70.331.0635.1** | single | M20 | side | **6** | side entry surface mount base | **473.55** |
| **71.331.1035.1** | single | M20 | side | **10** | side entry surface mount base | **588.00** |
| **71.331.1635.1** | single | M25 | side | **16** | side entry surface mount base | **599.55** |
| **71.331.2435.1** | single | M25 | side | **24** | side entry surface mount base | **676.20** |
| **70.344.4835.1** | single | M40 | side | **48** | side entry surface mount base | **4 567.50** |
| Double locking lever | | | | | | |
| **70.331.1035.1** | double | M20 | side | **10** | side entry surface mount base | **625.80** |
| **70.331.1635.1** | double | M25 | side | **16** | side entry surface mount base | **634.20** |
| **70.331.2435.1** | double | M25 | side | **24** | side entry surface mount base | **706.65** |
| **Hoods** *(with studs to receive locking lever on bases)* | | | | | *(diecast aluminium)* | |
| **Lateral cable entry** *(side entry)* | | | *metric threaded cable gland entry* | | | |
| Single locking lever | | | | | | |
| **70.350.0635.1** | single | M20 | side | **6** | lateral cable gland entry hood | **261.45** |
| **71.350.1035.1** | single | M20 | side | **10** | lateral cable gland entry hood | **358.05** |
| **71.350.1635.1** | single | M25 | side | **16** | lateral cable gland entry hood | **359.10** |
| **71.350.2435.1** | single | M25 | side | **24** | lateral cable gland entry hood | **417.90** |
| **70.350.4835.1** | single | M32 | side | **48** | lateral cable gland entry hood | **1 890.00** |
| Double locking lever | | | | | | |
| **70.350.1035.1** | double | M20 | side | **10** | lateral cable gland entry hood | **358.05** |
| **70.350.1635.1** | double | M25 | side | **16** | lateral cable gland entry hood | **359.10** |
| **70.350.2435.1** | double | M25 | side | **24** | lateral cable gland entry hood | **417.90** |
| **70.350.3235.1** | double | M32 | side | **32** | lateral cable gland entry hood | **1 291.50** |
| **Top cable entry** | | | *metric threaded cable gland entry* | | | |
| Single locking lever | | | | | | |
| **70.352.0635.1** | single | M20 | top | **6** | top cable gland entry hood | **261.45** |
| **71.352.1035.1** | single | M20 | top | **10** | top cable gland entry hood | **358.05** |
| **71.352.1635.1** | single | M25 | top | **16** | top cable gland entry hood | **359.10** |
| **71.352.2435.1** | single | M25 | top | **24** | top cable gland entry hood | **417.90** |
| **70.352.4835.1** | single | M32 | top | **48** | top cable gland entry hood | **1 890.00** |
| Double locking lever | | | | | | |
| **70.352.1035.1** | double | M20 | top | **10** | top cable gland entry hood | **358.05** |
| **70.352.1635.1** | double | M25 | top | **16** | top cable gland entry hood | **359.10** |
| **70.352.2435.1** | double | M25 | top | **24** | top cable gland entry hood | **417.90** |
| **70.352.3235.1** | double | M32 | top | **32** | top cable gland entry hood | **1 291.50** |
| **With locking levers** *(for in-line cable-to-cable connection)* | | | | | | |
| **70.372.0635.1** | single | M20 | top | **6** | locking levers for cable to cable | **347.55** |
| **71.372.1035.1** | single | M20 | top | **10** | locking levers for cable to cable | **506.10** |
| **71.372.1635.1** | single | M25 | top | **16** | locking levers for cable to cable | **548.10** |
| **71.372.2435.1** | single | M25 | top | **24** | locking levers for cable to cable | **725.55** |



07.417.6753.0



07.409.7356.0



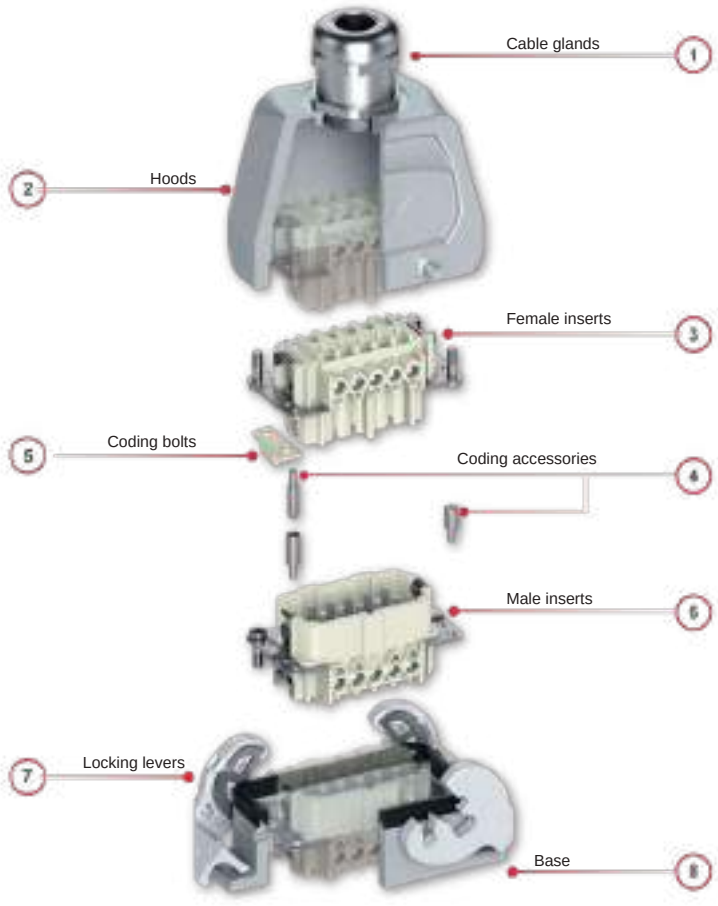
Z7.428.1453.0

**Protective covers for Revos housings**

| type | size | locking lever | for | gasket | description | price |
|---|---|---|---|---|---|---|
| **Covers without locking levers for bases** | | | | | | |
| **07.417.6753.0** | mini | single | male | no | protection cover for bases | **39.90** |
| **07.409.7056.0** | 6 | single | base | no | protection cover for bases | **77.70** |
| **07.428.5553.0** | 10 | single | base | no | protection cover for bases | **136.50** |
| **07.428.5653.0** | 16 | single | base | no | protection cover for bases | **152.25** |
| **07.428.5753.0** | 24 | single | base | no | protection cover for bases | **175.35** |
| **07.409.7156.0** | 10 | double | base | no | protection cover for bases | **89.25** |
| **07.409.7256.0** | 16 | double | base | no | protection cover for bases | **99.75** |
| **07.409.7356.0** | 24 | double | base | no | protection cover for bases | **114.45** |
| **Z7.419.6228.0** | 32 | double | base | no | protection cover for bases | **500.85** |
| **Covers with locking levers for hoods** | | | | | | |
| **07.417.6853.0** | mini | single | female | yes | protection cover for hoods | **55.65** |
| **Z7.428.1153.0** | 6 | single | hood | yes | protection cover for hoods | **341.25** |
| **Z7.428.5553.0** | 10 | single | hood | yes | protection cover for hoods | **408.45** |
| **Z7.428.5653.0** | 16 | single | hood | yes | protection cover for hoods | **411.60** |
| **Z7.428.5753.0** | 24 | single | hood | yes | protection cover for hoods | **474.60** |
| **Z7.428.1253.0** | 10 | double | hood | yes | protection cover for hoods | **408.45** |
| **Z7.428.1353.0** | 16 | double | hood | yes | protection cover for hoods | **411.60** |
| **Z7.428.1453.0** | 24 | double | hood | yes | protection cover for hoods | **474.60** |
| **Z7.419.6128.0** | 32 | double | hood | yes | protection cover for hoods | **768.60** |

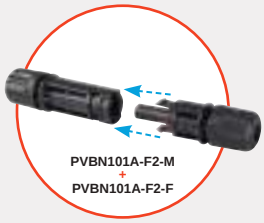
## **Revos** - Industrial multipole connector

– General configuration:






Above ZAR prices do not include VAT. E&OE




## Photovoltaic connectors

Solar PV connectors are manufactured in high quality materials offering extremely high impact strength and chemical resistance with excellent UV and weather properties guaranteeing long-term stability and reliability, lower contact resistance and higher current transfer capability ensuring high product efficiency.

- TUV approved and quick and easy to install
- Stable connection reducing maintenance cost
- Protection class IP67/IP68 suitable for harsh outdoor environments


PVBN101A-F2-M


PVBN101A-F2-F


SY-CP4A-M


SY-CP4A-F


MTT2AB

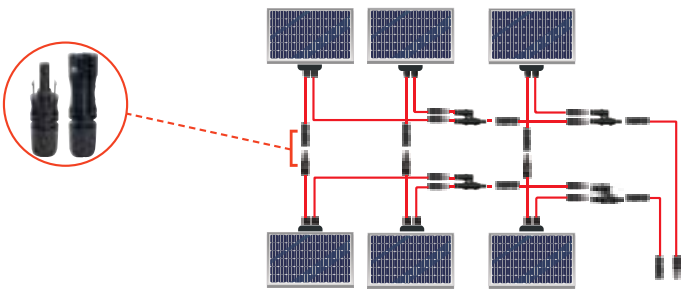

30199


MTHP46-M


MTHP46-F


TB006

| type | for cable mm² | DC Volts IEC 62852 | Amps | cable outer dia (mm) | male - | female + | description | price |
|---|---|---|---|---|---|---|---|---|
| **PVBN series - In-line connectors** | | **1500V** | | **IP68** | | | | |
| Rated voltage: | | IEC1500V / UL 2000V | | | | | | |
| Ambient temperature: | | -40ºC…+90ºC | | | | | | |
| Protection degree: | | IP68 (IEC 60529) | | | | | | |
| Rated Impulse Voltage: | | 16 kV | | | | | | |
| Contact/Insulation material: | | Tin plated Copper/PC | | | | | | |
| Locking system: | | NEC locking type *(requires a tool to open connector)* | | | | | | |
| Fire protection: | | UL94-V 0 | | | | | | |
| Certification: | | IEC 62852; UL 6703 | | | | | | |
| • Supplied individually - complete with insulated housing and open crimp contacts | | | | | | | | |
| **PVBN101A-F2-M** | 4.0/6.0 | 1500 V | 35A | 5.6…6.9 | • | | male solar coupler | **17.01** |
| **PVBN101A-F2-F** | 4.0/6.0 | 1500 V | 35A | 5.6…6.9 | | • | female solar coupler | **17.01** |
| **SY-CP series - Panel mount connectors** | | **1000V** | | *(mounts through M12 panel hole)* | | | | |
| Rated voltage: | | IEC 1000V / UL 600V | | | | | | |
| Ambient temperature: | | -40ºC…+90ºC | | | | | | |
| Protection degree: | | IP68 (IEC 60529) | | | | | | |
| Contact material: | | Tin plated copper | | | | | | |
| Fire protection: | | UL94-V0 | | | | | | |
| Certification: | | IEC 62852; UL 6703 | | | | | | |
| • Supplied individually - complete with insulated housing and open crimp contacts | | | | | | | | |
| **SY-CP4A-M** | 4.0/6.0 | 1000 V | 30A | 5.6…6.9 | • | | male p/mount connector | **20.16** |
| **SY-CP4A-F** | 4.0/6.0 | 1000 V | 30A | 5.6…6.9 | | • | female p/mnt connector | **20.16** |
| **MTT series - T-branch connectors** | | **1500V** | | | | | | |
| MTT series branch connectors are suitable for solar cable 2.5 mm², 4 mm² and 6 mm² in solar connection project. Connecting solar panels in series or parallel, quickly and reliable connection of the solar cables to the photovoltaic system *(solar panels, converters)*. | | | | | | | | |
| **MTT2AB** | branch | 1500 V | 30A | socket | 2 | 1 | socket branch connector | **185.85** |
| | branch | 1500 V | 30A | plug | 1 | 2 | plug branch connector | |
| **Jokari PV-strip Pro** | *Cable stripper for solar cables / photovoltaic cables* | | | | | | | |
| • For stripping solar and photovoltaic cables | | | | | | | | |
| • Uniquely large stripping range from 1.5 - 16 mm² *(16 - 6 AWG)* | | | | | | | | |
| • Length stop can be adjusted with millimetre precision from 5 to 26 mm | | | | | | | | |
| **30199** | *1.5 - 16* | *cable stripper for solar cables / photovoltaic cables 1.5 - 16 mm²* | | | | | | **680.40** |
| **Tools and accessories for above connectors** | | | | | | | | |
| **MTHP46-M** | 4.0/6.0 | 1500 V | open end male crimping contact pins only | | | | *(ea)* | **7.04** |
| **MTHP46-F** | 4.0/6.0 | 1500 V | open end female crimping contact pins only | | | | *(ea)* | **7.04** |
| **YS-C005** | sealing caps for PV connectors | | | | | | *(male + female pair)* | **21.95** |
| **THB510** | open end universal spanner and unlocking tool | | | | | | | **78.75** |
| **TB006** | PV connector set in carrying case comprising: | | | | | | | **1 827.00** |
| | *- PV crimping tool for 2.5/4/6 mm² cables* | | | | | | | |
| | *- Wire cutter, wire stripper for 2.5/4/6 mm² cables* | | | | | | | |
| | *- Pair open end universal spanners with unlocking too* | | | | | | | |



Scan to watch

IP67

New




CN06-W02...




360° rotating plug

CN12-W01-120 + CN12-S02-M8



CN08-S01-M6



CN12-S02-M8

## Battery storage connectors

Battery connectors can be connected in series or individually depending on specific application requirements, the connector is mounted on the front of the battery module, while connections are terminated from the rear.

Connectors can be rotated 360° and are mechanically coded to prevent polarity reversal or incorrect mating.

- Touch proof, safety, reliable
- 360° rotating plug
- Compact, robust design
- Various termination options
- Quick lock / press-to-release design

- Rated voltage: 1000 - 1500 VDC
- Operating temp: -40°C ~ +125°C
- Protection degree: IP67 *(mated)*
- Flammability: UL94 V-0
- Available colours: Orange, black *(red available on request)*

| type | rated current | cable size | rated voltage | colour | Ø pin contact | termination type | description | price |
|---|---|---|---|---|---|---|---|---|
| **Plug** *(right angled)* | | | **IP67** *(mated)* | | | angled 90º | | |
| **CN06-W01-16** | 100A | 16 mm² | 1000V | orange | 6 mm | crimp | angled plug | **162.75** |
| **CN06-W02-16** | 100A | 16 mm² | 1000V | black | 6 mm | crimp | angled plug | **162.75** |
| **CN06-W01-25** | 120A | 25 mm² | 1000V | orange | 6 mm | crimp | angled plug | **162.75** |
| **CN06-W02-25** | 120A | 25 mm² | 1000V | black | 6 mm | crimp | angled plug | **162.75** |
| **CN08-W01-35** | 150A | 35 mm² | 1500V | orange | 8 mm | crimp | angled plug | **234.15** |
| **CN08-W02-35** | 150A | 35 mm² | 1500V | black | 8 mm | crimp | angled plug | **234.15** |
| **CN08-W01-50** | 200A | 50 mm² | 1500V | orange | 8 mm | crimp | angled plug | **234.15** |
| **CN08-W02-50** | 200A | 50 mm² | 1500V | black | 8 mm | crimp | angled plug | **234.15** |
| **CN12-W01-70** | 250A | 70 mm² | 1500V | orange | 12 mm | crimp | angled plug | **456.75** |
| **CN12-W02-70** | 250A | 70 mm² | 1500V | black | 12 mm | crimp | angled plug | **456.75** |
| **CN12-W01-95** | 300A | 95 mm² | 1500V | orange | 12 mm | crimp | angled plug | **456.75** |
| **CN12-W02-95** | 300A | 95 mm² | 1500V | black | 12 mm | crimp | angled plug | **456.75** |
| **CN12-W01-120** | 350A | 120 mm² | 1500V | orange | 12 mm | crimp | angled plug | **456.75** |
| **CN12-W02-120** | 350A | 120 mm² | 1500V | black | 12 mm | crimp | angled plug | **456.75** |

| type | rated current | thread or hole Ø | rated voltage | colour | Ø pin contact | termination type | description | price |
|---|---|---|---|---|---|---|---|---|
| **Socket** *(receptacle)* | | | **IP67** *(mated)* | | | front installation | | |
| **CN06-S01-LD6** | 120A | M6 | 1000V | orange | 6 mm | outer thread | straight socket | **130.20** |
| **CN06-S02-LD6** | 120A | M6 | 1000V | black | 6 mm | outer thread | straight socket | **130.20** |
| **CN06-S01-LM6** | 120A | M6 | 1000V | orange | 6 mm | inner thread | straight socket | **130.20** |
| **CN06-S02-LM6** | 120A | M6 | 1000V | black | 6 mm | inner thread | straight socket | **130.20** |
| **CN06-S01-M5** | 120A | M5 | 1000V | orange | 6 mm | threaded bar | straight socket | **130.20** |
| **CN06-S02-M5** | 120A | M5 | 1000V | black | 6 mm | threaded bar | straight socket | **130.20** |
| **CN06-S01-H25** | 120A | 25 mm² | 1000V | orange | 6 mm | crimp | straight socket | **130.20** |
| **CN06-S02-H25** | 120A | 25 mm² | 1000V | black | 6 mm | crimp | straight socket | **130.20** |
| **CN08-S01-LD8** | 200A | M8 | 1500V | orange | 8 mm | outer thread | straight socket | **195.30** |
| **CN08-S02-LD8** | 200A | M8 | 1500V | black | 8 mm | outer thread | straight socket | **195.30** |
| **CN08-S01-LM6** | 200A | M6 | 1500V | orange | 8 mm | inner thread | straight socket | **195.30** |
| **CN08-S02-LM6** | 200A | M6 | 1500V | black | 8 mm | inner thread | straight socket | **195.30** |
| **CN08-S01-M6** | 200A | M6 | 1500V | orange | 8 mm | threaded bar | straight socket | **195.30** |
| **CN08-S02-M6** | 200A | M6 | 1500V | black | 8 mm | threaded bar | straight socket | **195.30** |
| **CN08-S01-H50** | 200A | 50 mm² | 1500V | orange | 8 mm | crimp | straight socket | **195.30** |
| **CN08-S02-H50** | 200A | 50 mm² | 1500V | black | 8 mm | crimp | straight socket | **195.30** |
| **CN12-S01-LD10** | 350A | M10 | 1500V | orange | 12 mm | outer thread | straight socket | **355.95** |
| **CN12-S02-LD10** | 350A | M10 | 1500V | black | 12 mm | outer thread | straight socket | **355.95** |
| **CN12-S01-LM10** | 350A | M10 | 1500V | orange | 12 mm | inner thread | straight socket | **355.95** |
| **CN12-S02-LM10** | 350A | M10 | 1500V | black | 12 mm | inner thread | straight socket | **355.95** |
| **CN12-S01-M8** | 350A | M8 | 1500V | orange | 12 mm | threaded bar | straight socket | **355.95** |
| **CN12-S02-M8** | 350A | M8 | 1500V | black | 12 mm | threaded bar | straight socket | **355.95** |
| **CN12-S01-H120** | 350A | 120 mm² | 1500V | orange | 12 mm | crimp | straight socket | **355.95** |
| **CN12-S02-H120** | 350A | 120 mm² | 1500V | black | 12 mm | crimp | straight socket | **355.95** |



LD: Outer thread



LM: Inner thread



M: Threaded bar

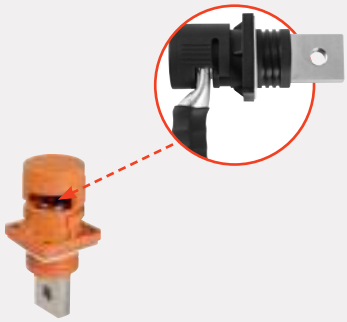


H: Crimp type



Above ZAR prices do not include VAT. E&OE

New



LSP120-02-M6

**Battery terminals** *(Bolt connector)*

LSP series energy storage connectors are through-wall high-voltage connectors which provide secure and reliable connection between energy storage systems and various electrical equipment and systems. Made of high-quality materials with excellent corrosion resistance, ensuring a long service life, essential for efficient energy transmission and distribution.

Convenient, easy to install and maintain, widely used in various industries such as renewable energy, electric vehicles and energy storage systems. An essential component for efficient energy transmission and distribution.

Termination is with a bolted cable lug and can be rotated 360°

- Touch proof, safe and reliable connection
- Multi-directional *(360° rotation)* outlet
- Robust arc resistant design
- Polarity colour error-proof recognition

- Rated voltage: 1500 VDC
- Dielectric strength: 3000 VDC
- Material: PA66/T2Y silver plated copper
- Flammability: UL94 V-0
- Operating temperature: -40°C ~ +125°C
- Available colours: Orange *(+ positive)*, black *(- negative)*



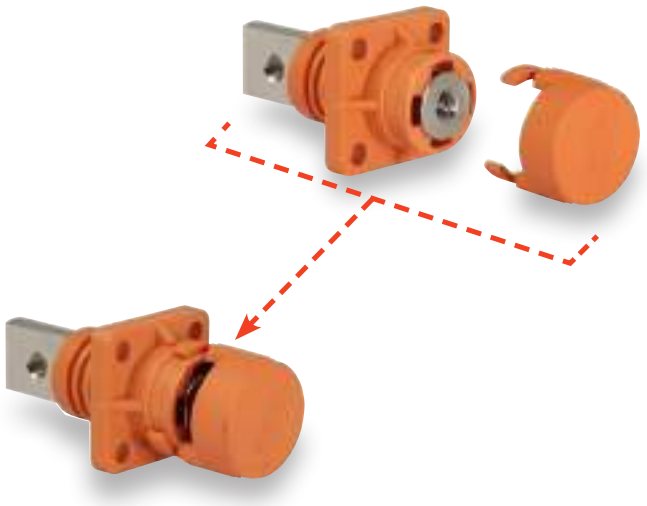
LSP200-02-LD8



LSP400-01-LM8

| type | rated current | cable size | rated voltage | colour | contact screw | termination type | description | price |
|---|---|---|---|---|---|---|---|---|
| **100/120A bolt connector** | | | **16/25 mm²** | | | | | |
| **LSP120-01-M6** | 120A | 25 mm² | 1500V | orange | M6 | threaded bar | bolt connector | **120.75** |
| **LSP120-02-M6** | 120A | 25 mm² | 1500V | black | M6 | threaded bar | bolt connector | **120.75** |
| **LSP120-01-LD6** | 120A | 25 mm² | 1500V | orange | M6 | outer thread | bolt connector | **120.75** |
| **LSP120-02-LD6** | 120A | 25 mm² | 1500V | black | M6 | outer thread | bolt connector | **120.75** |
| **LSP120-01-LM6** | 120A | 25 mm² | 1500V | orange | M6 | inner thread | bolt connector | **120.75** |
| **LSP120-02-LM6** | 120A | 25 mm² | 1500V | black | M6 | inner thread | bolt connector | **120.75** |
| **150/200A bolt connector** | | | **35/50 mm²** | | | | | |
| **LSP200-01-M6** | 200A | 50 mm² | 1500V | orange | M6 | threaded bar | bolt connector | **165.90** |
| **LSP200-02-M6** | 200A | 50 mm² | 1500V | black | M6 | threaded bar | bolt connector | **165.90** |
| **LSP200-01-LD8** | 200A | 50 mm² | 1500V | orange | M8 | outer thread | bolt connector | **165.90** |
| **LSP200-02-LD8** | 200A | 50 mm² | 1500V | black | M8 | outer thread | bolt connector | **165.90** |
| **LSP200-01-LM6** | 200A | 50 mm² | 1500V | orange | M6 | inner thread | bolt connector | **165.90** |
| **LSP200-02-LM6** | 200A | 50 mm² | 1500V | black | M6 | inner thread | bolt connector | **165.90** |
| **300/400A bolt connector** | | | **70/95/120 mm²** | | | | | |
| **LSP400-01-M8** | 400A | 120 mm² | 1500V | orange | M8 | threaded bar | bolt connector | **301.35** |
| **LSP400-02-M8** | 400A | 120 mm² | 1500V | black | M8 | threaded bar | bolt connector | **301.35** |
| **LSP400-01-LD10** | 400A | 120 mm² | 1500V | orange | M10 | outer thread | bolt connector | **301.35** |
| **LSP400-02-LD10** | 400A | 120 mm² | 1500V | black | M10 | outer thread | bolt connector | **301.35** |
| **LSP400-01-LM8** | 400A | 120 mm² | 1500V | orange | M8 | inner thread | bolt connector | **301.35** |
| **LSP400-02-LM8** | 400A | 120 mm² | 1500V | black | M8 | inner thread | bolt connector | **301.35** |

## Bolt connector (threaded bar)




78176-01


78220-01


78299-00

**Flat blade connectors** *(two pole)*

**REMA®** flat blade contact connectors offer a cost effective, quick-disconnect DC power connector solution. Available in different colours used to differentiate the voltage types, ensuring compatibility of properly configured mating connectors according to their respective voltage.

**General features:**

- Housing constructed of glass fibre reinforced material for extreme durability and resistance to battery acid
- Genderless housing design *(same unit reversed plugs into opposite)*
- REMA® engineered contacts made of high grade electrolyte copper, silver plated for corrosion protection
- Different contacts with sizes epitomised for metric and AWG cable dimensions
- CE and UL 1977 certified component meets or exceeds EN 1175-1 industry standards
- In compliance with machinery directive 2006/42 EG an therefore with "CE" marking
- Accepts REMA® strain relief clamps and handles for easy intuitive assembly

| type | current (A) | colour | cable connection AWG | cable connection eq. mm² | description | price |
|---|---|---|---|---|---|---|
| **SR 50** | **50A connector** | | | | (H) 48 x (W) 36.5 x (D) 15.9 mm | |
| **78176-01** | 50A | red | AWG 8 | 10 mm² | heavy duty 2 pole connector | **139.65** |
| **78184-00** | 50A | red | AWG 6 | 16 mm² | heavy duty 2 pole connector | **137.55** |
| **78180-02** | 50A | grey | AWG 8 | 10 mm² | heavy duty 2 pole connector | **137.55** |
| **78180-00** | 50A | grey | AWG 6 | 16 mm² | heavy duty 2 pole connector | **135.45** |
| **78181-05** | 50A | black | AWG 8 | 10 mm² | heavy duty 2 pole connector | **137.55** |
| **78181-00** | 50A | black | AWG 6 | 16 mm² | heavy duty 2 pole connector | **135.45** |
| **SR 175** | **175A connector** | | | | (H) 79.4 x (W) 55.6 x (D) 25.4 mm | |
| **78234-00** | 175A | red | AWG 4 | 25 mm² | heavy duty 2 pole connector | **320.25** |
| **78235-00** | 175A | red | AWG 2 | 35 mm² | heavy duty 2 pole connector | **309.75** |
| **78236-00** | 175A | red | AWG 0 | 50 mm² | heavy duty 2 pole connector | **303.45** |
| **78220-01** | 175A | grey | AWG 4 | 25 mm² | heavy duty 2 pole connector | **271.95** |
| **78220-02** | 175A | grey | AWG 2 | 35 mm² | heavy duty 2 pole connector | **261.45** |
| **78220-00** | 175A | grey | AWG 0 | 50 mm² | heavy duty 2 pole connector | **257.25** |
| **78224-01** | 175A | blue | AWG 4 | 25 mm² | heavy duty 2 pole connector | **271.95** |
| **78224-02** | 175A | blue | AWG 2 | 35 mm² | heavy duty 2 pole connector | **261.45** |
| **78224-00** | 175A | blue | AWG 0 | 50 mm² | heavy duty 2 pole connector | **258.30** |
| **Acccessories for SR 175** *(above)* | | | | | | |
| **78290-00** | – | grey | – | – | handle for SR 175 connectors | **200.55** |
| **78291-00** | – | red | – | – | handle for SR 175 connectors | **168.00** |
| **78010-00** | – | grey | – | – | cable clamp for SR 175 | **174.30** |
| **SR 350** | **350A Connector** | | | | (H) 108 x (W) 69.8 x (D) 33.3 mm | |
| **78307-00** | 350A | red | AWG 0 | 50 mm² | heavy duty 2 pole connector | **423.15** |
| **78308-00** | 350A | red | AWG 00 | 70 mm² | heavy duty 2 pole connector | **453.60** |
| **78309-00** | 350A | red | AWG 000 | 95 mm² | heavy duty 2 pole connector | **883.05** |
| **78299-00** | 350A | grey | AWG 0 | 50 mm² | heavy duty 2 pole connector | **460.95** |
| **78300-00** | 350A | grey | AWG 00 | 70 mm² | heavy duty 2 pole connector | **491.40** |
| **78301-00** | 350A | grey | AWG 000 | 95 mm² | heavy duty 2 pole connector | **922.95** |
| **78303-00** | 350A | blue | AWG 0 | 50 mm² | heavy duty 2 pole connector | **414.75** |
| **78304-00** | 350A | blue | AWG 00 | 70 mm² | heavy duty 2 pole connector | **445.20** |
| **78304-01** | 350A | blue | AWG 000 | 95 mm² | heavy duty 2 pole connector | **877.80** |
| **Acccessories for SR350** *(above)* | | | | | | |
| **78297-00** | – | grey | – | – | handle for SR 350 connectors | **193.20** |
| **78298-00** | – | red | – | – | handle for SR 350 connectors | **193.20** |
| **78011-00** | – | grey | – | – | cable clamp for SR 350 | **475.65** |

| **Reduction bushings** | | from | to | | |
|---|---|---|---|---|---|
| **79840-00** | reduction bushing | AWG 6 | 6 mm² | cable reducing bushing | **21.53** |
| **79844-00** | reduction bushing | AWG 2 | 16 mm² | cable reducing bushing | **43.05** |
| **79846-00** | reduction bushing | AWG 0 | 25 mm² | cable reducing bushing | **37.17** |
| **79847-00** | reduction bushing | AWG 0 | 35 mm² | cable reducing bushing | **131.25** |

*Recommended colour voltage coding:*
*Yellow: 12V - red: 24V - grey: 36V - blue: 48V*

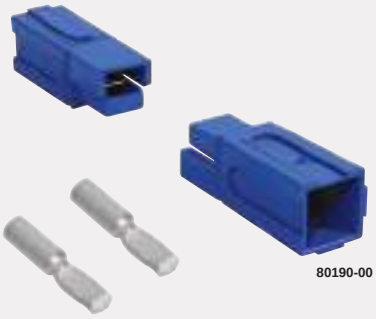


Above ZAR prices do not include VAT. E&OE


80100-00


80188-00


80189-00


80190-00


79840-00

**Flat blade connectors** *(single pole)*

**REMA®** flat blade contact connectors offer a cost effective, quick-disconnect power connector solution. Available in different colours used to differentiate the voltage types, ensuring compatibility of properly configured mating connectors according to their respective voltage.

**General Features**

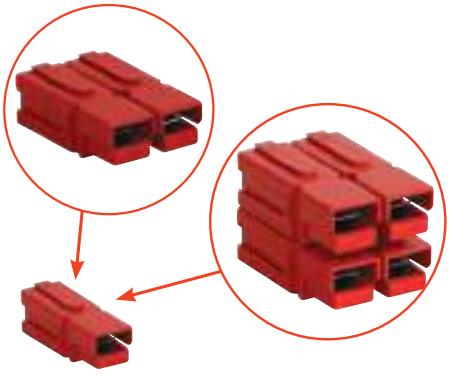
- Interlocking facility permitting multi-pole connections *(2P, 3P, 4P...)* in a flat horizontal or square format
- Constructed of glass fibre reinforced material for extreme durability and resistance to battery acid
- Genderless housing design *(same unit reversed plugs into opposite)*
- REMA® engineered contacts made of high grade electrolyte copper, silver plated for corrosion protection
- Different contacts with sizes optimised for metric and AWG cable dimensions
- CE and UL 1977 certified component meets or exceeds EN 1175-1 industry standards
- In compliance with machinery directive 2006/42 EG an therefore with “CE“ marking

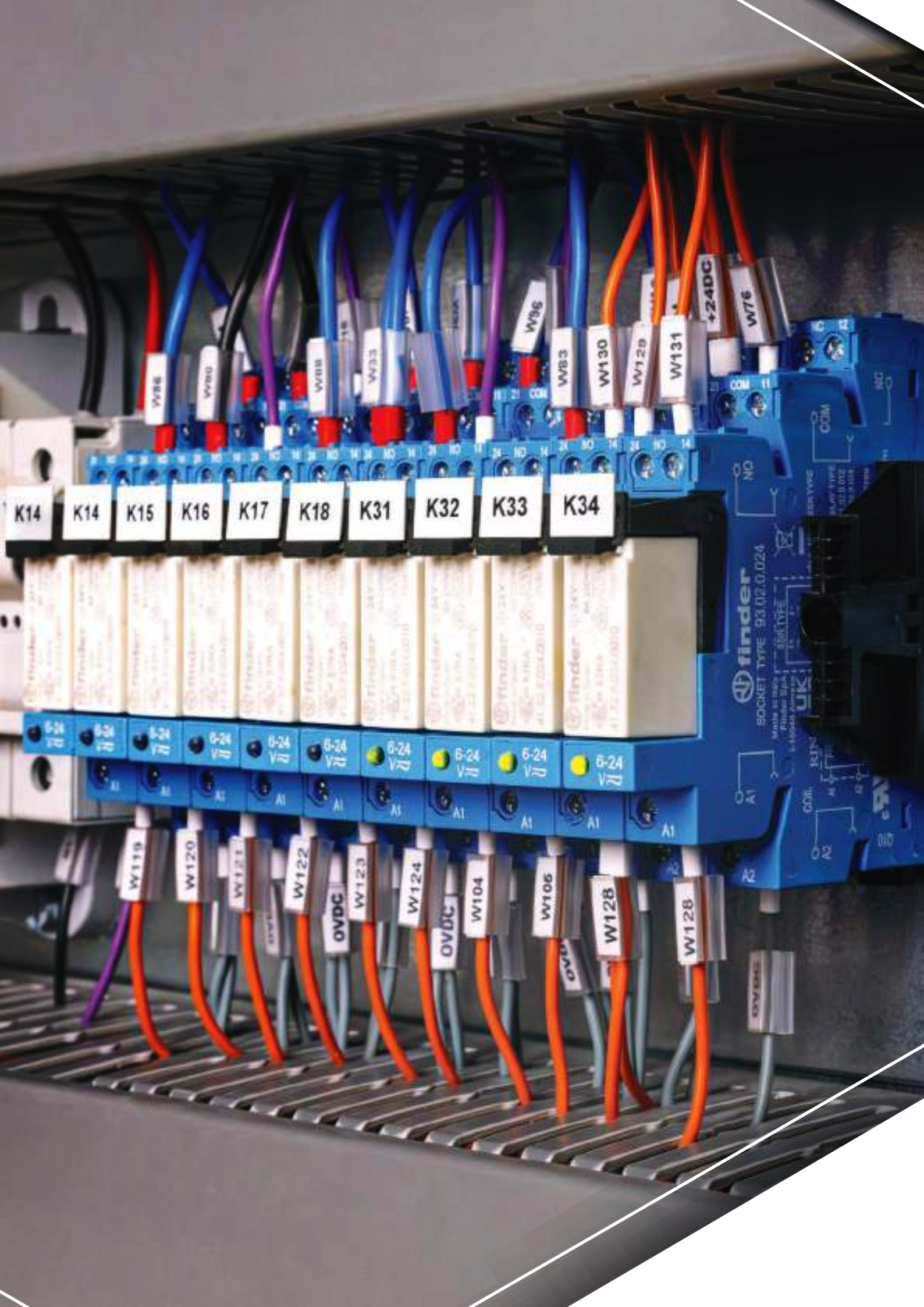
| type | current (A) | colour | cable connection AWG | cable connection eq. mm² | description | pack qty | price (ea) |
|---|---|---|---|---|---|---|---|
| **MC30** | | **30A connector** | | | (H) 41.3 x (W) 7.9 x (D) 7.9 mm | | |
| **80100-00** | 30A | red | AWG 12 | 2.5/4 mm² | single pole connector | 100 | **73.50** |
| **80100-02** | 30A | black | AWG 12 | 2.5/4 mm² | single pole connector | 100 | **73.50** |
| **80100-01** | 30A | white | AWG 12 | 2.5/4 mm² | single pole connector | 100 | **22.26** |
| **80100-04** | 30A | blue | AWG 12 | 2.5/4 mm² | single pole connector | 100 | **22.26** |
| **MC75** | | **75A connector** | | | (H) 81.4 x (W) 15.9 x (D) 15.9 mm | | |
| **80188-00** | 75A | red | AWG 6 | 16 mm² | single pole connector | 50 | **73.50** |
| **80188-02** | 75A | black | AWG 6 | 16 mm² | single pole connector | 50 | **73.50** |
| **80188-04** | 75A | white | AWG 6 | 16 mm² | single pole connector | 50 | **58.80** |
| **80188-06** | 75A | green | AWG 6 | 16 mm² | single pole connector | 50 | **175.35** |
| **80188-08** | 75A | blue | AWG 6 | 16 mm² | single pole connector | 50 | **68.25** |
| **MC120** | | **120A connector** | | | (H) 117.5 x (W) 22.2 x (D) 22.2 mm | | |
| **80189-00** | 120A | red | AWG 2 | 35 mm² | single pole connector | 25 | **164.85** |
| **80189-01** | 120A | black | AWG 2 | 35 mm² | single pole connector | 25 | **164.85** |
| **80189-02** | 120A | white | AWG 2 | 35 mm² | single pole connector | 25 | **148.05** |
| **80189-03** | 120A | green | AWG 2 | 35 mm² | single pole connector | 25 | **182.70** |
| **80191-00** | 120A | blue | AWG 2 | 35 mm² | single pole connector | 25 | **164.85** |
| **MC180** | | **180A connector** | | | (H) 139.7 x (W) 28.6 x (D) 28.6 mm | | |
| **80190-01** | 180A | red | AWG 0 | 50 mm² | single pole connector | 25 | **158.55** |
| **80190-02** | 180A | black | AWG 0 | 50 mm² | single pole connector | 25 | **158.55** |
| **80190-03** | 180A | white | AWG 0 | 50 mm² | single pole connector | 25 | **171.15** |
| **80190-04** | 180A | green | AWG 0 | 50 mm² | single pole connector | 25 | **1 043.70** |
| **80190-00** | 180A | blue | AWG 0 | 50 mm² | single pole connector | 25 | **158.55** |

| **Reduction bushings** | | from | to | | | |
|---|---|---|---|---|---|---|
| **79840-00** | reduction bushing | AWG 6 | 6 mm² | cable reducing bushing | ea | **21.53** |
| **79844-00** | reduction bushing | AWG 2 | 16 mm² | cable reducing bushing | ea | **43.05** |
| **79846-00** | reduction bushing | AWG 0 | 25 mm² | cable reducing bushing | ea | **37.17** |
| **79847-00** | reduction bushing | AWG 0 | 35 mm² | cable reducing bushing | ea | **131.25** |

*Recommended colour voltage coding:*
*Red: 24V - blue: 48V - green: 72V*

**Interlocking facility** permitting multi-pole connections




K14
K14
K15
K16
K17
K18
K31
K32
K33
K34
+24DC
W76
W131
W129
W130
W83
W96
W119
W120
W121
W122
0VDC
W123
W124
0VDC
W104
W105
W128
W128
finder
SOCKET TYPE 93.02.0.024
6-24 V




J

# Timers & Control Relays

Interactive Catalogue



# Timers & Control Relays

J



PCB mount relays

J-1...2



Miniature relays

J-3...8



Relay interface modules

J-9...10



Modular contactors & Relays

J-11...12



Solid-state relays

J-13...16



Modular timing devices

J-17/23/27/30



Protection relays & Monitoring devices

J-18/25/31...32



Level control relays

J-19/26



Float switches

J-20



Daylight & Time switches

J-21/24



Analogue signal converters

J-28



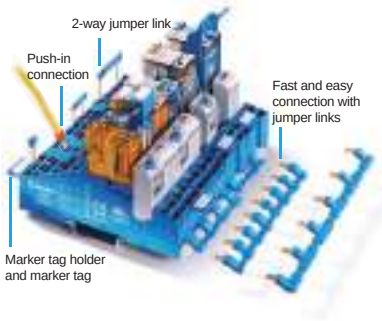
Plug-in timing & Monitoring devices

J-33...36



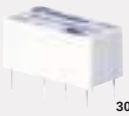
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Scan the QR code for a short tutorial video.






## PCB mount relays

| type | switch current | description | contact | pin pitch (mm) | coil voltage | price |
|---|---|---|---|---|---|---|
| **30 series** | Subminiature DIL relay | | *(11.4 x 20.3 x 10 mm)* | | | |
| • 2-pole changeover contacts low level switching capability - **2A** | | | | | | |
| • Sensitive DC coil - 200mW | | | | | | |
| • Wash tight: RT III | | | | | | |
| **302270120010** | 2A | sealed DIL PCB relay | 2 ch/over | 5.08 | 12 VDC | **94.50** |
| **302270240010** | 2A | sealed DIL PCB relay | 2 ch/over | 5.08 | 24 VDC | **94.50** |
| **302270480010** | 2A | sealed DIL PCB relay | 2 ch/over | 5.08 | 48 VDC | **115.50** |
| **32 series** | Subminiature low profile relay | | *(10.7 x 20 x 10 mm)* | | | |
| • 1-pole changeover contacts - **6A** | | | | | | |
| • Sensitive DC coil - 200mW | | | | | | |
| • Wash tight: RT III | | | | | | |
| **322170124000** | 6A | low profile PCB relay | 1 ch/over | 7.62 | 12 VDC | **80.85** |
| **322170244000** | 6A | low profile PCB relay | 1 ch/over | 7.62 | 24 VDC | **80.85** |
| **322170484000** | 6A | low profile PCB relay | 1 ch/over | 7.62 | 48 VDC | **87.15** |
| **34 series** | Ultra-slim relay *(5 mm)* | | *(15 x 28 x 5 mm)* | | | |
| **EMR - Electromechanical relays** | | | | | | |
| • 1-pole changeover contact - **6A** | | | | | | |
| • Ultra-slim *(5 mm)* package | | | | | | |
| • Sensitive DC coil - 170mW | | | | | | |
| • 8 mm clearance/creepage distance | | | | | | |
| • 6kV (1.2/50 µs) insulation, coil-contacts | | | | | | |
| **345170050010** | 6A | ultra-slim PCB relay | 1 ch/over | 5 | 5 VDC | **122.85** |
| **345170120010** | 6A | ultra-slim PCB relay | 1 ch/over | 5 | 12 VDC | **87.15** |
| **345170240010** | 6A | ultra-slim PCB relay | 1 ch/over | 5 | 24 VDC | **87.15** |
| **345170480010** | 6A | ultra-slim PCB relay | 1 ch/over | 5 | 48 VDC | **122.85** |
| **345170600010** | 6A | ultra-slim PCB relay | 1 ch/over | 5 | 60 VDC | **143.85** |
| **SSR - Solid State relays** | *silent, high speed switching with long electrical life* | | | | | |
| • 1-NO single circuit switching - 6A, 24 VDC / 2A, 240 VAC | | | | | | |
| • Sensitive DC input circuit | | | | | | |
| • 3.000V insulation, input-output | | | | operating | switching | |
| **348170129024** | 6A | slim solid state relay | 1 NO | 8 - 17 VDC | 1.5 - 33 VDC | **376.95** |
| **348170249024** | 6A | slim solid state relay | 1 NO | 16 - 30 VDC | 1.5 - 33 VDC | **376.95** |
| **348170609024** | 6A | slim solid state relay | 1 NO | 35 - 72 VDC | 1.5 - 33 VDC | **402.15** |
| **348170248240** | 2A | slim solid state relay | 1 NO | 16 - 30 VDC | 12 - 275 VAC | **426.30** |
| **348170608240** | 2A | slim solid state relay | 1 NO | 35 - 72 VDC | 12 - 275 VAC | **426.30** |
| **9311** | PCB-mount socket with hinged retain/release clip for 34 series relays | | | | | **40.74** |
| **36 series** | Miniature "sugar cube" relay | | *(15.5 x 19 x 15.2 mm)* | | | |
| • 1-pole changeover contact 10A *(10A N/O and 5A N/C)* | | | | | | |
| • *DC coil - 360mW* | | | | | | |
| • Wash tight: RTIII | | | | | | |
| **361190124011** | 10A | "sugar cube" PCB relay | 1 ch/over | – | 12 VDC | **44.10** |
| **361190244011** | 10A | "sugar cube" PCB relay | 1 ch/over | – | 24 VDC | **44.10** |
| **41 series** | Low-profile PCB relay | | *(15.7 x 29 x 12.6 mm)* | | | |
| • 1 and 2-pole changeover contact 8/12/16A | | | | | | |
| • DC coil - 400mW | | | | | | |
| • 8 mm 6kV (1.2/50 µs) insulation, *coil-contacts* | | | | | | |
| • Flux proof: RT II *(standard)* | | | | | | |
| **Electromechanical relays** | | | | | | |
| **413190120010** | 12A | low-profile PCB relay | 1 ch/over | 3.5 | 12 VDC | **76.65** |
| **413190240010** | 12A | low-profile PCB relay | 1 ch/over | 3.5 | 24 VDC | **76.65** |
| **416190120010** | 16A | low-profile PCB relay | 1 ch/over | 5 | 12 VDC | **79.80** |
| **416190240010** | 16A | low-profile PCB relay | 1 ch/over | 5 | 24 VDC | **79.80** |
| **415290120010** | 8A | low-profile PCB relay | 2 ch/over | 5 | 12 VDC | **89.25** |
| **415290240010** | 8A | low-profile PCB relay | 2 ch/over | 5 | 24 VDC | **89.25** |
| **Solid state relays** | | | | | | |
| • 1-NO single circuit switching | | | | | | |
| • Silent, high speed switching with long electrical life | | | | | | |
| • 2500 VAC insulation, input-output | | | | operating | switching | |
| **418170249024** | 5A | solid state PCB relay | 1 NO | 14 - 32 VDC | 1.5 - 24 VDC | **432.60** |
| **418170248240** | 3A | solid state PCB relay | 1 NO | 14 - 32 VDC | 12 - 275 VAC | **412.65** |
| *Other voltages available on request* | | | | | | |


3022...


3221...


3451...


3481...


9311


3611...


4131...


4181...



Above ZAR prices do not include VAT. E&OE

Control panels | Electronic circuit boards | Automation for blinds & shutters

Multi-function, suitable for a wide range of applications. Due to their versatility they are widely used in electronic circuit boards for household appliances *(refrigerators, washing machines)*, electric gates, boiler control boards and similar

For applications where the size/ratio is an issue, examples include household appliances, food industry and drying kilns



40519...



40618...



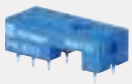
40516...



9505SPA



ER902220



95152SMA



ES50CNER



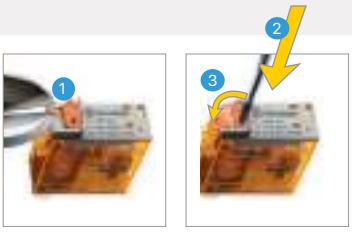
4341...



9523SNA

| type | current | description | contact | pin pitch | coil voltage | price |
|---|---|---|---|---|---|---|
| **40 series** | | Miniature PCB relays *(25 x 29 x 12.4 mm)* | | | | |
| • 8 mm, 6kV (1.2/50µs) isolation, coil-contacts<br>• Flux proof: RT II *(standard)* | | | | | | |
| **405180120000** | 10A | miniature PCB relay | 1 ch/over | 5 mm | 12 VAC | **87.15** |
| **405180240000** | 10A | miniature PCB relay | 1 ch/over | 5 mm | 24 VAC | **87.15** |
| **405180480000** | 10A | miniature PCB relay | 1 ch/over | 5 mm | 48 VAC | **98.70** |
| **405181100000** | 10A | miniature PCB relay | 1 ch/over | 5 mm | 110 VAC | **113.40** |
| **405182400000** | 10A | miniature PCB relay | 1 ch/over | 5 mm | 240 VAC | **142.80** |
| **405190120000** | 10A | miniature PCB relay | 1 ch/over | 5 mm | 12 VDC | **63.00** |
| **405190240000** | 10A | miniature PCB relay | 1 ch/over | 5 mm | 24 VDC | **63.00** |
| **405190360000** | 10A | miniature PCB relay | 1 ch/over | 5 mm | 36 VDC | **84.00** |
| **405190480000** | 10A | miniature PCB relay | 1 ch/over | 5 mm | 48 VDC | **84.00** |
| **405191100000** | 10A | miniature PCB relay | 1 ch/over | 5 mm | 110 VDC | **96.60** |
| **406180120000** | 16A | miniature PCB relay | 1 ch/over | 5 mm | 12 VAC | **91.35** |
| **406180240000** | 16A | miniature PCB relay | 1 ch/over | 5 mm | 24 VAC | **91.35** |
| **406180480000** | 16A | miniature PCB relay | 1 ch/over | 5 mm | 48 VAC | **102.90** |
| **406181100000** | 16A | miniature PCB relay | 1 ch/over | 5 mm | 110 VAC | **116.55** |
| **406182400000** | 16A | miniature PCB relay | 1 ch/over | 5 mm | 240 VAC | **145.95** |
| **406190120000** | 16A | miniature PCB relay | 1 ch/over | 5 mm | 12 VDC | **66.15** |
| **406190240000** | 16A | miniature PCB relay | 1 ch/over | 5 mm | 24 VDC | **66.15** |
| **406190360000** | 16A | miniature PCB relay | 1 ch/over | 5 mm | 36 VDC | **86.10** |
| **406190480000** | 16A | miniature PCB relay | 1 ch/over | 5 mm | 48 VDC | **86.10** |
| **406191100000** | 16A | miniature PCB relay | 1 ch/over | 5 mm | 110 VDC | **98.70** |
| **405280120000** | 8A | miniature PCB relay | 2 ch/over | 5 mm | 12 VAC | **103.95** |
| **405280240000** | 8A | miniature PCB relay | 2 ch/over | 5 mm | 24 VAC | **103.95** |
| **405280480000** | 8A | miniature PCB relay | 2 ch/over | 5 mm | 48 VAC | **115.50** |
| **405281100000** | 8A | miniature PCB relay | 2 ch/over | 5mm | 110 VAC | **129.15** |
| **405282400000** | 8A | miniature PCB relay | 2 ch/over | 5 mm | 240 VAC | **153.30** |
| **405290120000** | 8A | miniature PCB relay | 2 ch/over | 5 mm | 12 VDC | **76.65** |
| **406290120000** | 10A | miniature PCB relay | 2 ch/over | 5 mm | 12 VDC | **92.40** |
| **405290240000** | 8A | miniature PCB relay | 2 ch/over | 5 mm | 24 VDC | **76.65** |
| **406290240000** | 10A | miniature PCB relay | 2 ch/over | 5 mm | 24 VDC | **92.40** |
| **405290360000** | 8A | miniature PCB relay | 2 ch/over | 5 mm | 36 VDC | **98.70** |
| **405290480000** | 8A | miniature PCB relay | 2 ch/over | 5 mm | 48 VDC | **98.70** |
| **405291100000** | 8A | miniature PCB relay | 2 ch/over | 5 mm | 110 VDC | **110.25** |
| *Other voltages available on request* | | | | | | |
| Other configurations: | | *(replace **5th digit** with following): (e.g.405160120000)* | | | | |
| **6** | | Bistable *(single coil)* version | | | | **89.36** |
| **7** | | DC sensitive coil version 0.5 W | | | | **8.46** |
| **Sockets and accessories for 40 series relays** | | | | | for relay | |
| **95152SMA** | | PCB mount socket + retaining clip | *(solder)* | | 40 series | **28.04** |
| **9505SPA*** | | surface/DIN mount socket + retaining clip | *(screw term)* | | 40 series | **103.95** |
| **95P5SPA*** | | surface/DIN mount socket + retaining clip | *(push-in term)* | | 40 series | **150.15** |
| * *Accepts plug-in LED, diode, timing modules (plugs directly into socket)* *see page **J-8*** | | | | | | |
| **09518** | | jumper link/bridge bar for sockets | *(8 way)* | | 9505 | **63.00** |
| **09758** | | jumper link/bridge bar for sockets | *(8 way)* | | 95P5 | **121.80** |
| **46392/PS** | | sheet marking tags *(mounts onto retain clip/holder)* | *(48 pcs)* | | 9505/P5 | **95.55** |
| **09700** | | tag holder for **46392/PS** *(mounts onto socket)* | *(10 pcs)* | | 9505/P5 | **38.22** |
| **ES50CNER** | | Ersce black surface/DIN mount socket | *(screw terminal)* | | 40 series | **108.15** |
| **ER902220** | | spring securing/release clip for socket | *(10 pcs)* | | ES50 | **117.60** |
| **ER902230** | | clip-on marking plate *(top or bottom)* for socket | *(10 pcs)* | | ES50 | **76.65** |
| **43 series** | | Low-profile slimline PCB relays *(15.4 x 28.6 x 10.2 mm)* | | | | |
| • 1-pole changeover contact 10A<br>• Very high coil-contact isolation 10 mm, 6kV (1.2/50µs)<br>• Flux proof: RT II *(standard)* | | | | | | |
| **434170122000** | 10A | low profile slim PCB relay | 1 ch/over | 3.2 mm | 12 VDC | **63.00** |
| **434170242000** | 10A | low profile slim PCB relay | 1 ch/over | 3.2 mm | 24 VDC | **63.00** |
| **9523SNA** | | PCB-mount socket 43 series relay *(with retaining clip)* | | | 4341 | **27.41** |

Shipyards | Hoists & cranes | Elevators & lifts



Manual override option


46618...


46619...


46528...


9711


9702SPA


5514...

| type | current | description | contact | coil voltage | price |
|---|---|---|---|---|---|
| **46 series** | Miniature industrial plug-in relays | *(32.8 x 29 x 12.4 mm)* | | | |
| • AC and DC coil voltages<br>• Lockable test/override button<br>• 8 mm, 6kV (1.2/50µs) isolation, coil-contacts<br>• Manual override facility and mechanical flag indication of relay status<br>• Plug-in or direct connection via robust Faston terminals *(1 pole 4.75 / 2-pole 2.5 mm)* | | | | | |
| **466180120040** | 16A | miniature plug-in relay | 1 ch/over | 12 VAC | **141.75** |
| **466180240040** | 16A | miniature plug-in relay | 1 ch/over | 24 VAC | **141.75** |
| **466180480040** | 16A | miniature plug-in relay | 1 ch/over | 48 VAC | **153.30** |
| **466181100040** | 16A | miniature plug-in relay | 1 ch/over | 110 VAC | **163.80** |
| **466182300040** | 16A | miniature plug-in relay | 1 ch/over | 230 VAC | **198.45** |
| **466190120040** | 16A | miniature plug-in relay | 1 ch/over | 12 VDC | **113.40** |
| **466190240040** | 16A | miniature plug-in relay | 1 ch/over | 24 VDC | **113.40** |
| **466190480040** | 16A | miniature plug-in relay | 1 ch/over | 48 VDC | **137.55** |
| **466191100040** | 16A | miniature plug-in relay | 1 ch/over | 110 VDC | **152.25** |
| **465280120040** | 8A | miniature plug-in relay | 2 ch/over | 12 VAC | **161.70** |
| **465280240040** | 8A | miniature plug-in relay | 2 ch/over | 24 VAC | **161.70** |
| **465280480040** | 8A | miniature plug-in relay | 2 ch/over | 48 VAC | **173.25** |
| **465281100040** | 8A | miniature plug-in relay | 2 ch/over | 110 VAC | **184.80** |
| **465282300040** | 8A | miniature plug-in relay | 2 ch/over | 230 VAC | **222.60** |
| **465290120040** | 8A | miniature plug-in relay | 2 ch/over | 12 VDC | **132.30** |
| **465290240040** | 8A | miniature plug-in relay | 2 ch/over | 24 VDC | **132.30** |
| **465290480040** | 8A | miniature plug-in relay | 2 ch/over | 48 VDC | **157.50** |
| **465291100040** | 8A | miniature plug-in relay | 2 ch/over | 110 VDC | **173.25** |
| Other configurations | *replace **last two digits** with following: (e.g.466180120054)* | | | | |
| **54** | LED | internal LED indicator for | | AC relays | **27.78** |
| **74** | LED | internal LED indicator for | | DC relays | **27.78** |

| **Sockets and accessories for 46 series relays** | | | for relay | |
|---|---|---|---|---|
| **9711** | PCB mount relay socket (12A) | for relay | 4661 | **63.00** |
| **9712** | PCB mount relay socket | for relay | 4652 | **73.50** |
| **9701SPA*** | surface/DIN mount socket + retaining clip | *(screw term)* | 4661 | **102.90** |
| **9702SPA*** | surface/DIN mount socket + retaining clip | *(screw term)* | 4652 | **112.35** |
| **97P1SPA*** | surface/DIN mount socket + retaining clip | *(push-in term)* | 4661 | **140.70** |
| **97P2SPA*** | surface/DIN mount socket + retaining clip | *(push-in term)* | 4652 | **153.30** |
| * *Accepts plug-in LED, diode, timing modules (plugs directly into socket) see page **J-8*** | | | | |
| **04607** | DIN rail mountable support bracket for relays | | 4661/52 | **46.20** |
| **09518** | jumper link/bridge bar for sockets | *(8 way)* | 9701/02 | **63.00** |
| **09758** | jumper link/bridge bar for sockets | *(8 way)* | 97P1/2 | **121.80** |
| **46392/PS** | marking tags *(mounts onto retain clip/holder)* | *(48 pcs)* | 970/P1/2 | **95.55** |
| **09700** | tag holder for **46392/PS** *(mounts onto socket)* | *(10pcs)* | 970/P1/2 | **38.22** |

| **55 series** | Miniature industrial PCB mount relays | *(35.8 x 20.7 x 27.7 mm)* | | | |
|---|---|---|---|---|---|
| **PCB mount termination** *(55 series)* | | | | | |
| • AC and DC coil voltages<br>• Mounting and dedicated sockets, see **J-4** | | | | | |
| **551280120000** | 10A | miniature PCB mount relay | 2 ch/over | 12 VAC | **170.10** |
| **551280240000** | 10A | miniature PCB mount relay | 2 ch/over | 24 VAC | **170.10** |
| **551281100000** | 10A | miniature PCB mount relay | 2 ch/over | 110 VAC | **200.55** |
| **551282400000** | 10A | miniature PCB mount relay | 2 ch/over | 230 VAC | **187.95** |
| **551290120000** | 10A | miniature PCB mount relay | 2 ch/over | 12 VDC | **170.10** |
| **551290240000** | 10A | miniature PCB mount relay | 2 ch/over | 24 VDC | **170.10** |
| **551290480000** | 10A | miniature PCB mount relay | 2 ch/over | 48 VDC | **200.55** |
| **551291100000** | 10A | miniature PCB mount relay | 2 ch/over | 110 VDC | **187.95** |
| **551292200000** | 10A | miniature PCB mount relay | 2 ch/over | 220 VDC | **343.35** |
| **551480120000** | 7A | miniature PCB mount relay | 4 ch/over | 12 VAC | **181.65** |
| **551480240000** | 7A | miniature PCB mount relay | 4 ch/over | 24 VAC | **181.65** |
| **551481100000** | 7A | miniature PCB mount relay | 4 ch/over | 110 VAC | **212.10** |
| **551482400000** | 7A | miniature PCB mount relay | 4 ch/over | 230 VAC | **200.55** |
| **551490120000** | 7A | miniature PCB mount relay | 4 ch/over | 12 VDC | **181.65** |
| **551490240000** | 7A | miniature PCB mount relay | 4 ch/over | 24 VDC | **181.65** |
| **551490480000** | 7A | miniature PCB mount relay | 4 ch/over | 48 VDC | **212.10** |
| **551491100000** | 7A | miniature PCB mount relay | 4 ch/over | 110 VDC | **200.55** |
| **551492200000** | 7A | miniature PCB mount relay | 4 ch/over | 220 VDC | **354.90** |



Above ZAR prices do not include VAT. E&OE

Control & management of electric power

Panels for electrical distribution

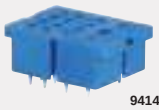
Road / tunnel lighting



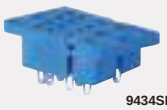
55328...



55329...



9414SMA



9434SMA



9402SPA

| type | current | description | contact | coil voltage | price |
|---|---|---|---|---|---|
| **55 series** | Miniature industrial plug-in relays | *(37.2 x 20.7 x 27.7 mm)* | | | |
| **Plug-in relays** *(55 series)* | | | | | |
| • 2 and 4-pole versions | | | | | |
| • AC and DC coil voltages | | | | | |
| • Plug-in or direct PCB mounting | | | | | |
| • Lockable test/override button *(plug-in version only)* | | | | | |
| • Mechanical flag indication of relay status *(plug-in version only)* | | | | | |
| **General application:** | | | | | |
| - Switchboard installations, industrial automation panels, auxiliary relays, interfacing relays | | | | | |
| **2 Changeover** | *plug-in relays* | | | | |
| **553280120040** | 10A | miniature plug-in relay | 2 changeover | 12 VAC | **162.75** |
| **553280240040** | 10A | miniature plug-in relay | 2 changeover | 24 VAC | **162.75** |
| **553280360040** | 10A | miniature plug-in relay | 2 changeover | 36 VAC | **191.10** |
| **553280480040** | 10A | miniature plug-in relay | 2 changeover | 48 VAC | **191.10** |
| **553280600040** | 10A | miniature plug-in relay | 2 changeover | 60 VAC | **191.10** |
| **553281100040** | 10A | miniature plug-in relay | 2 changeover | 110 VAC | **191.10** |
| **553282300040** | 10A | miniature plug-in relay | 2 changeover | 240 VAC | **180.60** |
| **553290120040** | 10A | miniature plug-in relay | 2 changeover | 12 VDC | **162.75** |
| **553290240040** | 10A | miniature plug-in relay | 2 changeover | 24 VDC | **162.75** |
| **553290360040** | 10A | miniature plug-in relay | 2 changeover | 36 VDC | **191.10** |
| **553290480040** | 10A | miniature plug-in relay | 2 changeover | 48 VDC | **191.10** |
| **553290600040** | 10A | miniature plug-in relay | 2 changeover | 60 VDC | **191.10** |
| **553291100040** | 10A | miniature plug-in relay | 2 changeover | 110 VDC | **180.60** |
| **553292200040** | 10A | miniature plug-in relay | 2 changeover | 220 VDC | **336.00** |
| **4 Changeover** | *plug-in relays* | | | | |
| **553480120040** | 7A | miniature plug-in relay | 4 changeover | 12 VAC | **173.25** |
| **553480240040** | 7A | miniature plug-in relay | 4 changeover | 24 VAC | **173.25** |
| **553480360040** | 7A | miniature plug-in relay | 4 changeover | 36 VAC | **203.70** |
| **553480480040** | 7A | miniature plug-in relay | 4 changeover | 48 VAC | **203.70** |
| **553480600040** | 7A | miniature plug-in relay | 4 changeover | 60 VAC | **203.70** |
| **553481100040** | 7A | miniature plug-in relay | 4 changeover | 110 VAC | **203.70** |
| **553482400040** | 7A | miniature plug-in relay | 4 changeover | 240 VAC | **183.75** |
| **553490120040** | 7A | miniature plug-in relay | 4 changeover | 12 VDC | **166.95** |
| **553490240040** | 7A | miniature plug-in relay | 4 changeover | 24 VDC | **166.95** |
| **553490360040** | 7A | miniature plug-in relay | 4 changeover | 36 VDC | **203.70** |
| **553490480040** | 7A | miniature plug-in relay | 4 changeover | 48 VDC | **203.70** |
| **553490600040** | 7A | miniature plug-in relay | 4 changeover | 60 VDC | **203.70** |
| **553491100040** | 7A | miniature plug-in relay | 4 changeover | 110 VDC | **191.10** |
| **553492200040** | 7A | miniature plug-in relay | 4 changeover | 220 VDC | **347.55** |
| Other configurations: | *replace **last two digits** with following: (e.g.553280120074)* | | | | |
| **54** | LED | internal LED indicator for | | AC relays | **30.19** |
| **74** | LED | internal LED indicator for | | DC relays | **30.19** |

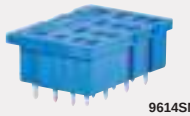
## Sockets and accessories for 55 series relays

| type | description | | for relay | price |
|---|---|---|---|---|
| **PCB mount** | | | | |
| **9412SMA** | 2-pole PCB mount socket | *(solder terminal)* | 5532 | **48.30** |
| **9414SMA** | 4-pole PCB mount socket | *(solder terminal)* | 5534/32 | **50.40** |
| **Flange mount** | | | | |
| **9432SMA** | 2-pole flange mount socket | *(solder terminal)* | 5532 | **47.25** |
| **9434SMA** | 4-pole flange mount socket | *(solder terminal)* | 5534 | **49.35** |
| **Surface/DIN mount** | | | | |
| **9402SPA*** | surface/DIN mount socket + retaining clip | *(screw terminal)* | 5532 | **111.30** |
| **9404SPA*** | surface/DIN mount socket + retaining clip | *(screw terminal)* | 5534/32 | **124.95** |
| **94P4SPA*** | surface/DIN mount socket + retaining clip | *(push-in term)* | 5532/34 | **161.70** |
| **05627** | DIN rail mountable support bracket for | | 5532/34 | **34.44** |
| * *Accepts plug-in LED, diode, timing modules (plugs directly into socket) see page **J-8*** | | | | |
| **09406** | jumper link/bridge bar for sockets | *(8 way)* | 9402/04 | **59.85** |
| **09456** | jumper link/bridge bar for sockets | *(8 way)* | 94P4 | **86.10** |
| **09471** | retaining clip for relays | *(10 pcs)* | 94 series | **45.15** |
| **46392/PS** | sheet marking tags *(mounts onto retain clip/holder)* | *(48 pcs)* | 940/P2/4 | **95.55** |
| **09700** | tag holder for **46392/PS** *(mounts onto socket)* | *(10 pcs)* | 940/P2/4 | **38.22** |

Industrial furnaces & ovens | Industrial motors | Control panels


5632...


5634...


9614SMA


9604SMA


6233...


9213SMA


9203SMA

| type | current | description | contact configuration | coil voltage | price |
|---|---|---|---|---|---|
| **56 series** | Miniature power relays | *(37.2 x 20.7(2-pole) 40.8(4-pole) x 27.7 mm)* | | | |
| • Faston 187, 4.8 x 0.5 mm termination<br>• Mechanical flag indication of relay status • Lockable test/override button | | | | | |
| **563280120040** | 12A | miniature power relay | 2 changeover | 12 VAC | **204.75** |
| **563280240040** | 12A | miniature power relay | 2 changeover | 24 VAC | **204.75** |
| **563280480040** | 12A | miniature power relay | 2 changeover | 48 VAC | **234.15** |
| **563281100040** | 12A | miniature power relay | 2 changeover | 110 VAC | **234.15** |
| **563282400040** | 12A | miniature power relay | 2 changeover | 240 VAC | **234.15** |
| **563290120040** | 12A | miniature power relay | 2 changeover | 12 VDC | **204.75** |
| **563290240040** | 12A | miniature power relay | 2 changeover | 24 VDC | **204.75** |
| **563290480040** | 12A | miniature power relay | 2 changeover | 48 VDC | **234.15** |
| **563290600040** | 12A | miniature power relay | 2 changeover | 60 VDC | **234.15** |
| **563291100040** | 12A | miniature power relay | 2 changeover | 110 VDC | **234.15** |
| **563292200040** | 12A | miniature power relay | 2 changeover | 220 VDC | **378.00** |
| **563480120040** | 12A | miniature power relay | 4 changeover | 12 VAC | **375.90** |
| **563480240040** | 12A | miniature power relay | 4 changeover | 24 VAC | **375.90** |
| **563480480040** | 12A | miniature power relay | 4 changeover | 48 VAC | **400.05** |
| **563481100040** | 12A | miniature power relay | 4 changeover | 110 VAC | **400.05** |
| **563482400040** | 12A | miniature power relay | 4 changeover | 240 VAC | **400.05** |
| **563490120040** | 12A | miniature power relay | 4 changeover | 12 VDC | **375.90** |
| **563490240040** | 12A | miniature power relay | 4 changeover | 24 VDC | **375.90** |
| **563490480040** | 12A | miniature power relay | 4 changeover | 48 VDC | **400.05** |
| **563490600040** | 12A | miniature power relay | 4 changeover | 60 VDC | **400.05** |
| **563491100040** | 12A | miniature power relay | 4 changeover | 110 VDC | **400.05** |
| **563492200040** | 12A | miniature power relay | 4 changeover | 220 VDC | **549.15** |
| Other configurations: | *replace **last two digits** with following: (e.g 563280120040**74**)* | | | | |
| **54** | LED | internal LED indicator for | | AC relays | **64.00** |
| **74** | LED | internal LED indicator for | | DC relays | **64.00** |
| **PCB terminals:** | replace **3rd digit (3)** with a **(4)** *(e.g.564280120040)* | | | | |
| **Sockets and accessories for 56 series relays** | | | | for relay | |
| **9612SMA** | 2-pole PCB mount socket | | *(solder terminal)* | 5632 | **52.50** |
| **9614SMA** | 4-pole PCB mount socket | | *(solder terminal)* | 5634 | **61.95** |
| **9602SPA*** | DIN mount socket + retaining clip | | *(screw terminal)* | 5632 | **134.40** |
| **9604SMA*** | DIN mount socket + metal retaining clip | | *(screw terminal)* | 5634 | **159.60** |
| **05627** | DIN rail mountable support bracket | | | 5632 | **34.44** |
| **05647** | DIN rail mountable support bracket | | | 5634 | **36.96** |
| * *Accepts plug-in LED, diode, timing modules (plugs directly into socket) see page **J-8*** | | | | | *(per pack)* |
| **095004** | spare marking tags for sockets | | *(10pcs)* | 5632 | **25.52** |
| **090002** | spare marking tags for sockets | | *(10pcs)* | 5634 | **25.52** |
| **62 series** | Plug-in power relays | *(49.1 x 38.2 x 35.8 mm)* | | | |
| • Lockable test/override button<br>• Mechanical flag indication of relay status<br>• Plug-in or faston 187 *(4.8 x 0.5 mm)* termination<br>• Reinforced insulation between coil and contacts to EN60335-1 | | | | | |
| **623380120040** | 16A | plug-in industrial power relay | 3 changeover | 12 VAC | **250.95** |
| **623380240040** | 16A | plug-in industrial power relay | 3 changeover | 24 VAC | **250.95** |
| **623380480040** | 16A | plug-in industrial power relay | 3 changeover | 48 VAC | **274.05** |
| **623381100040** | 16A | plug-in industrial power relay | 3 changeover | 110 VAC | **274.05** |
| **623382400040** | 16A | plug-in industrial power relay | 3 changeover | 240 VAC | **267.75** |
| **623384000040** | 16A | plug-in industrial power relay | 3 changeover | 400 VAC | **329.70** |
| **623390120040** | 16A | plug-in industrial power relay | 3 changeover | 12 VDC | **250.95** |
| **623390240040** | 16A | plug-in industrial power relay | 3 changeover | 24 VDC | **250.95** |
| **623390480040** | 16A | plug-in industrial power relay | 3 changeover | 48 VDC | **274.05** |
| **623391100040** | 16A | plug-in industrial power relay | 3 changeover | 110 VDC | **267.75** |
| **623392200040** | 16A | plug-in industrial power relay | 3 changeover | 220 VDC | **387.45** |
| Other configurations: | *replace **last two digits** with following: (e.g 623380120074) except 220VDC/400AC* | | | | |
| **54** | LED | internal LED indicator for AC relays | | | **53.00** |
| **74** | LED | internal LED indicator for DC relays | | | **53.00** |
| **Sockets and accessories for 62 series relays** | | | | for relay | |
| **9213SMA** | 3-pole PCB mount socket | | *(solder terminal)* | 6233 | **52.50** |
| **9233SMA** | 3-pole flange mount socket | | *(solder terminal)* | 6233 | **52.50** |
| **9203SMA** | 3-pole surface/DIN mount socket | | *(screw terminal)* | 6233 | **177.45** |
| **06207** | DIN rail mountable support bracket | | *(top mount)* | 6233 | **34.44** |
| **06208** | DIN rail mountable support bracket | | *(rear mount)* | 6233 | **34.44** |



Above ZAR prices do not include VAT. E&OE

Wood-processing machines | Industrial furnaces & ovens | Shipyards


6012...


6013...

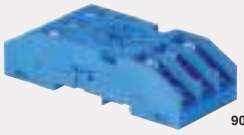

9015


9013


9020SMA


9026SMA


9027SMA


9048SMA


9003SMA

| type | current | pins | description | contact configuration | coil voltage | price |
|---|---|---|---|---|---|---|
| **60 series** | General purpose plug-in relays | | *(54.2 x 32.5 x 36.4 mm)* | | | |

- AC and DC coil voltages
- Lockable test/override button
- 8 pin *(2-pole) 11pin (3-pole)* round pin plug-in termination
- Current sensing coil available: AC: 0.1 - 2.5A / DC: 0.1 - 2.0A
- Mechanical flag indication of relay status and manual override facility

| | | | | | | |
|---|---|---|---|---|---|---|
| **601280120040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 12 VAC | **226.80** |
| **601280240040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 24 VAC | **226.80** |
| **601280360040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 36 VAC | **249.90** |
| **601280480040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 48 VAC | **249.90** |
| **601280600040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 60 VAC | **249.90** |
| **601281100040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 110 VAC | **249.90** |
| **601282400040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 240 VAC | **242.55** |
| **601284000040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 400 VAC | **306.60** |
| **601290120040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 12 VDC | **226.80** |
| **601290240040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 24 VDC | **226.80** |
| **601290360040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 36 VDC | **249.90** |
| **601290480040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 48 VDC | **225.75** |
| **601290600040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 60 VDC | **249.90** |
| **601291100040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 110 VDC | **242.55** |
| **601292200040** | 10A | 8 pin | plug-in industrial relay | 2 ch/over | 220 VDC | **365.40** |
| **601380120040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 12 VAC | **234.15** |
| **601380240040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 24 VAC | **234.15** |
| **601380360040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 36 VAC | **256.20** |
| **601380480040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 48 VAC | **256.20** |
| **601380600040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 60 VAC | **256.20** |
| **601381100040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 110 VAC | **256.20** |
| **601382400040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 240 VAC | **249.90** |
| **601384000040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 400 VAC | **313.95** |
| **601390120040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 12 VDC | **234.15** |
| **601390240040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 24 VDC | **234.15** |
| **601390360040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 36 VDC | **256.20** |
| **601390480040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 48 VDC | **256.20** |
| **601390600040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 60 VDC | **256.20** |
| **601391100040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 110 VDC | **249.90** |
| **601392200040** | 10A | 11 pin | plug-in industrial relay | 3 ch/over | 220 VDC | **371.70** |

Other configurations: *replace **last two digits** with following: (e.g. 60128012054) except 220VDC/400AC*

| | | | | | |
|---|---|---|---|---|---|
| **54** | LED | internal LED indicator for | | AC relays | **61.59** |
| **74** | LED | internal LED indicator for | | DC relays | **61.59** |
| **46392/PS** | sheet marking tags | *(mounts onto retain clip/holder)* | *(48 pcs)* | 6012/3 | **95.55** |

## Sockets and accessories for 60 series relays

| | | | for relay | |
|---|---|---|---|---|
| **Flange mount** | | | | |
| **9012** | 2-pole flange mount socket | *(solder terminal)* | 6012 | **7.10** |
| **PCB mount** | | | | |
| **9014** | 2-pole PCB mount socket | *(diameter 20.5 mm)* | 6012 | **41.37** |
| **90141** | 3-pole PCB mount socket | *(diameter 17.5 mm)* | 6013 | **41.37** |
| **9015** | 2-pole PCB mount socket | *(diameter 22.0 mm)* | 6012 | **43.05** |
| **90151** | 3-pole PCB mount socket | *(diameter 19.0 mm)* | 6013 | **43.05** |
| **Surface/DIN mount** | | | | |
| **9020SMA** | surface/DIN mount socket *(standard)* | *(screw terminal)* | 6012 | **105.00** |
| **9021SMA** | surface/DIN mount socket *(standard)* | *(screw terminal)* | 6013 | **116.55** |
| **9022SMA** | surface/DIN mount socket *(oval)* | *(screw terminal)* | 6012 | **68.25** |
| **9023SMA** | surface/DIN mount socket *(oval)* | *(screw terminal)* | 6013 | **79.80** |
| **9026SMA** | surface/DIN mount socket *(square)* | *(screw terminal)* | 6012 | **108.15** |
| **9027SMA** | surface/DIN mount socket *(square)* | *(screw terminal)* | 6013 | **120.75** |
| **9048SMA** | surface/DIN mount socket *(rectangular)* | *(screw terminal)* | 6012 | **153.30** |
| **9049SMA** | surface/DIN mount socket *(rectangular)* | *(screw terminal)* | 6013 | **173.25** |
| **9002SMA*** | surface/DIN mount socket *(for modules)* | *(screw terminal)* | 6012 | **114.45** |
| **9003SMA*** | surface/DIN mount socket *(for modules)* | *(screw terminal)* | 6013 | **127.05** |
| **09006** | jumper link/bridge bar for sockets | *(6 way)* | 9002/3 | **78.75** |
| **090002** | spare marking tag for sockets | *(10 pcs)* | 9002/3 | **25.52** |

* *Accepts plug-in LED, diode, timing modules (plugs directly into socket) see page **J-8***

Industrial washing machines | Air conditioners | Power generators


6531...


6531...


6682... + 06607


6682...

PV


6822...

| type | current | description | contact configuration | coil voltage | price |
|---|---|---|---|---|---|
| **65 series** | Power relays | | *(42.2 x 32.2 x 36.6 mm)* | | |
| • Flange mount with Faston 250 *(6.3 x 0.5 mm)* termination<br>• Reinforced insulation between coil and contacts to EN60335-1 | | | | | |
| **20A - 1 NO + 1 NC relay** | | | | | |
| **653180120000** | 20A | plug-in industrial power relay | 1 NO + 1 NC | 12 VAC | **214.20** |
| **653180240000** | 20A | plug-in industrial power relay | 1 NO + 1 NC | 24 VAC | **214.20** |
| **653180480000** | 20A | plug-in industrial power relay | 1 NO + 1 NC | 48 VAC | **237.30** |
| **653181100000** | 20A | plug-in industrial power relay | 1 NO + 1 NC | 110 VAC | **237.30** |
| **653182400000** | 20A | plug-in industrial power relay | 1 NO + 1 NC | 240 VAC | **273.30** |
| **653184000000** | 20A | plug-in industrial power relay | 1 NO + 1 NC | 400 VAC | **289.80** |
| **653190120000** | 20A | plug-in industrial power relay | 1 NO + 1 NC | 12 VDC | **214.20** |
| **653190240000** | 20A | plug-in industrial power relay | 1 NO + 1 NC | 24 VDC | **214.20** |
| **653190480000** | 20A | plug-in industrial power relay | 1 NO + 1 NC | 48 VDC | **237.30** |
| **653191100000** | 20A | plug-in industrial power relay | 1 NO + 1 NC | 110 VDC | **229.95** |
| **653192200000** | 20A | plug-in industrial power relay | 1 NO + 1 NC | 220 VDC | **346.50** |
| **30A - 1 Normally open relay** | ≥ *3 mm contact gap* | | | | |
| **653180120300** | 30A | plug-in industrial power relay | 1 NO | 12 VAC | **206.85** |
| **653180240300** | 30A | plug-in industrial power relay | 1 NO | 24 VAC | **206.85** |
| **653180480300** | 30A | plug-in industrial power relay | 1 NO | 48 VAC | **229.95** |
| **653181100300** | 30A | plug-in industrial power relay | 1 NO | 110 VAC | **229.95** |
| **653182400300** | 30A | plug-in industrial power relay | 1 NO | 240 VAC | **222.60** |
| **653184000300** | 30A | plug-in industrial power relay | 1 NO | 400 VAC | **282.45** |
| **653190120300** | 30A | plug-in industrial power relay | 1 NO | 12 VDC | **210.00** |
| **653190240300** | 30A | plug-in industrial power relay | 1 NO | 24 VDC | **210.00** |
| **653190480300** | 30A | plug-in industrial power relay | 1 NO | 48 VDC | **229.95** |
| **653191100300** | 30A | plug-in industrial power relay | 1 NO | 110 VDC | **222.60** |
| **653192200300** | 30A | plug-in industrial power relay | 1 NO | 220 VDC | **339.15** |
| **Accessories for 65 series relays** | | | | | |
| **06507** | | DIN rail mounting frame/bracket | *(terminals facing forward)* | | **32.45** |
| **06508** | | DIN rail mounting frame/bracket | *(terminals facing down)* | | **32.45** |
| **66 series** | Power relays - 2-pole | | *(31 x 67.5 x 33.5 mm)* | | |
| • Faston 250 *(6.3 x 0.8 mm)* termination | 8 mm, 6kV (1.2/50 µs) isolation, coil-contacts, flange mount | | | | |
| **2-pole changeover relay - 30A NO - 10A NC** | | | | | |
| **668280120000** | 30A | plug-in industrial power relay | 2 changeover | 12 VAC | **281.40** |
| **668280240000** | 30A | plug-in industrial power relay | 2 changeover | 24 VAC | **281.40** |
| **668281100000** | 30A | plug-in industrial power relay | 2 changeover | 110 VAC | **281.40** |
| **668282400000** | 30A | plug-in industrial power relay | 2 changeover | 240 VAC | **299.25** |
| **668290120000** | 30A | plug-in industrial power relay | 2 changeover | 12 VDC | **281.40** |
| **668290240000** | 30A | plug-in industrial power relay | 2 changeover | 24 VDC | **281.40** |
| **668291100000** | 30A | plug-in industrial power relay | 2 changeover | 110 VDC | **299.25** |
| *Atex version available on request* | | | | | |
| **Accessories for 66 series relays** | | | | | |
| **06607** | | DIN rail mounting frame | *(terminals facing forward)* | | **34.44** |
| **67 series** | High power relays - 2/3-pole | | *(57.5 x 33 x 51.5 mm)* | | |
| High power PCB mount relays for use in the photovoltaic sector<br>• DC coil voltage - *with only 170mW holding power*<br>• Contact gap ≥ 3 mm *(according to VDE 0126-1-1, EN 62109-1, EN 62109-2)*<br>• Suitable for use at ambient temperatures up to 85 °C *(with energy-saving coil energisation)* | | | | | |
| **50A - 2-pole NO relays** | | | | | |
| **672290124300** | 50A | PCB mount high power relay | 2 NO | 12 VDC | **768.60** |
| **672290244300** | 50A | PCB mount high power relay | 2 NO | 24 VDC | **768.60** |
| **68 series** | High power 2-pole relays | | *(57.5 x 52.2 x 52.2 mm)* | | |
| High power PCB mount relays for use in the photovoltaic sector<br>• DC coil voltage - *with only 700mW holding power*<br>• Contact gap ≥ 3.6 mm *(according to VDE 0126-1-1, EN 62109-1, EN 62109-2)*<br>• Suitable for use at ambient temperatures up to 85°C | | | | | |
| **100A - 2-pole NO relays** | | | | | |
| **682290124300** | 100A | PCB mount high power relay | 2 NO | 12 VDC | **862.05** |
| **682290244300** | 100A | PCB mount high power relay | 2 NO | 24 VDC | **862.05** |



Above ZAR prices do not include VAT. E&OE

Machines for paper processing

Packaging machines

Printing machines


9902...


9902...59


9902...99


9902...09


8630...


86000...

## Plug-in LED / diode / timer modules

Plug-in modules are convenient add-on devices for relays which offer LED indication *(for ease of viewing relay status from a distance),* diode protection, RC circuits, bypass and timing facilities for all socket-mounted plug-in relays. The modules simply plug into specific sockets to enhance the relays functionality.

| type | LED colour | description | voltage | price |
|---|---|---|---|---|
| **Diode module** | | | | |
| Recovery diode modules are used for DC applications, reverse voltage peaks of the coil are short circuited by the recovery diode, release time is increased by a factor of 3 to 5. | | | | |
| **9902300000** | – | diode module *(standard polarity A1/+)* | 6...220 VDC | **39.48** |
| **LED module** | | | | |
| Used for AC and DC, the LED indicator illuminates when the relay coil is energised. It is essential to connect "+" to terminal A1 in DC applications | | | | |
| **9902002459** | green | plug-in LED module | 6...24 VAC/DC | **59.85** |
| **9902006059** | green | plug-in LED module | 28...60 VAC/DC | **60.90** |
| **9902023059** | green | plug-in LED module | 110...240 VAC/DC | **59.85** |
| **LED + diode module** | | | | |
| Recovery diode + LED module are used for DC, reverse voltage peaks are short circuited by the recovery diode *(positive to terminal A1),* release time is increased by approximately 3 times, if this is undesirable use a Varistor or RC module. LED indicator illuminates when coil is energised. | | | | |
| **9902902499** | green | plug-in LED + diode module | 6...24 VDC | **66.15** |
| **9902906099** | green | plug-in LED + diode module | 28...60 VDC | **69.30** |
| **9902922099** | green | plug-in LED + diode module | 110...220 VDC | **66.15** |
| **LED + Varistor module** | | | | |
| LED + Varistor modules are used for AC and DC coils, reverse voltage peaks of the relay coil are limited by the Varistor to approximately 2.5 times the nominal voltage of the supply. Insignificant increase in release times. | | | | |
| **9902002498** | green | plug-in LED + Varistor module | 6...24 VAC/DC | **79.80** |
| **9902006098** | green | plug-in LED + Varistor module | 28...60 VAC/DC | **80.85** |
| **9902023098** | green | plug-in LED + Varistor module | 110...240 VAC/DC | **79.80** |
| **RC circuit module** | | | | |
| RC circuit modules are used for AC and DC applications. The reverse voltage peaks of the coil are limited by th RC module to approximately 2.5 times the nominal supply voltage. Insignificant increase in release times. When using DC coils it is essential that positive is connected to terminal A1 | | | | |
| **9902002409** | green | plug-in RC module fo AC and DC lines | 6...24 VAC/DC | **84.00** |
| **9902006009** | green | plug-in RC module fo AC and DC lines | 28...60 VAC/DC | **86.10** |
| **9902023009** | green | plug-in RC module fo AC and DC lines | 110...240 VAC/DC | **84.00** |
| **Residual current bypass module** | | | | |
| Bypass modules are used in applications for 110 and 220 VAC relays with a tendency to fail to release, mainly caused by residual currents from AC proximity switches or inductive coupling caused by long parallel lying AC control lines. | | | | |
| **9902823007** | – | plug-in residual current bypass module | 110...240 VAC | **66.15** |
| **Multi-function, multi-voltage timer modules** | | | | |
| • Time range1s, 10s, 100s, 10m, 100m, 10hr, 100hr *(adjustable)*<br>• Plugs directly into sockets converting standard relays into timing devices<br>• Can be used with ***9002/3, 9203, 9604*** sockets | | | | |
| **863000240000** | green | multi-range, bi-functional timer module | 12...24 VAC/DC | **521.85** |
| **863082400000** | green | multi-range, bi-functional timer module | 230 VAC | **585.90** |
| **860002400000** | green | multi-range, multi-function timer module | 12...240 VAC/DC | **918.75** |

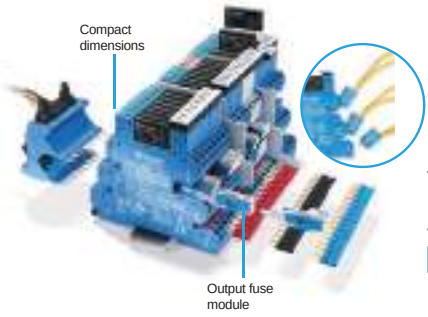
## Mounting for **plug-in module**





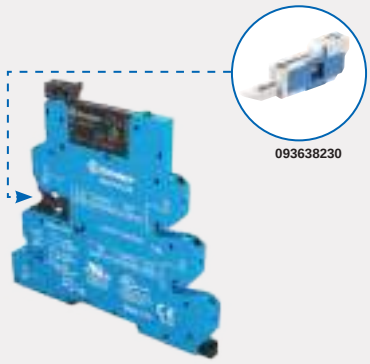

**Multi-range / function timer module**

**AI:** On-delay
**DI:** Interval
**SW:** Symmetrical flasher *(starting pulse on)*
**BE:** Off-delay with control signal
**CE:** On- and off-delay with control signal
**DE:** Interval with control signal on
**EE:** Interval with control signal off
**FE:** Interval with control signal on and off




**39 series** Master***INTERFACE*** **-** relay interface modules *(slimline)*

- Space saving 6.2 mm wide
- Connections for 16 way jumper links *(bridging bars)*
- Integral LED coil indication and protection circuit
- Secure retention and easy ejection by plastic clip
- DIN 35 rail mounting (EN60715)




## Master***PLUS*** **series - Relay interface modules**

- For general use in any type of system or application
- Provides extra protection for the output circuit thanks to the replaceable fuse module
- Can be used for input interface applications between auxiliary contacts, sensors etc. and controllers, PLCs or motors or for output interface between PLCs controllers and relays, solenoids etc.
- Accepts output fuse module **(09363)** for quick/easy space efficient protection of output circuits

| type | current / voltage | operating voltage | switching voltage | contact | type terminal | description | price |
|---|---|---|---|---|---|---|---|
| Master***PLUS*** **- EMR** | | **electromechanical relays** | | | | *(H) 87 x (W) 6.2 x (D) 91 mm* | |
| **393100120060** | 6A | 12 VAC/DC | 250/400 VAC | 1 ch/over | screw | relay interface module | **292.95** |
| **393100240060** | 6A | 24 VAC/DC | 250/400 VAC | 1 ch/over | screw | relay interface module | **292.95** |
| **396100240060** | 6A | 24 VAC/DC | 250/400 VAC | 1 ch/over | push-in | relay interface module | **292.95** |
| **393182300060** | 6A | 230 VAC | 250/400 VAC | 1 ch/over | screw | relay interface module | **384.30** |
| Master***PLUS*** **- SSR** | | **solid state relays** | | | | | |
| **393070129024** | 6A | 12 VDC | 1.5...33 VDC | 1 NO | screw | relay interface module | **619.50** |
| **393070249024** | 6A | 24 VDC | 1.5...33 VDC | 1 NO | screw | relay interface module | **619.50** |
| **396070249024** | 6A | 24 VDC | 1.5...33 VDC | 1 NO | push-in | relay interface module | **619.50** |
| **396070248240** | 2A | 24 VDC | 12...275 VAC | 1 NO | push-in | relay interface module | **651.00** |

**Plug-in output fuse module -** for Master***PLUS*** interface - accepts std 20 x 5 mm fuses up to 6A, 250 V

*- Quick easy plug-in connection to socket (fuse condition visibility with inspection window)*

| | | | | | |
|---|---|---|---|---|---|
| **09363** | fuse | – | plug-in | output fuse module for Master***PLUS*** interface | **92.40** |
| **093630024** | fuse | 24 VAC/DC | plug-in | output fuse module LED fuse status indicator | **119.70** |
| **093638230** | fuse | 230 VAC | plug-in | output fuse module LED fuse status indicator | **119.70** |




## Master***INPUT*** **series - Relay interface module**

- Interface between auxiliary contacts, sensors, limit switches and PLCs/controllers
- Permits full termination of input devices *(no additional terminals required)*
- Quick and easy distribution of supply voltage with jumper links
- Gold plated output contacts for improved compatibility with low energy PLC inputs

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Master***INPUT*** **- EMR** | | **electromechanical relays** | | | | | |
| **394100245060** | 6A | 24 VAC/DC | 250/400 VAC | 1 ch/over | screw | relay interface module | **352.80** |
| **397100245060** | 6A | 24 VAC/DC | 250/400 VAC | 1 ch/over | push-in | relay interface module | **352.80** |
| **394182305060** | 6A | 230 VAC | 250/400 VAC | 1 ch/over | screw | relay interface module | **444.15** |
| Master***INPUT*** **- SSR** | | **solid state relays** | | | | | |
| **394000249024** | 6A | 24 VAC/DC | 1.5...33 VDC | 1 NO | screw | relay interface module | **655.20** |
| **397070249024** | 6A | 24 VDC | 1.5...33 VDC | 1 NO | push-in | relay interface module | **619.50** |
| **394000248240** | 2A | 24 VAC/DC | 12...275 VAC | 1 NO | screw | relay interface module | **680.40** |




## Master***OUTPUT*** **series - Relay interface module**

- Interface between PLCs and controllers and output devices, valves, motors etc…
- Quick and easy distribution of supply voltage with jumper link

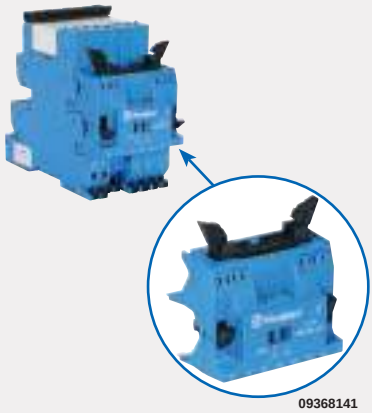
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Master***OUTPUT*** **- EMR** | | **electromechanical relays** | | | | | |
| **392100240060** | 6A | 24 VAC/DC | 250 / 400 VAC | 1 NO | screw | relay interface module | **292.95** |
| **395100240060** | 6A | 24 VAC/DC | 250 / 400 VAC | 1 NO | push-in | relay interface module | **292.95** |
| **392182300060** | 6A | 230 VAC | 250 / 400 VAC | 1 NO | screw | relay interface module | **384.30** |
| Master***OUTPUT*** **- SSR** | | **solid state relays** | | | | | |
| **392070129024** | 6A | 12 VDC | 1.5...33 VDC | 1 NO | screw | relay interface module | **619.50** |
| **392070249024** | 6A | 24 VDC | 1.5...33 VDC | 1 NO | screw | relay interface module | **619.50** |
| **395070249024** | 6A | 24 VDC | 1.5...33 VDC | 1 NO | push-in | relay interface module | **619.50** |
| **392082309024** | 2A | 230 VAC | 1.5...33 VDC | 1 NO | screw | relay interface module | **655.20** |

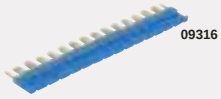
*Accessories for **39 series** interface modules see page **J-10***

*Atex version available on request*

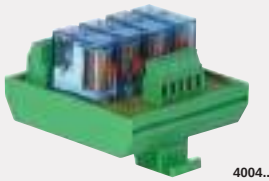


Above ZAR prices do not include VAT. E&OE


09368141


09316


3801...


4004...

## Accessories for 39 series relay interface modules

| type | No. of ways | colour | | description | price |
|---|---|---|---|---|---|
| **16-way jumper link (bridging bar)** | | | | | |
| *- Possibility of multiple connection, side by side* | | | | | |
| **09316** | 16 way | blue | plug-in | plug-in jumper link *(bridge bar)* for interfaces | **76.65** |
| **093160** | 16 way | black | plug-in | plug-in jumper link *(bridge bar)* for interfaces | **76.65** |
| **093161** | 16 way | red | plug-in | plug-in jumper link *(bridge bar)* for interfaces | **76.65** |
| **Separator dual-purpose** *(1.8 mm or 6.2 mm separation)* | | | | | |
| *- Useful for the visual separation of different groups or voltages of neighbouring interfaces,* | | | | | |
| **09360** | partition | | | plastic separator for interface modules *(1,8 or 6.2 mm separation)* | **24.89** |
| **Terminal doubler** | | | | | |
| *- For push-in terminal sockets only* | | | | | |
| *- Max. wire size 2 x 1.5 mm²* | | | | | |
| **09363** | doubler | 6 A/300V | | terminal doubler (for two cables) push-in terminal sockets | **92.40** |
| *Master**ADAPTOR** - interconnects 8 interface modules (A1/A2 and power supply terminals)* | | | | | |
| *- Connection of up to 8 interface modules to PLC outputs via 14-pole ribbon cable* | | | | | |
| **09368141** | adaptor | 24 VDC | | Master**ADAPTOR** easy connection of up to 8 interface modules | **579.60** |
| **09300020** | cable | 14-pole | | PLC cable with 14-pole ribbon connector on end 2 meters | **890.40** |
| **46392/PS** | marking | 6 x 12 mm | | sheet of 48 marking tags *(mounts onto retain clip)* | **95.55** |

## 38 series - Relay interface module *(1 pole 16A / 2-pole 8A)* *(H) 90 x (W) 14 x (D)77 mm*

- Sensitive DC coil or AC/DC coil versions
- Integral coil indication and protection circuit
- Easy ejection of relay using retaining clip
- DIN rail mounting (EN 60715)

| type | switch current | supply voltage | switching voltage | contact | type terminal | description | price |
|---|---|---|---|---|---|---|---|
| **Electromechanical relays** | | | | | | | |
| **380170240050*** | 16A | 24 VDC | 250 / 400 VAC | 1 ch/over | screw | relay interface module | **384.30** |
| **380100240060*** | 16A | 24 VAC/DC | 250 / 400 VAC | 1 ch/over | screw | relay interface module | **490.35** |
| **380102400060*** | 16A | 240 VAC | 250 / 400 VAC | 1 ch/over | screw | relay interface module | **526.05** |
| * *Currents > 10A, contact terminals must be connected in parallel* | | | | | | | |
| **385170240050** | 6A | 24 VDC | 250 / 400 VAC | 1 ch/over | screw | slim interface module | **280.35** |
| **385270120050** | 8A | 12 VDC | 250 / 400 VAC | 2 ch/over | screw | relay interface module | **390.60** |
| **385270240050** | 8A | 24 VDC | 250 / 400 VAC | 2 ch/over | screw | relay interface module | **390.60** |
| **385200240060** | 8A | 24 VAC/DC | 250 / 400 VAC | 2 ch/over | screw | relay interface module | **500.85** |
| **385202400060** | 8A | 230 VAC | 250 / 400 VAC | 2 ch/over | screw | relay interface module | **535.50** |
| **Solid state relays** | | | | | | | |
| **383170249024** | 5A | 24 VDC | 1.5...24 VDC | 1 NO | screw | relay interface module | **753.90** |
| **383170248240** | 3A | 24 VDC | 12...275 VAC | 1 NO | screw | relay interface module | **732.90** |
| **09308** | 8-way | blue | plug-in | | | jumper link/bridge bar for interfaces | **70.35** |

## ElectroDev - 4/8 way relay interface modules

- Incorporates LED relay status indication and diode protected coils
- Option of positive or negative common modules

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **4304 series** *relay interface module 4-way* *(H) 90 x (W) 54 x (D) 30 mm (with relays)* | | | | | | | |
| • 4-way DIN rail mounting relay interface module *(43 series relay 10A)* | | | | | | | |
| **43049024+** | 10A | 24 VDC | up to 400V | ch/over | 4 way | fixed relay interface | **598.50** |
| **43049024-** | 10A | 24 VDC | up to 400V | ch/over | 4 way | fixed relay interface | **540.75** |
| **34 series** *relay interface module 8-way* *(H) 90 x (W) 54 x (D) 45 mm (with relays)* | | | | | | | |
| • 8-way DIN rail mounting relay interface module *(34 series relay 6A)* | | | | | | | |
| **34089024+** | 6A | 24 VDC | up to 400V | ch/over | 8 way | fixed relay interface | **1 365.00** |
| **34089024-** | 6A | 24 VDC | up to 400V | ch/over | 8 way | fixed relay interface | **1 239.00** |
| **4004 series** *relay interface module 4-way* *(H) 76 x (W) 71 x (D) 55 mm (with relays)* | | | | | | | |
| • 4-way DIN rail mounting relay interface module *(40 series relay 10A)* | | | | | | | |
| **40049024+** | 10A | 24 VDC | up to 400V | ch/over | 4 way | fixed relay interface | **924.00** |
| **40048230-** | 10A | 230 VAC | up to 400V | ch/over | 4 way | fixed relay interface | **916.65** |

***Note:*** (-) *denotes negative common and* (+) *positive common*

Pump Control

Office Lighting Control

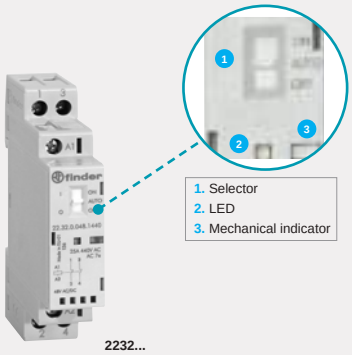
Hotel room energy- enabling units

## Modular contactors 25A

- Modular DIN rail mount
- Auto - On - Off selector
- Continuous duty coils and contacts
- AC/DC silent coil *(with varistor protection)*
- Mechanical flag and LED indicators as standard
- Clip-on auxiliary contact module available *(1NO+1NC or 2NO)*
- Protective separation *(reinforced insulation)* between coil and contacts

**General applications:**

- Pump control
- Office lighting control
- Garden and night lighting
- Bathrooms lighting control
- Streetlights and car park lighting
- Hotel room energy enabling units




2232...

| type | rated power AC-1 (A) | rated power AC-3 kW (230V) | description | modules width in 17.5 mm | contact configuration | coil voltage AC/DC | price |
|---|---|---|---|---|---|---|---|
| **22 series - Two-pole modular contactor** | | | 25A | | (H) 89 x (W) 17.5 (D) 61 mm | | |
| • Compact - one module *(17.5 mm wide)* | | | | | | | |
| **223200124340** | 25A | 1.0 kW | modular contactor | 1 | 2 NO | 12V | **718.20** |
| **223200244340** | 25A | 1.0 kW | modular contactor | 1 | 2 NO | 24V | **718.20** |
| **223200484340** | 25A | 1.0 kW | modular contactor | 1 | 2 NO | 48V | **718.20** |
| **223202304340** | 25A | 1.0 kW | modular contactor | 1 | 2 NO | 230V | **718.20** |
| **223200124440** | 25A | 1.0 kW | modular contactor | 1 | 2 NC | 12V | **718.20** |
| **223200244440** | 25A | 1.0 kW | modular contactor | 1 | 2 NC | 24V | **718.20** |
| **223202304440** | 25A | 1.0 kW | modular contactor | 1 | 2 NC | 230V | **718.20** |
| **223200124540** | 25A | 1.0 kW | modular contactor | 1 | 1NO + 1NC | 12V | **718.20** |
| **223200244540** | 25A | 1.0 kW | modular contactor | 1 | 1NO + 1NC | 24V | **718.20** |
| **223200484540** | 25A | 1.0 kW | modular contactor | 1 | 1NO + 1NC | 48V | **718.20** |
| **223202304540** | 25A | 1.0 kW | modular contactor | 1 | 1NO + 1NC | 230V | **718.20** |
| *AC-3 single phase motor rating at 230 VAC* | | | | | | | |



2234...

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **22 series - Four-pole modular contactor** | | | 25A | | (H) 89 x (W) 35 (D) 61 mm | | |
| • Compact - two modules *(35 mm wide)* | | | | | | | |
| **223400124340** | 25A | 4.0 kW | modular contactor | 2 | 4 NO | 12V | **984.90** |
| **223400244340** | 25A | 4.0 kW | modular contactor | 2 | 4 NO | 24V | **984.90** |
| **223402304340** | 25A | 4.0 kW | modular contactor | 2 | 4 NO | 230V | **984.90** |
| **223400124740** | 25A | 4.0 kW | modular contactor | 2 | 3NO + 1NC | 12V | **984.90** |
| **223400244740** | 25A | 4.0 kW | modular contactor | 2 | 3NO + 1NC | 24V | **984.90** |
| **223402304740** | 25A | 4.0 kW | modular contactor | 2 | 3NO + 1NC | 230V | **984.90** |
| **223400124640** | 25A | 4.0 kW | modular contactor | 2 | 2NO + 2NC | 12V | **984.90** |
| **223400244640** | 25A | 4.0 kW | modular contactor | 2 | 2NO + 2NC | 24V | **984.90** |
| **223402304640** | 25A | 4.0 kW | modular contactor | 2 | 2NO + 2NC | 230V | **984.90** |



02235

**Accessories** *for above modular contactors*

| | | | | | | |
|---|---|---|---|---|---|---|
| Clip-on auxiliaries for above contactors *(8.8 mm wide)* | | | | | | contactor |
| **02235** | 6A | clip-on auxiliary contact block | 0.5 | 1NO + 1NC | 2232/4 | **489.30** |
| **02233** | 6A | clip-on auxiliary contact block | 0.5 | 2 NO | 2232/4 | **489.30** |
| **02218** | jumper | bridge bar for 2-pole contactors | 8-way | blue | 2232 | **103.95** |
| **02226** | jumper | bridge bar for 4-pole contactors | 6-way | blue | 2234 | **103.95** |
| **02001** | adaptor | for chassis mounting contactors | 1 | adaptor | 2232 | **7.04** |
| **01101** | adaptor | for chassis mounting contactors | 2 | adaptor | 2234 | **7.67** |
| **02209** | spacer | rail mount heat dissipation | 0.5 | module | 2232/4 | **21.63** |
| **46392/PS** | marking tags *(sheet)* | mounts directly onto contactor | | *(48 pcs)* | 2232/4 | **95.55** |



192100240000

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **19 series - Modular DIN rail mount relay** | | | | | *(H) 84 x (W) 11.2 (D) 57 mm* | | |

Ideally suited for industrial control systems applications to control pumps, blowers or motor groups. Allows automatic control of pumps, blowers, groups of motors or in case of maintenance or failure, forcing the controlled load to "Off" or "On".

- 3 function selector switch
  - Auto: works as a monostable relay
  - Off: relay permanently OFF
  - On: relay permanently ON
- Slimline *(11.2 mm wide)* modular relay
- LED indication - auto-off-on selector
- DIN rail mounting

| | | | | | | |
|---|---|---|---|---|---|---|
| **192100240000** | 10A | slimline | modular relay | 1 changeover | 24 VAC/DC | **789.60** |



Above ZAR prices do not include VAT. E&OE



2603...

## Modular step relays

Allows you to perform up to 6 sequences to achieve maximum flexibility for every application.

**General applications:**

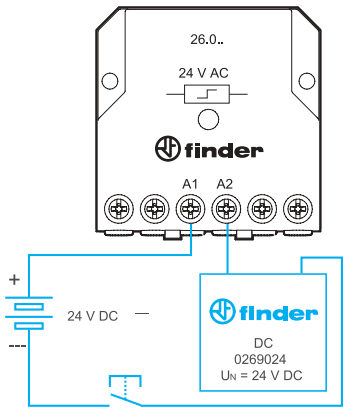
- Bedroom light control
- Living room light control
- Automation for blinds, grilles and shutters
- Lighting control in corridors *(for hotels, offices and hospitals)*

| type | switch current | No. steps | description | contact configuration | coil voltage | price |
|---|---|---|---|---|---|---|
| **26 series - Step relays** | *(pulse "ON", pulse "OFF")* | | *(H) 46,6 x (W) 45 (D) 22 mm* | | | |
| • AC coil<br>• Panel mount<br>• Base/chassis mounting<br>• Screw terminal connections<br>• Maximum pulse duration: 1 hour<br>• Electrically separated coils and contact circuits | | | | | | |
| **260380120000** | 10A | 2 step | base mounting step relay | 1NO+1NC | 12 VAC | **328.65** |
| **260380240000** | 10A | 2 step | base mounting step relay | 1NO+1NC | 24 VAC | **328.65** |
| **260381100000** | 10A | 2 step | base mounting step relay | 1NO+1NC | 110 VAC | **328.65** |
| **260382300000** | 10A | 2 step | base mounting step relay | 1NO+1NC | 230 VAC | **328.65** |
| **0269012** | module for operating 26 series relays with | | | DC supply | 12 VDC | **258.30** |
| **0269024** | module for operating 26 series relays with | | | DC supply | 24 VDC | **258.30** |
| **20 series - Modular step relays** | | | *(H) 84 x (W) 17.5 x (D) 57 mm* | | | |
| • AC and DC coils<br>• Modular DIN rail mounting<br>• Compact one module *(17.5 mm)* wide<br>• Maximum pulse duration: 1 hour<br>• Manual override/test button<br>• Mechanical flag indicators of contact positions | | | | | | |
| **202380120000** | 16A | 2 step | modular pulse step relay | 2 contact | 12 VAC | **534.45** |
| **202380240000** | 16A | 2 step | modular pulse step relay | 2 contact | 24 VAC | **534.45** |
| **202382300000** | 16A | 2 step | modular pulse step relay | 2 contact | 230 VAC | **534.45** |
| **202390120000** | 16A | 2 step | modular pulse step relay | 2 contact | 12 VDC | **534.45** |
| **202390240000** | 16A | 2 step | modular pulse step relay | 2 contact | 24 VDC | **534.45** |
| **202680120000** | 16A | 3 step | modular pulse step relay | 2 contact | 12 VAC | **534.45** |
| **202680240000** | 16A | 3 step | modular pulse step relay | 2 contact | 24 VAC | **534.45** |
| **202682300000** | 16A | 3 step | modular pulse step relay | 2 contact | 230 VAC | **534.45** |
| **202690120000** | 16A | 3 step | modular pulse step relay | 2 contact | 12 VDC | **534.45** |
| **202690240000** | 16A | 3 step | modular pulse step relay | 2 contact | 24 VDC | **534.45** |
| **202480120000** | 16A | 4 step | modular pulse step relay | 2 contact | 12 VAC | **534.45** |
| **202480240000** | 16A | 4 step | modular pulse step relay | 2 contact | 24 VAC | **534.45** |
| **202482300000** | 16A | 4 step | modular pulse step relay | 2 contact | 230 VAC | **534.45** |
| **202490120000** | 16A | 4 step | modular pulse step relay | 2 contact | 12 VDC | **534.45** |
| **202490240000** | 16A | 4 step | modular pulse step relay | 2 contact | 24 VDC | **534.45** |
| **202880120000** | 16A | 4 step | modular pulse step relay | 2 contact | 12 VAC | **534.45** |
| **202880240000** | 16A | 4 step | modular pulse step relay | 2 contact | 24 VAC | **534.45** |
| **202882300000** | 16A | 4 step | modular pulse step relay | 2 contact | 230 VAC | **534.45** |
| **202890120000** | 16A | 4 step | modular pulse step relay | 2 contact | 12 VDC | **534.45** |
| **202890240000** | 16A | 4 step | modular pulse step relay | 2 contact | 24 VDC | **534.45** |



2023...

### Modular **step relay**




**20 series** Sequence Table

| Type | No of steps | Sequence 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 20.23 | 2 | | | | |
| 20.26 | 3 | | | | |
| 20.24 | 4 | | | | |
| 20.28 | 4 | | | | |

## Okpac® SO series power relays

All **Celduc SSRs** *(Solid State Relays)* are fitted with back-to-back thyristors and employ 4th generation TMS² technology with a very long lifetime expectancy.

- Very high immunity according to IEC/EN 61000-4-4 *(bursts)* and IEC/EN 61000-4-5 *(spikes)*
- UL/cUL, VDE (EN 60950), IEC/EN 60947-4-3, CE marking
- Regulated input current
- EMC compatible for industrial environment
- Control status LED

***Note:*** All current ratings are based on utilising SSRs with suitable heat sink.
Consult product datasheet for inductive applications (motors - AC53)


SO942460

### SO9 series — *for resistive loads (AC-51) - heating* — *(H) 58.5 x (W) 45 x (D) 30 mm*

- Zero-cross switching specifically designed for resistive loads
- Input overvoltage protection

| type | thyristor rating | switching voltage | peak voltage | control voltage | I²t | description | price |
|---|---|---|---|---|---|---|---|
| **SO941460** | 12A | 12 - 280 VAC | 600V | 3 - 32 VDC | 128A²s | solid state relay | **510.30** |
| **SO942460** | 25A | 12 - 280 VAC | 600V | 3 - 32 VDC | 600A²s | solid state relay | **618.45** |
| **SO943460** | 40A | 12 - 280 VAC | 600V | 3 - 32 VDC | 1250A²s | solid state relay | **698.25** |
| **SO945460** | 50A | 12 - 280 VAC | 600V | 3 - 32 VDC | 2800A²s | solid state relay | **731.85** |
| **SO965460** | 60A | 24 - 600 VAC | 1200V | 3.5 -32 VDC | 2800A²s | solid state relay | **833.70** |
| **SO967460** | 90A | 24 - 600 VAC | 1200V | 3.5 - 32 VDC | 7200A²s | solid state relay | **1 113.00** |


SO867070

### SO8 series — *for most load types - lamps and infrared* — *(H) 58.5 x (W) 45 x (D) 30 mm*

- Zero-cross switching with low zero-crossing level (<12V) for most loads
- Voltage protection on input *(transil)* and output (VDR)

**DC control**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **SO842074** | 25A | 12 - 275 VAC | 600V | 3 - 32 VDC | 600A²s | solid state relay | **851.55** |
| **SO845070** | 50A | 12 - 275 VAC | 600V | 3 - 32 VDC | 2800A²s | solid state relay | **1 020.60** |
| **SO865070** | 50A | 24 - 510 VAC | 1200V | 3.5 - 32 VDC | 2800A²s | solid state relay | **1 218.00** |
| **SO867070** | 75A | 24 - 510 VAC | 1200V | 3.5 - 32 VDC | 7200A²s | solid state relay | **1 753.50** |
| **SO868070** | 95A | 24 - 510 VAC | 1200V | 3.5 - 32 VDC | 16200A²s | solid state relay | **2 404.50** |
| **SO869070** | 125A | 24 - 510 VAC | 1200V | 3.5 - 32 VDC | 22000A²s | solid state relay | **3 181.50** |

**AC control**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **SO842974** | 25A | 12 - 275 VAC | 600V | 20 - 265 VAC/DC | 600A²s | solid state relay | **851.55** |
| **SO865970** | 50A | 24 - 510 VAC | 1200V | 20 - 265 VAC/DC | 2800A²s | solid state relay | **1 344.00** |
| **SO867970** | 75A | 24 - 510 VAC | 1200V | 20 - 265 VAC/DC | 7200A²s | solid state relay | **2 079.00** |
| **SO868970** | 95A | 24 - 510 VAC | 1200V | 20 - 265 VAC/DC | 16200A²s | solid state relay | **2 520.00** |
| **SO869970** | 125A | 24 - 510 VAC | 1200V | 20 - 265 VAC/DC | 22000A²s | solid state relay | **3 276.00** |


SO765090

### SO7 series — *suitable for (AC-53) inductive loads and phase angle control applications*

- Random switching solid state relay designed for high inductive loads, motors (AC-53)
- Large control voltage range 3.5-32 VDC with input current limiter
- Over-Voltage protection on input *(transil)* and output (RC and VDR)

**DC control** (AC51)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **SO765090** | 50A | 24 - 510 VAC | 1200V | 3.5 - 32 VDC | 2800A²s | solid state relay | **1 753.50** |
| **SO767090** | 75A | 24 - 510 VAC | 1200V | 3.5 - 32 VDC | 7200A²s | solid state relay | **2 457.00** |
| **SO768090** | 95A | 24 - 510 VAC | 1200V | 3.5 - 32 VDC | 16200A²s | solid state relay | **2 730.00** |

### SOB series — *two phase SSRs*

- Dual zero cross solid state relay with LED indication for each input
- Plug-in control terminals *(connector to be ordered separately)*

**SOB9** *designed for resistive loads*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **SOB965660** | 2 x 50A | 24 - 600 VAC | 1200V | 10 - 30 VDC | 2500A²s | solid state relay | **3 265.50** |
| **1Y042715** | | | plug-in input screw terminal for above dual phase relay | | | | **135.45** |

### Accessories — *for above SO series relays*


WF151200

| type | thermal rating | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|
| **Heatsinks** | | *SSR current ratings are based on sufficient cooling by the use of heatsinks* | | | | |
| **WF151200** | 2.2K/W | DIN rail mountable heatsink for SO series relays | 80 | 45 | 73 | **487.20** |
| **WF108110** | 1.1K/W | DIN rail mountable heatsink for SO series relays | 98 | 90 | 81 | **702.45** |
| **WF115100** | 0.9K/W | DIN rail mountable heatsink for SO series relays | 90 | 110 | 100 | **2 194.50** |
| **5TH23000** | pads | thermal transfer pads for mounting SO solid state relays onto heat sinks | | | | **15.86** |
| **1LD12020** | adaptor | adaptor for direct mounting of SO relays on DIN rail | | | | **147.00** |



Above ZAR prices do not include VAT. E&OE



SU963460



SU865070



ESUC0450



WF311100

## Celpac® SU series power relays *(Pluggable control terminals)*

All **Celduc SSRs** *(Solid State Relays)* are fitted with back-to-back thyristors and employ 4th generation TMS² technology with a very long life expectancy.

- Cost-effective, reliable and compact solution *(22.5 mm pitch SSR solution)*
- Mounting configuration compatible with all standard hockey puck style relays
- Over-voltage protection on input *(transil)*
- IP20 terminal protection cover *(removable)*
- Control status LED indication

***Note:*** Current ratings are based on utilising SSRs with suitable heat sink.
Consult product datasheet for inductive applications (motors - AC53)

| type | thyristor rating | switching voltage | peak voltage | control voltage | I²t | description | price |
|---|---|---|---|---|---|---|---|
| **SU9 series** | *for resistive loads (AC-51) - heating* | | | | *(H) 90 x (W) 22.5 x (D) 42 mm* | | |
| • Zero-cross switching specifically designed for resistive loads | | | | | | | |
| **SU942460** | 25A | 12 - 280 VAC | 600V | 3 - 32 VDC | 600A²s | solid state relay | **636.30** |
| **SU963460** | 35A | 24 - 600 VAC | 1200V | 3.5 - 32 VDC | 882A²s | solid state relay | **804.30** |
| **SU965460** | 50A | 24 - 600 VAC | 1200V | 3.5 - 32 VDC | 1680A²s | solid state relay | **859.95** |
| **SU967460** | 75A | 24 - 600 VAC | 1200V | 3.5 - 32 VDC | 7200A²s | solid state relay | **1 144.50** |
| **SU8 series** | *for most load types - lamps and infrared* | | | | *(H) 90 x (W) 22.5 x (D) 42 mm* | | |
| • Zero-cross switching with low zero-crossing level (<12V) for most loads | | | | | | | |
| **DC control** | | | | | | | |
| **SU842070** | 25A | 12 - 275 VAC | 600V | 3 - 32 VDC | 600A²s | solid state relay | **877.80** |
| **SU865070** | 50A | 24 - 510 VAC | 1200V | 3.5 - 32 VDC | 1680A²s | solid state relay | **1 260.00** |
| **SU867070** | 75A | 24 - 510 VAC | 1200V | 3.5 - 32 VDC | 7200A²s | solid state relay | **1 774.50** |
| **AC control** | | | | | | | |
| **SU842970** | 25A | 12 - 275 VAC | 600V | 160 - 240 VAC | 600A²s | solid state relay | **867.30** |
| **SU865970** | 50A | 24 - 510 VAC | 1200V | 160 - 240 VAC | 1680A²s | solid state relay | **1 354.50** |

### Accessories for SU series SSRs

**ESUC** **current monitoring module for SU range**

Mounted directly onto SU or SUL devices, this module provides diagnostic information for up to 5 heating elements in parallel.

| | | | |
|---|---|---|---|
| **ESUC0450** | 2 - 40A | 8 - 30 VDC | current monitoring module | **2 866.50** |

**Heatsinks** *SSR current ratings are based on sufficient cooling by the use of heatsinks*

| type | thermal rating | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|
| **WF311100** | 3.0 K/W | DIN rail mountable heatsink for SU series relays | 80 | 22.5 | 73 | **664.65** |
| **WF151200** | 2.2 K/W | DIN rail mountable heatsink for SU series relays | 80 | 45 | 73 | **487.20** |
| **WF112100** | 1 K/W | DIN rail mountable heatsink for SU series relays | 120 | 50 | 118 | **758.10** |
| **5TH24000** | pads | thermal transfer pads for mounting SU relays onto heatsinks | | | | **20.48** |

**SSR + Heatsink complete unit** *ready for use*

| type | thyristor rating | switching current 25°C | switching voltage | peak voltage | I²t | control voltage | price |
|---|---|---|---|---|---|---|---|
| **SUL9 range** | *for resistive loads (AC-51) - heating* | | | | *(H) 90 x (W) 22.5 x (D) 112 mm* | | |
| **SUL942460** | 25A | 23A | 12 - 280 VAC | 600V | 600A²s | 3 - 32 VDC | **1 501.50** |
| **SUL 8 range** | *- for most load types - lamps and infrared* | | | | *(H) 90 x (W) 22.5 x (D) 112 mm* | | |
| **DC control** | | | | | | | |
| **SUL842070** | 25A | 23A | 12 - 275 VAC | 600V | 600A²s | 3 - 32 VDC | **1 942.50** |
| **AC control** | *(H) 90 x (W) 22.5 x (D) 112 mm* | | | | | | |
| **SUL842970** | 25A | 23A | 12 - 275 VAC | 600V | 600A²s | 160 - 240 VAC | **867.30** |
| **SUL865970** | 50A | 32A | 24 - 510 VAC | 1200V | 1680A²s | 160 - 240 VAC | **1 354.50** |

### Fuse protection of solid state relays

**Type 2 coordination:** In case of short circuit the protection device must react before damaging the SSR, rendering the SSR suitable for further use.

*Ultra-fast fuses must be used to protect solid state relays against short-circuits of the load.*
*The I²t value of the fuse must be less than half of the typical I²t value of the solid state relay.*


SO465420


SOM040200


SCI0251700


WF151200

| type | thyristor rating | switching voltage | peak voltage | control voltage | description | price |
|---|---|---|---|---|---|---|
| **SO4 series - Proportional controllers** | | | | | *(H) 58.5 x (W) 45 x (D) 30 mm* | |
| • Control status LED<br>• Overvoltage protection by varistor<br>• IP20 protection cover *(removeable)*<br>• 4-20mA / 0-10V / Potentiometer control<br>• Analog switching SSR for resistive load power control *(phase angle principle)* | | | | | | |
| **4-20mA control current input** | | | | | | |
| **SO465420** | 50A | 200 - 480 VAC | – | 4-20mA | proportional output SSR | **2 845.50** |
| **SO467420** | 75A | 200 - 480 VAC | – | 4-20mA | proportional output SSR | **3 265.50** |
| **SO468420** | 95A | 200 - 480 VAC | – | 4-20mA | proportional output SSR | **3 654.00** |
| **SO469420** | 125A | 200 - 480 VAC | – | 4-20mA | proportional output SSR | **4 410.00** |
| **0-10V Analog input** | | | | | | |
| • Control supply voltage 8 - 30 VDC | | | | | | |
| **SO465020** | 50A | 200 - 480 VAC | – | 0-10V | proportional output SSR | **3 129.00** |
| **SO468020** | 95A | 200 - 480 VAC | – | 0-10V | proportional output SSR | **3 990.00** |
| **SO469020** | 125A | 200 - 480 VAC | – | 0-10V | proportional output SSR | **4 798.50** |
| **Potentiometer analog input** | | | | | | |
| • Control supply voltage 8 - 30 VDC | | | | | | |
| **SO465320** | 50A | 200 - 480 VAC | – | resistance | proportional output SSR | **3 129.00** |
| **SOM series - Latest MOSFET technology generation** | | | | | *(H) 58.5 x (W) 45 x (D) 30 mm* | |
| • MOSFET technology<br>• Ultra low on-state resistance<br>• Built-in overvoltage protection<br>• DC solid state relays DC-in, DC-out<br>• Low output leakage current and control current<br>• Designed to switch DC loads e.g solenoid valves, brakes, indicators | | | | | | |
| **SOM020100** | 20A | 5 - 60 VDC | 100V | 3.5 - 32 VDC | DC output solid state relay | **1 438.50** |
| **SOM040200** | 40A | 5 - 110 VDC | 200V | 3.5 - 32 VDC | DC output solid state relay | **1 932.00** |
| **IGBT technology** for high DC voltage applications | | | | | | |
| **SCI series** - Integrated reverse diode | | | | | *(H) 58.2 x (W) 45 x (D) 27 mm* | |
| • Ultra low output leakage current<br>• Low control current consumption<br>• Low conducted and radiated disturbances<br>• Latest high voltage IGBT technology generation<br>• Triggered control input to avoid linear control risks<br>• New innovative isolated driver ensures fast power transistor turn on and off ensuring low power transient | | | | | | |
| **SCI0251700** | 25A | 0 - 1700 VDC | 1700V | 4.5 - 32 VDC | DC output solid state relay | **28 350.00** |
| **SCI0501200** | 50A | 0 - 1200 VDC | 1200V | 4.5 - 32 VDC | DC output solid state relay | **15 120.00** |
| **SCI0100600** | 100A | 0 - 600 VDC | 600V | 4.5 - 32 VDC | DC output solid state relay | **15 120.00** |
| **SDI series** - Integrated protection | | | | | *(H) 157 x (W) 68 x (D) 83 mm* | |
| • Overvoltage protection<br>• Load short circuit protection<br>• Overload temperature protection | | | | | | |
| **SDI0501700** | 50A | 24 - 940 VDC | 1700V | 24 - 48 VDC | DC output solid state relay | **46 620.00** |
| **SDI0501710** | 50A | 24 - 940 VDC | 1700V | 72- 110 VDC | DC output solid state relay | **46 620.00** |

**Accessories** for above solid state relays

| type | thermal rating | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|
| **Heatsinks** | *SSR current ratings are based on sufficient cooling by the use of heatsinks* | | | | | |
| **WF151200** | 2.2K/W | rail mountable heatsink for SO,SC series relays | 80 | 45 | 72 | **487.20** |
| **WF108110** | 1.1K/W | rail mountable heatsink for SO,SC series relays | 98 | 90 | 78 | **702.45** |
| **WF115100** | 0.9K/W | rail mountable heatsink for SO,SC series relays | 90 | 110 | 100 | **2 194.50** |
| **5TH23000** | pads | thermal transfer pads for SO,SC solid state relays | | | | **15.86** |
| **1LD12020** | adaptor | adaptor for mounting heat sinks on DIN rail | | | | **147.00** |



Above ZAR prices do not include VAT. E&OE


SMB8650510


SMT8620520


SGB8850200


SGT8670500

## Three-phase solid state relays

All three-phase solid state relays incorporate new high efficiency back to back thyristors on output with TMS² technology for a long lifetime expectancy and high surge currents.

- Three-phase Zero Cross solid state relays
- Control status LED
- Conforms to: IEC/EN 60947-4-3, CEI 62314, UL-cUL

***Note:*** Current ratings are based on utilising SSRs with suitable heat sink.
Consult product datasheet for inductive applications (motors - AC53)

| type | max. thyristor rating | switching current AC-51 (40°C) | switching voltage | peak voltage | control voltage | $I^2t$ | price |
|---|---|---|---|---|---|---|---|
| **Sightpac series** - Three-phase solid state relays | | | | | | *(H) 100 x (W) 45 x (D) 48 mm* | |
| **SMB series - Two leg Three-phase solid state relay** *(New compact - 45 mm wide version)* | | | | | | | |
| Designed for controlling three-phase loads connected in star or delta *(if balanced)* Two of the Three-phases are switched by the SSR the third phase being directly connected | | | | | | | |
| • Three-phase Zero Cross solid state relay with one direct connected phase • Designed for resistive loads | | | | | | | |
| **SMB8650510** | 2 x 50A | 3 x 30A | 24 - 520 VAC | 1600V | 4 - 30 VDC | 2800A²s | **3 622.50** |
| **SMB8670910** | 2 x 75A | 3 x 35A | 150 - 520 VAC | 1600V | 4 - 30 VDC | 7200A²s | **4 536.00** |
| **SMT series - Three-phase solid state relay** - for controlling three-wire three-phase loads | | | | | | | |
| • Three-phase Zero Cross solid state relay (SSR) designed for most load types • Plug-in control terminals and spring clamp power terminals | | | | | | | |
| **SMT8620520** | 3 x 25A | 3 x 20A | 24 - 520 VAC | 1200V | 4 - 30 VDC | 380A²s | **2 667.00** |
| **SMT8628520** | 3 x 25A | 3 x 20A | 24 - 520 VAC | 1200V | 24 - 255 VAC/DC | 380A²s | **2 688.00** |
| **Cel3pac series** - Three-phase solid state relays | | | | | | *(H) 100 x (W) 76.5 x (D) 35.5 mm* | |
| **SGB series - Two leg Three-phase solid state relays** | | | | | | | |
| Designed for controlling three-phase loads connected in star or delta *(if balanced)* Two of the Three-phases are switched by the SSR with the third being directly connected | | | | | | | |
| • Three-phase Zero Cross solid state relay with one direct connected phase • Designed for resistive loads | | | | | | | |
| **SGB8850200** | 2 x 50A | 3 x 50A | 24 - 640 VAC | 1600V | 4 - 30 VDC | 2800A²s | **3 286.50** |
| **SGB8890200** | 2 x 125A | 3 x 85A | 24 - 640 VAC | 1600V | 4 - 30 VDC | 22000A²s | **5 344.50** |
| **SGT series -** Three-phase solid state relays - for controlling three-wire three-phase loads | | | | | | | |
| **SGT9 series - Zero Cross for resistive loads** (AC-51) | | | | | | | |
| **SGT9834300** | 3 x 35A | 3 x 30A | 24 - 660 VAC | 1600V | 4 - 30 VDC | 1250A²s | **3 297.00** |
| **SGT9854300** | 3 x 50A | 3 x 42A | 24 - 660 VAC | 1600V | 4 - 30 VDC | 2800A²s | **3 181.50** |
| **SGT9874300** | 3 x 75A | 3 x 54A | 24- 660 VAC | 1600V | 4 - 30 VDC | 7200A²s | **3 769.50** |
| **SGT8 series - Zero Cross for most load types** | | | | | | | |
| **DC control** | | | | | | | |
| **SGT8850200** | 3 x 50A | 3 x 42A | 24 - 640 VAC | 1600V | 4 - 30 VDC | 2800A²s | **4 021.50** |
| **SGT8670500** | 3 x 75A | 3 x 54A | 24 - 520 VAC | 1600V | 4 - 30 VDC | 7200A²s | **4 494.00** |
| **SGT8690500** | 3 x 125A | 3 x 64A | 24 - 520 VAC | 1600V | 4 - 30 VDC | 22000A²s | **7 591.50** |
| **AC control** | | | | | | | |
| **SGT8658500** | 3 x 50A | 3 x 42A | 24 - 520 VAC | 1600V | 24 - 255 VAC/DC | 2800A²s | **4 032.00** |
| **SGT8678500** | 3 x 75A | 3 x 54A | 24 - 520 VAC | 1600V | 24 - 255 VAC/DC | 7200A²s | **4 536.00** |
| **SGT8698500** | 3 x 125A | 3 x 64A | 24 - 520 VAC | 1600V | 24 - 255 VAC/DC | 22000A²s | **6 247.50** |
| **SGTA series - Three-phase proportional controllers** | | | | | | *(H) 75 x (W) 100 x (D) 46 mm* | |
| • Control supply voltage 8 - 30 VDC | | | | | | | |
| **4-20mA control current input** | | | | | | | |
| **SGTA4654** | 3 x 50A | | 300 - 510 VAC | 4 - 20mA | proportional output SSR | | **10 321.50** |
| **0-10V analog input** | | | | | | | |
| **SGTA4650** | 3 x 50A | | 300 - 510 VAC | 0 - 10V | proportional output SSR | | **10 080.00** |

| **Accessories** for above Three-phase series relays | | | | | | |
|---|---|---|---|---|---|---|
| type | thermal rating | description | dimensions (mm) (H) | (W) | (D) | price |
| **Heatsinks** | *SSR current ratings are based on sufficient cooling by the use of heatsinks* | | | | | |
| **WF108110** | 1.1 K/W | rail mountable heatsink for SM series relays | 98 | 90 | 78 | **702.45** |
| **WF115100** | 0.9 K/W | rail mountable heatsink for SM, SG, series relays | 90 | 110 | 100 | **2 194.50** |
| **1K199000** | cover | transparent terminal cover for relays SGB and SGT | | | | **123.90** |


TMP


TMM1



TMM1NFC


TMPL


TMST

## Modular timing devices

- Wide range of functions and time scales
- High accuracy and repeatability of the time settings
- Green LED indicator for power on
- Red LED indicator for relay state; flashing for delay and steady when relay energized
- Multi-time range: 1s/10s/60s/10m/60m/10h/1day/10days/ON or OFF
- Excellent time accuracy and stability
- Compact robust DIN rail mounting modular housing *(one 17.5 mm wide module)*
- 1 x changeover relay 8A 250 VAC

| type | description | supply voltage | price |
|---|---|---|---|
| **On-delay timer - delay-on make** | *(relay switches after preset time elapses)* | | |
| | • Multi-time range: 1s/10s/60s/10m/60m/10h/1day/10days/ON or OFF<br>• Multi-voltage: 24...48 VDC / 24...240 VAC | | |
| **TMP** | multi-time range, multi-voltage, on-delay modular electronic timer | | **917.70** |
| **Multi-function timer** | *(several selectable timing functions in one module)* | | |
| | • Multi-voltage: 12...240 VAC/DC<br>• Multi-function: Selectable functions:<br>A On-delay *(relay only switches after preset time lapse)*<br>B Interval *(relay switches for preset time when energised)*<br>C Equal repeat *(start with OFF time first)*<br>D Equal repeat *(start with ON time first)*<br>E Pulsed controlled interval *(relay switches on close of external contact timing only begins on opening of contact)*<br>F Pulsed controlled Interval *(timing begins on closing of external contact)*<br>G Pulsed controlled Interval *(timing begins on opening of external contact)*<br>H Pulse cont. On-delay/Interval *(timing begins on opening and closing of external contact)*<br>I Step relay *(relay changes state on each closure of external contact)*<br>J Pulse generator *(unequal repeat adjustable OFF time/fixed 0.5 sec ON time)* | | |
| **TMM1** | multi-time range, multi-voltage, multi-function modular elect. timer | 12 - 240 VAC/DC | **1 134.00** |
| **NFC programmability Multi-function timer** *(without front adjustable knob)* | | | |
| | • 40 selectable functions<br>• Counter and hour counter included<br>• Simple, fast and intuitive programming<br>• Very high accuracy and repeatability of settings<br>• Programmable via smartphone or tablet with NFC technology and APP<br>• Access to settings can be protected by setting a 4-digit password via the App<br>• Programming via NFC ensures excellent accuracy in time settings and tripping thresholds | | |
| **TMM1NFC** | multi-time range, multi-voltage, multi-func. mod. elect. timer (NFC) | 12 - 240 VAC/DC | **1 134.00** |
| **Unequal repeat timer** | *(separately adjustable ON and OFF times)* | | |
| | Programmable time relay with a asymmetrical recycle time, with independent timing adjustment for ON and OFF times. Multi-time range and multi-voltage.<br>• Multi-time range: 1s/10s/60s/10m/60m/10h/1day/10days/30 days/100days<br>• Multi-voltage: 12...240 VAC/DC | | |
| **TMPL** | multi-time, multi-voltage, modular unequal repeat electronic timer | 12 - 240 VAC/DC | **1 743.00** |
| **Delay-on de-energisation timer** | | | |
| | Electronic time relay. True off delay - relay energises on applying supply and remains energised *(for pre-set time period)* after supply is removed and then resets.<br>• Relay remains energised for preset time after removal of supply<br>• Selectable time ranges: 0.6s/6s/60s/180s *(adjustable)*<br>• Multi-voltage: 24...240 VAC/DC | | |
| **TMD** | multi-time, multi-voltage, delay-on de-energisation elect. timer | 24 - 240 VAC/DC | **2 194.50** |
| **Star-delta timer** | *(star connection delay and adjustable transition delay)* | | |
| | Electronic time relay for starting star-delta, impedance, auto transformer starters etc.<br>Adjustable "star" time delay where after a 20…300ms "transition" delay before "delta" is energised<br>• Selectable time ranges: 1s/10s/60s/10min - transition: 20...300ms *(adjustable)* | | |
| **TMST** | multi-time, multi-voltage, mod. star-delta elect. timer | 24 - 48 VDC / 24 - 240 VAC | **1 081.50** |
| **TMSTA440** | multi-time, multi-voltage, modular star-delta elect. timer | 380 - 440 VAC | **1 081.50** |

Scan to watch video



Above ZAR prices do not include VAT. E&OE


PMV10A440


PMV55A240



PMV95NA575NFC


PMA30240


PMA50...

| type | description | monitored voltage | width in 17.5 mm | price |
|---|---|---|---|---|
| **Voltage monitoring modular relays** | | | | |
| • Modular DIN rail mounting *(aligns with standard MCBs)* | | | | |
| • True RMS measurements | | | | |
| **Phase failure / reversal relay** *instantaneous trip* | | | | |
| **PMV10A440** | phase failure / reversal relay | 208 - 480 VAC L-L | 1 | **956.55** |
| **PMV20A575** | phase failure / reversal relay | 208 - 575 VAC L-L | 2 | **1 239.00** |
| **Voltage monitors** | | *single-phase or three-phase* | | |
| • Voltage monitoring relays, self powered, for minimum and maximum voltage | | | | |
| • Adjustments | - “V max” maximum voltage tripping threshold | 105 - 115% Ue | | |
| | - "V min" minimum voltage tripping threshold | 80 - 95% Ue | | |
| | - “tripping" and “reset” time delay | 0.1 - 20sec | | |
| **Single-phase monitoring** | | | | |
| **PMV55A240** | single-phase over/under voltage monitor | 208 - 240 VAC | 2 | **2 320.50** |
| **Three-phase monitoring** *(without neutral)* | | | | |
| • Self powered, for minimum and maximum voltage, phase loss and incorrect phase sequence | | | | |
| **PMV50A575** | 3-phase over/under voltage monitor | 380 - 575 VAC L-L | 2 | **2 268.00** |
| **Three-phase monitoring** *(with or without neutral)* | | self powered | | |
| • For minimum and maximum voltage, phase loss, neutral loss and incorrect phase sequence | | | | |
| **PMV50NA440** | minimum and maximum AC voltage | 380 - 440 VAC L-L | 3 | **3 265.50** |
| **PMV50NA600** | minimum and maximum AC voltage | 480 - 600 VAC L-L | 3 | **4 494.00** |
| **NFC programmability Three-phase monitoring** *(same functionality as above unit )* | | | | |
| Multifunction voltage and frequency monitoring relay, self powered, for minimum and maximum voltage and frequency, phase loss, neutral loss, incorrect phase sequence and asymmetry. | | | | |
| • Without front adjustment knobs | | | | |
| • Programmable via smartphone or tablet with NFC technology and APP | | | | |
| • Simple, fast and intuitive programming *(password protected)* | | | | |
| • Very high accuracy and repeatability of settings | | | | |
| **PMV95NA575NFC** | multi-func. voltage and frequency relay (NFC) | 380 - 575 VAC L-L | 2 | **2 310.00** |
| **Current monitoring relays** | | *(TRMS measurements)* | | |
| Single and three-phase, AC/DC minimum or maximum current control with delayed trip. Auxiliary AC/DC power supply, automatic or manual reset. | | | | |
| • AC/DC minimum or maximum current control with programmable delayed trip | | | | |
| • Multi-voltage auxiliary power supply 24...240 VAC/DC | | | | |
| • Direct connection up to 16A or by current transformer (CT) 5A secondary | | | | |
| • Automatic or manual reset | | | | |
| • Adjustments | - maximum or minimum current tripping threshold | 5 - 100% Ie | | |
| | - maximum or minimum hysteresis threshold | 1 - 50% | | |
| | - “trip” delay *(selectable)* | 0.1 - 30sec | | |
| | - “inhibition” time - external input or power up | 1 - 60sec | | |
| | - current scale selection: | 5A or 16A | | |
| | - tripping memory *(latch)* | On or Off | | |
| **PMA30240** | minimum or maximum current monitor | 24 - 240 VAC/DC | 2 | **2 478.00** |
| **Pump protection relay** | | *single and three-phase systems (selectable)* | | |
| Maximum AC current and minimum cosφ. Delayed trip. Phase loss and incorrect sequence. Instantaneous trip *(automatic or manual reset)* | | | | |
| • Pump protection relay against dry running, auxiliary AC power supply | | | | |
| • Maximum AC current and minimum cosφ *(delayed trip)* | | | | |
| • Direct connection up to 16A or by current transformer (CT) 5A secondary | | | | |
| • Phase loss and incorrect phase sequence *(instantaneous trip)* | | | | |
| • Voltage control range 80...660 VAC | | | | |
| • Adjustments | - “minimum” cosφ threshold *(underload/dry running)* | 0.1 - 0.99 | | |
| | - "maximum" *(over)* current threshold | 10 - 100% Ie | | |
| | - “trip” delay for min cosφ and max current | 0.1 - 10sec | | |
| | - “inhibition” time - external input or power up | 1 - 60sec | | |
| | - automatic reset time | Off - 100min | | |
| | - current selection: | 5A or 16A | | |
| **PMA50A240** | pump protection relay *(against dry running)* | 220 - 240 VAC | 3 | **4 252.50** |
| **PMA50A415** | pump protection relay *(against dry running)* | 380 - 415 VAC | 3 | **4 252.50** |




Tank filling and well drawing with alarm

**LVM series - Level control relays**

- Level monitoring for conductive liquids
- Modular DIN rail mounting *(aligns with standard MCB's)*
- Double insulation between supply, electrodes and output relay

**General applications:**

- Adjustable sensitivity for water level control applications eg. wastewater ( 6...8k), rain or condensed water (15...25k)
- Probe signal detection circuit for applications where the electrode cables are significantly long and the liquid to control is highly resistive i.e. low conductivity (LVM40)
- Fail-safe operation for pump control applications by use of N/O contact for both emptying and filling functions avoiding false activations
- Time delay circuit for starting mainly used to avoids frequent pump startings



LVM20A240



LVM25240



LVM40...



SN1



LVMP10A240

| type | description | supply voltage | width in 18 mm | price |
|---|---|---|---|---|
| **LVM20** | *single voltage level control relay* | | | |
| | • Three detecting probes *(Min, Max and Com)*<br>• Emptying function *(automatic reset)*<br>• Adjustable sensitivity (2.5...50kΩ)<br>• Relay outputs: 1 x changeover (SPDT) | | | |
| **LVM20A240** | liquid level control relay for "emptying" function | 220 - 240 VAC | 2 | **1 092.00** |
| **LVM20A415** | liquid level control relay for "emptying" function | 380 - 415 VAC | 2 | **1 092.00** |
| **LVM25** | *multi-voltage supply 24...240 VAC/DC* | | | |
| | • Slimline one module *(18 mm)* wide<br>• Relay outputs: 1 x changeover (SPDT)<br>• Adjustments – sensitivity (2.5...100kΩ)<br>• Selectable – "emptying" *(or)* "filling" function *(with fail safe operation)* | | | |
| **LVM25240** | multi-voltage liquid level control relay | 24 - 240 VAC/DC | 1 | **1 554.00** |
| **LVM30** | *dual-voltage supply delay start level control relay* | | | |
| | • Relay outputs: 2 x changeover (SPDT)<br>• Adjustments – probe signal delay 1-10sec / pump start delay 0-300sec<br>• Selectable – "emptying" (or) "filling" function *(with fail safe operation)* | | | |
| **LVM30A240** | dual-voltage liquid level control relay | 24/220-240 VAC | 3 | **1 816.50** |
| **LVM30A415** | dual-voltage liquid level control relay | 110-127/380-415 VAC | 3 | **1 816.50** |
| **LVM40** | *Multifunction level control relay* | | | |
| | • Adjustments - sensitivity (2.5...200kΩ) *(separate adj for Max electrodes for foam detection)*<br>- probe signal delay 1-10s / pump start delay 0-30min<br>• Relay outputs: 1 x changeover (SPDT)<br>• Detecting probes: Five detecting probes (Min1, Max1, Min2, Max2 and Com)<br>• Selectable 5 different functions:<br>(A) standard emptying function and alarms<br>(B) standard filling function and alarms<br>(C) emptying function with priority start-up change control<br>(D) filling function with priority start-up change control<br>(E) well draining and tank filling and alarms | | | |
| **LVM40A240** | 5 probe multi-function liquid level control relay | 220 - 240 VAC | 3 | **2 730.00** |
| **LVM40A415** | 5 probe multi-function liquid level control relay | 380 - 415 VAC | 3 | **2 730.00** |
| **Level electrodes and holders for conductive liquids** | | | | |
| **SN1** | 1-pole insulated electrode *(AISI 303 stainless steel)* for LVM relays | | | **195.30** |
| **PS3S** | electrode holder for 3 rod probes/electrodes | | | **200.55** |
| **P1000S** | electrodes for above PS3S holder | *(1 meter length)* | | **95.55** |
| **FS03-3P** | electrode spacer disc | *(for extending probe length)* | | **38.85** |
| **PXL** | electrode extension locknut | *(for extending probe length)* | | **36.65** |
| **Pump start-up priority change relay** | | | | |
| | To balance operation times, hence wear of two pumps, compressors, generators when two units *(primary and standby)* are installed.<br>• Outputs: 2 x NO (SPST)<br>• Multi-voltage: 24/48 VDC / 2...240 VAC | | | |
| **LVMP05** | pump priority change relay | 24 - 48 VDC / 24 - 240 VAC | 1 | **1 186.50** |
| **LVMP10A240** | pump priority change relay with 4 I\O | 220 - 240 VAC | 3 | **1 816.50** |



Above ZAR prices do not include VAT. E&OE

## LVFS series - Float switches

Float switches for automation of electrical equipment - pumps, solenoid valves, alarms, motorised sluice gates etc. They feature an internal changeover contact operated in accordance with the level of liquid where the float is located. Cables used are high-quality and offer excellent mechanical and chemical resistance over time.

- Relay with changeover contact 10A 250 VAC 50/60Hz
- Compliant with standards: TUV, IEC/EN 60730-1, IEC/EN 60730-2-15

Scan to watch video



LVFSP1W05

| type | activation angle | cable length | supplied with counterweight | max. pressure | description | price |
|---|---|---|---|---|---|---|
| **For grey water** | | | | **IP68** | | |
| Used for civil and industrial control of grey water levels, e.g. rainwater, groundwater, or cooling water from industry.<br>• PVC cable<br>• The MIN and MAX levels can be adjusted by varying the distance between counterweight and float<br>• Changeover contact permits selection of filling and emptying function during regulator wiring | | | | | | |
| **LVFSP1W05** | 30° | 5 meter | yes | 2 bar | float level switch for grey water | **568.05** |
| **LVFSP1W10** | 30° | 10 meter | yes | 2 bar | float level switch for grey water | **788.55** |
| **LVFSP1W15** | 30° | 15 meter | yes | 2 bar | float level switch for grey water | **1 081.50** |
| **For drinking water** | | | | **IP68** | | |
| These float switches are suitable for drinking water and foodstuff applications such as aqueducts, fountains, aquariums, drinks, fish hatcheries, swimming pools, etc. Realised with a non-toxic polypropylene outer shell, a stainless steel untreated sphere, and an AD8 cable with health certification ACS *(Attestation de Conformité Sanitaire)* outer sheath in PVC suitable for drinkable water immersion and use with food products.<br>• PVC cable ACS + AD8 certified<br>• Provided with stainless steel counterweight (AISI 316)<br>• The MIN and MAX levels can be adjusted by varying the distance between counterweight and float<br>• Changeover contact permits selection of filling and/or emptying function during regulator wiring | | | | | | |
| **LVFSA1D05** | 30° | 5 meter | yes (AISI 316) | 2 bar | float level switch for drinking water | **1 795.50** |
| **LVFSA1D10** | 30° | 10 meter | yes (AISI 316) | 2 bar | float level switch for drinking water | **2 362.50** |
| **LVFSA1D15** | 30° | 15 meter | yes (AISI 316) | 2 bar | float level switch for drinking water | **3 087.00** |
| **For dirty water** | | | | **IP68** | | |
| For civil and industrial control of dirty water levels, e.g. sewage or waste water from industry. Made of one-piece blow-moulded external polypropylene casing, with fixed internal counterweight located in the cable exit area. The regulator contact is positioned centrally in its own watertight chamber, insulated from external casing by injected closed-cell foam.<br>• Level control usually performed using two float switches, one for MIN. and another for MAX. levels<br>• Cable H07 RN-F3X1 *(Neoprene)* | | | | | | |
| **LVFSN1B05** | 30° | 5 meter | yes *(internal)* | 10 bar | float level switch for dirty water | **2 173.50** |
| **LVFSN1B10** | 30° | 10 meter | yes *(internal)* | 10 bar | float level switch for dirty water | **2 709.00** |
| **LVFSN1B15** | 30° | 15 meter | yes *(internal)* | 10 bar | float level switch for dirty water | **3 234.00** |



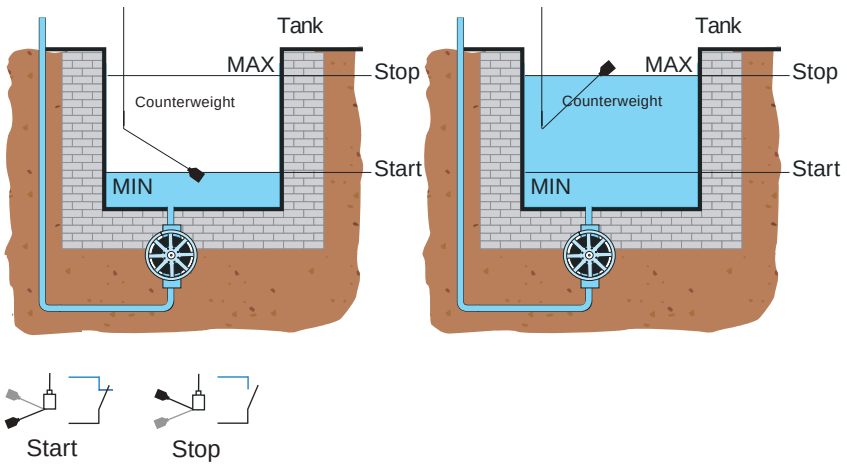
LVFSA1D10



LVFSN1B05

**Example: Filling function for LVFS series**

The level regulator contact closes the lower circuit at minimum level and opens the circuit when the float reaches the upper maximum/minimum level.



ENERGY COMFORT SAVINGS

## 10 series - Daylight switches

Light dependant relays for automatic control of external lighting according to ambient light level.

- Adjustable sensitivity: 1…80 lux
- Built-in time delay: *(ON - 15 sec / OFF - 30 sec)*
- Ambient range: -30…+70°C



104182300000



| type | switch current | contact config. | supply voltage | lux setting | delay ON/OFF | description | price |
|---|---|---|---|---|---|---|---|
| **10 series - Daylight switches** | | | | **IP54** | | | |
| **10.41 – Light dependant relays** *(daylight switches)* | | | | | | *(H) 111 x (W) 59 x (D) 40 mm* | |
| • LED indication of relay status<br>• Wall or pole mounting *(brackets supplied)* | | | | | | | |
| **104182300000** | 16A | 1 NO | 230 VAC | 1...80 lux | 15/30s | standard daylight switch | **1 134.00** |
| **10.42 – 2 independent outputs with individual lux settings** | | | | | | | |
| **104282300000** | 16A | 2x 1 NO | 230 VAC | 2x 1...80 | 15/30s | 2 circuit daylight switch | **1 417.50** |
| **10.51 – Miniature light dependant relays** *(daylight switches)* | | | | | | *(H) 81 x (W) 37 x (D) 37 mm* | |
| • LED indication of relay status<br>• Wall or pole mounting *(brackets supplied)* | | | | | | | |
| **105182300000** | 12A | 1 NO | 230 VAC | 1...80 lux | 15/30s | mini daylight switch | **1 006.95** |
| **10.61 – Hole mount** *(Ø 18 mm)* | | | | | | *(H) 48 x (Ø) 81* | |
| • Can be mounted directly on street light body | | | | | | | |
| **106182300000** | 16A | 1 NO | 230 VAC | *(fixed)* 10 | 15/30s | hole mount daylight switch | **735.00** |



105182300000

## 11 series - Daylight switches with separate light sensor

Light dependant relays for automatic control of external lighting according to ambient light level - with separate light sensor.

- Modular DIN rail mounting *(same cutout as standard MCBs)*
- Selectable: std range 1…80lux / high range 30…1000lux / permanent ON or OFF
- LED indication of relay status

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **11.31 series - 17.5 mm wide** | | | | | | *(H) 89 x (W) 17.5 x (D) 61 mm* | |
| **113182300000** | 16A | 1 NO | 230 VAC | 1…100 | 15/30s | modular daylight switch | **1 102.50** |
| **113100240000** | 16A | 1 NO | 12/24 VAC/DC | 1…100 | 15/30s | modular daylight switch | **1 333.50** |
| **11.42 series - 2 independent outputs with individual lux settings** | | | | | | *(H) 89 x (W) 35 x (D) 61 mm* | |
| **114282300000** | 12A | 2x 1 NO | 230 VAC | 2x 1-1000 | 15/30s | 2 circuit daylight switch | **2 184.00** |
| **Light sensors for 11 series modular light dependant relays** | | | | | | | |
| **01102** | sensor | IP54 | surface | | | mount light sensor for 11 series modular relays | **284.55** |
| **Flush mount light sensor** *(mounts through 15/18 mm Ø hole)* **for modular relays** | | | | | | | |
| **01103** | sensor | IP66/67 | flush | | | mount light sensor for 11 series modular relays | **511.35** |



1131...



01103

## Modular time switches NFC programmable *(with smartphone)* *(H) 89 x (W) 35 x (D) 61 mm*

Finder digital time switches incorporate easy to use NFC *(Near Field Communication)* for fast, flexible programming of time via a smartphone, can also be performed via the front mounted joystick control

- Versions with 1 or 2 contacts - 16A
- 110…230 VAC/DC supply
- Internal battery *(easily replaceable)* for set-up and programming without supply voltage
- Wide backlit display for easy programming and visualisation

| type | time range | contact config. | reserve | min. setting | description | price |
|---|---|---|---|---|---|---|
| **Digital** *(analogue-style)* **time switch** | | | | | easily configurable for daily or weekly programming | |
| **125182300000** | 24hr/7 day | 1 CO | yes | 30 min. | digital time switch | **1 911.00** |
| **Digital time switch with programmable pulse output** *(for school bell lunch/tea/interval ringing)* | | | | | | |
| • Manual override facility<br>• Pulse output adjustable *(1 sec...59 min)*<br>• Holiday program | | | | | | |
| **126182300000** | 7 day | 1 CO | yes | 1 min. | digital time switch with pulse output | **2 278.50** |
| **Astro time switches** *(calculates sunrise/sunset according to longitude/latitude coordinates)* | | | | | | |
| • Astro program: calculation of sunrise and sunset times through date, time, location coordinates<br>• Programmable offset from Astronomic times *(up to 90 min)* *(H) 89 x (W) 35 x (D) 57 mm* | | | | | | |
| **12A182300000** | 7 day | 1 CO | yes | 1 min. | astro programmable time switch | **2 467.50** |
| **12A282300000** | 7 day | 2 CO | yes | 1 min. | astro programmable time switch | **2 950.50** |




126182300000



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Basic &
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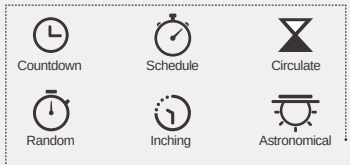
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Software Training






RS-WIFI 2

*Smart Life

*Downloadable via the Play Store or App store

## WiFi smart switch

The RS-WIFI smart switch is a programmable switch/timer, easily programmable via a smart phone using WiFi or Bluetooth. Simply download the Smart Life app for use with Android or iPhone.

The smart switch can easily be programmed as a:

**Switch:** Remotely controlled ON/OFF switch *(phone indication of switch status)*
**Timer:** Permits a countdown timing function of the connected device
**Time switch:** Daily, weekly programs/cycles down to second pulses *(using inching mode)*
Also with astronomical function to calculate sunrise and sunset times based on geographic positioning *(longitudinal and latitudinal location)* and time zone, thus avoiding the need for external daylight switches and sensors

- Front facia override button *(external pulse terminal also provided)*
- Output contacts: 1 NO - 16A / AC1
- Compact dimensions: 1 module *(18 mm wide)* DIN rail mounting
- Connection: WiFi and Bluetooth connection available

| type | supply voltage | output relay | description | width in 18 mm | price |
|---|---|---|---|---|---|
| **RS-WIFI 2** | 24 - 240 VAC/DC | 1 x NO | modular WiFi smart switch | 1 | **525.00** |
| **RS-WIFI 12** | 12 - 24 VAC/DC | 1 x NO | modular WiFi smart switch | 1 | **588.00** |



RS-TA14

## Electronic timing devices

### Time relays

- Micro controller based
- Electrical life: $10^5$
- Mechanical life: $10^6$
- Output contacts: 1 C/O 8A / AC1
- LED indication: “Power” and “Relay” status
- Housing: Self-extinguishing material UL94-V-0
- Dimensions: 1 module *(18 mm wide)* DIN rail mounting

### Multi-voltage, multi-range timer

- Rep accuracy: <0.2%
- Supply voltage: Multi-voltage - AC/DC 12...240V
- Time ranges: Multi-range - 1s / 10s / 1m / 10m / 1h / 10h / 1day/ 10days / ON / OFF

**ON-Delay timer**

| | | | | | |
|---|---|---|---|---|---|
| **RS-TA14** | 12 - 240 VAC/DC | 1 x C/O | ON-delay modular timer | 1 | **391.65** |

**Interval (OFF-delay) timer**

| | | | | | |
|---|---|---|---|---|---|
| **RS-TB14** | 12 - 240 VAC/DC | 1 x C/O | interval (OFF-delay) modular timer | 1 | **391.65** |



RS-TM14

**Multi-function, multi-voltage, multi-range timer** (10 functions)

- ON-delay
- OFF-delay
- Flasher OFF first
- Flasher ON first
- Delay impulse generation (0.5s)
- OFF-delay on impulse *(rising edge)*
- OFF-delay on impulse *(falling edge)*
- Switch ON/OFF delay
- Latching relay
- Time impulse released by rising edge with switch OFF-delay

- Time ranges: Multi-range - 1s / 10s / 1m / 10m / 1h / 10h / 1d / 10d / ON / OFF

| | | | | | |
|---|---|---|---|---|---|
| **RS-TM14** | 12 - 240 VAC/DC | 1 x C/O | multi-function modular timer | 1 | **472.50** |

### Asymmetric cycler timer - Multi-range

- Unequal repeat timer with separate adjustment of ON and OFF times
- Can be configured for ON or OFF time first
- Cycler beginning with pulse or pause *(selectable)*
- Output contacts: 2 C/O 8A / AC1
- Time ranges: Multi-range - 1s / 10s / 1m / 10m / 1h / 10h / 1d / 10d / 30d / 100days

| | | | | | |
|---|---|---|---|---|---|
| **RS-TC23** | 24 - 240 VAC/DC | 2 x C/O | asymmetric cycler modular timer | 1 | **588.00** |



RS-TT13

### Delay on de-energisation *(true OFF-delay without power supply)*

Relay energises on applying supply and remains energised for a preset time period after supply has been removed.

- Output contacts: 1 C/O 8A / AC1
- Time ranges: 0.1-1s / 1s-10s / 0.1m-1m / 1m-10m *(selectable)*

| | | | | | |
|---|---|---|---|---|---|
| **RS-TT13** | 24 - 240 VAC/DC | 1 x C/O | delay on de-energisation timer | 1 | **746.55** |



Above ZAR prices do not include VAT. E&OE


RD-TPD1

## Digital time switches

Used for programming time functions for various applications such as lighting control, heating, household appliances, shop windows and many other devices.

The pulse program can be used for school or factory bell ringing. An internal battery maintains clock time and all program settings in the event of power failure.

- Compact dimensions: 2 module *(36 mm wide)* DIN rail mounting
- Number of programs: 52 programs
- Programs: Weekly, daily and pulse
- Operating modes: Manual, automatic, holiday
- Contact rating: 16A / 250V AC1
- Standards: EN/IEC60730-1, EN/IEC60730-2-7

| type | supply voltage | time range | min. setting | power reserve | description | width in 18 mm | price |
|---|---|---|---|---|---|---|---|
| **Digital time switches** | | | | | | | |
| **Single channel digital weekly time switch** | | | | | | | |
| • 52 programs<br>• Automatic transfer of weekdays<br>• Holiday mode<br>• LCD display<br>• 1 changeover contact<br>• Sealable front cover, easy setting via 4 frontal buttons | | | | | | | |
| **RD-TPD1** | 220 - 240 VAC | 7 day | 1 sec | 3 year | digital time switch | 2 | **391.65** |
| **Dual channel digital weekly time switch** | | | | | | | |
| • 90 programs<br>• Back-lit LCD display<br>• 2 changeover contacts<br>• 10 year power reserve *(lithium battery)*<br>• Double channel *(each channel programmable independently)* | | | | | | | |
| **RD-TPD2** | 24 - 264 VAC/DC | 7 day | 1 sec | 10 year | digital time switch | 2 | **746.55** |


RD-TPD2

## Digital astronomical time switches

**RD-TPA** series astronomical time switches calculate sunrise and sunset times based on geographic positioning *(longitudinal and latitudinal location)* and time zone. Thus avoiding the need for external daylight switches and sensors.

- Contact rating: 16A / 250V AC1
- Operating modes: Manual, automatic, holiday
- Standards: EN/IEC60730-1, EN/IEC60730-2-7
- Compact dimensions: 2 module *(36 mm wide)* DIN rail mounting
- Program: Astronomical program *(for sunrise and sunset calculation)*

| type | supply voltage | time range | min. setting | power reserve | description | width in 18 mm | price |
|---|---|---|---|---|---|---|---|
| **Single channel digital astronomical time switch** | | | | | | | |
| • LCD display<br>• 1 changeover contact<br>• Sealable front cover, easy setting via 4 frontal buttons | | | | | | | |
| **RD-TPA1** | 220 - 240 VAC | 7 day | – | 3 year | astronomical time switch | 2 | **438.90** |
| **Dual channel digital weekly time switch** | | | | | | | |
| • Back-lit LCD display<br>• 2 changeover contacts<br>• 10 year power reserve *(lithium battery)*<br>• Double channel *(each channel programmable independently)* | | | | | | | |
| **RD-TPA2** | 24 - 264 VAC/DC | 7 day | – | 10 year | astronomical time switch | 2 | **764.40** |


RD-TPA2

## Staircase timer

The staircase timer provides a pre-determined ON time to operate a light or group of lights for illumination of a staircase, corridor, passageway, bathroom etc.

On receiving a pulsed input, the unit operates a contact *(switching lights on)* for a predetermined time period, where after it switches off until the next pulse

- 1 NO - 16A contact AC1
- 1 module DIN-rail mounting
- Possibility of 3 or 4 wire connection
- Preselect time range 0.5...20 minutes
- LED indication of “Power” and “Relay”status
- ON - AUTO - OFF slide switch on facia of timer *(manual override)*

| type | supply voltage | time range | min. setting | power reserve | description | width in 18 mm | price |
|---|---|---|---|---|---|---|---|
| **RS-TSL** | 220 - 240 VAC | 20 min | 1 min | – | modular staircase timer | 1 | **354.90** |


RS-TSL

## Voltage monitoring devices


RS-MV13

- 1 CO 8A /AC1
- Micro-processor based
- 1 module DIN-rail mounting
- Supply voltage monitoring *(True RMS measurement)*
- Threshold voltage and trip delay independently adjustable

| type | overvoltage setting (V) | undervoltage setting (V) | trip delay (s) | description | width in 18 mm | price |
|---|---|---|---|---|---|---|
| **Single-phase voltage monitor** | | | | | | |
| The **RS-MV13** relay monitors its supply voltage. If the monitored voltage exceeds the preset overvoltage or undervoltage settings, the relay trips until the voltage returns to within the preset levels. An adjustable *(0.1...10sec)* trip delay is also incorporated. | | | | | | |
| • Microcontroller based<br>• Auto reset<br>• LED indication of control state | | | | | | |
| **RS-MV13** | 225 - 275V | 1\65 - 215V | 0.1…10s | single-phase voltage monitor | 1 | **466.20** |
| **Three-phase voltage monitor** | | | | | | |
| • Microcontroller based<br>• 1NO + 1NC output 8A<br>• True RMS measurement<br>• LED indication of “supply” and “output” state<br>• N phase failure protection in 3 phase 4 wire setting | | | | | | |
| **Phase failure/reversal relay** | | | | | | |
| Monitors supply, ensuring all phases *(+ Neutral in 4 wire system)* are present and in correct sequence. **RS-MV32M** additionally monitors phase asymmetry/imbalance *(fixed at 8%)* | | | | | | |
| **RS-MV31M** | – | – | | phase failure/phase reversal relay | 1 | **420.00** |
| **RS-MV32M** | – | | | under/over voltage monitor relay | 1 | **448.35** |


RS-MV31M

### Under/Over voltage monitor + phase failure/reversal relay

**RS-MV34M** relay monitors its 3 phase supply. If the monitored voltage exceeds the preset overvoltage or undervoltage settings the relay trips until voltage returns to within preset levels.

**RS-MV36M** additionally monitors phase failure and phase sequence *(reversal)* and will only reset once monitored voltage is within the preset level and all phases *(including Neutral in 4 wire setting)* are present and in sequence. An adjustable *(0.1...10sec)* trip delay is also incorporated.

Select - 3 phase 3 wire *(or)* 3 phase 4 wire and voltage selectable via facia:

| **Modes** | **3 PH 3 wire** | **3 PH 4 wire** | *(selectable)* |
|---|---|---|---|
| Supply Terminals | L1,L2,L3 | L1,L2,L3,N | *(selectable)* |
| Supply voltage | 380/400/415V | 220/230/240V | |
| Operating voltage range | 266...540V | 154-312V | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **RS-MV34M** | (105-125%) xUn | (75-95%) xUn | 0.1…10s | under/over voltage monitor | 1 | **540.75** |
| **RS-MV36M** | (105-125%) xUn | (75-95%) xUn | 0.1…10s | U/O volt+PH failure/reversal monitor | 1 | **653.10** |


RS-MV36M

## Current monitoring relay

**RS-MI*A** monitors a preset overcurrent or **RS-MI*B** undercurrent. If monitored current exceeds *(or)* falls below preset level the relay trips after completion of a preset trip delay, and only resets once current is within the preset limits. An adjustable *(1-6sec)* start-up delay is also incorporated.

**General features:**

- 1 C/O output - 8A AC1
- 1 module DIN-rail mounting
- Adjustable trip and start-up delay
- Adjustable current actuation threshold
- Can be used in conjunction with Current Transformers (CT’s) up to 600A
- Hysteresis - 5% current setting value
- Rated insulation voltage - 250 VAC
- Measurement frequency 45-65Hz


RS-MI5A

**Current monitor -** overcurrent

| | | | | | | |
|---|---|---|---|---|---|---|
| **RS-MI5A** | 0.5-5A | – | 0.5…10s | modular overcurrent monitor | 1 | **588.00** |
| **RS-MI10A** | 1-10A | – | 0.5…10s | modular overcurrent monitor | 1 | **588.00** |

**Current monitor -** undercurrent

| | | | | | | |
|---|---|---|---|---|---|---|
| **RS-MI5B** | – | 0.5-5A | 0.5…10s | modular undercurrent monitor | 1 | **588.00** |



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RS-LC3


SNL1

## Liquid level control relays

RS-LC liquid level relay monitors conductive liquid levels using electrodes to provide level status. When level reaches upper level, the relay disconnects the pump until the level reaches the lower level whereupon the relay re-energises switching the pump on.

**RS-LC3** permits selection for "filling" or "draining" application and adjustable *(0.5...10s)* trip delay.

- Microprocessor based
- Adjustable sensitivity 5kΩ...100kΩ
- Operates with 2 or 3 electrodes
- Selectable "draining" or "filling" function ***(RS-LC3)***
- 1 module DIN-rail mounting

| type | supply voltage | sensitivity adjustment | trip delay | description | width in 18 mm | price |
|---|---|---|---|---|---|---|
| **Liquid level relays** | | | | | | |
| **RS-LC1** | 24 - 240 VAC/DC | 5~100kΩ | 2s *(fixed)* | modular liquid level relay | 1 | **513.45** |
| **With adjustable trip delay and "filling" or "draining" selector** | | | | | | |
| **RS-LC3** | 24 - 240 VAC/DC | 5~100kΩ | 0.5-10s | modular liquid level relay | 1 | **606.90** |
| **Accessories for liquid level relays** | | | | | | |
| **SNL1** | – | stainless steel Aisi 316 electrodes for liquid level relays | | | *(ea)* | **75.60** |


TS-01


RD-ST1

## Twilight *(daylight)* switches

### Surface or pole mounting *(IP54)*

- 16A/250 VAC AC1
- Sensitivity adjustment 2 to 200 lux
- LED indication for calibration point

| | | | | | | |
|---|---|---|---|---|---|---|
| **TS-01** | 230 VAC | – | | surface/pole mounting day/night switch | – | **354.90** |

### Modular daylight switch *(2 module DIN-rail mount)*

- 25A/250 V AC1
- Sensitivity adjustment 2 to 100 lux
- External light sensor *(included with switch) 1m*
- Fixed switching delay - ON (2...5s) and OFF (10...15s) delay

| | | | | | | |
|---|---|---|---|---|---|---|
| **RD-ST1** | 230 VAC | | | modular day/night switch with external sensor | 2 | **354.90** |

## Electro: Relay interface module - Slimline *(IP20)*

The CF41 series relay interface module *(slimline)* is a cost effective solution for interfacing to PLCs and automation controllers. They provide an ultra-slim solution *(6.2 mm wide)* with high current switching (6A...250VAC).

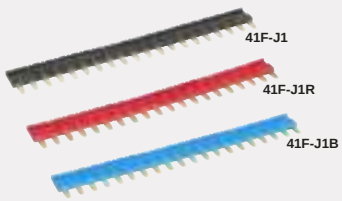
- Slimline (6.2 mm) (H) 88.3 x (W) 6.3 x (D) 72.4 mm
- DIN-rail mounting - screw terminal
- Integrated LED indication and protection circuit
- Integrated retaining clip/relay ejector *(for ease of relay removal)*
- Provision for fitting pluggable jumper bars *(reducing wiring time)*

| | |
|---|---|
| Rated current: | 6A...250 VAC / 30 VDC |
| Rated AC1 load: | 1500VA |
| Maximum switching voltage: | 400 VAC / 125 VDC |
| Approvals: | VDE (40020043), UL (E133481) |
| Dielectric strength | - Coil and contacts 4kV *(1 min)* |
| | - Open contacts 1kV *(1 min)* |


C41F-1Z-C2-1

| type | supply voltage | contact | description | terminal type | price |
|---|---|---|---|---|---|
| **C41F-1Z-C2-1** | 24V AC/DC | 1 CO (SPDT) | DIN-rail mount relay interface module | screw | **168.00** |

### Accessories for above relay interface


41F-J1
41F-J1R
41F-J1B

| type | colour | No. ways | description | | price |
|---|---|---|---|---|---|
| **41F-J1** | black | 20 way | jumper link *(bridge bar)* for relay interface | – | **33.71** |
| **41F-J1R** | red | 20 way | jumper link *(bridge bar)* for relay interface | – | **33.71** |
| **41F-J1B** | blue | 20 way | jumper link *(bridge bar)* for relay interface | – | **33.71** |
| **Adaptor** *(8 way) - interconnects 8 interface modules to PLC outputs via 14-pole ribbon cable* | | | | | |
| **AR-8P** | black | 8 way | interconnect adaptor for relay modules | – | **111.30** |

## Modular electronic timer


261018


261022


270272


270282

| type | description | supply voltage | price |
|---|---|---|---|
| **Multi-range - Multi-function - Multi-voltage, modular timer** | | | |
| | • Output contact: 1 C/O 5A 250 VAC<br>• Operating temp: -20...+60°C<br>• Supply frequency: 35 - 70 Hz<br>• Multi- time range: Seconds: 1/10/100, Minutes: 1/10, Hours 1/10/100, Days 1/10<br>• Multi-voltage: 24…300 VAC/DC<br>• Multi-function:<br>On-delay *(on energising, relay only switches after preset time period)*<br>Interval (off-delay) *(on energising, relay switches for preset time then resets)*<br>On/off delay *(on energising, relay remains OFF for preset off-time, then switches ON for preset on-time, then resets)*<br>Equal repeat (off) *(equal repeating starting with preset OFF time first)*<br>Equal repeat (on) *(equal repeating starting with preset ON time first)* | | |
| **T1-M5 Multi-Range/Function/Voltage electronic timer** *(IP20)* *(width: 17.5 mm)* | • Modular DIN rail mounting - *(H) 90.4 x (W) 17.5 x (D) 66.5 mm (aligns with standard 1 pole MCB)* | | |
| **261018** | multi-range, multi-function, multi-voltage modular electronic timer | 24 - 300 VAC/DC | **806.40** |
| **T1-K Multi-function modular timer** *(pulse controlled)* | As above T1-M5 also with pulse control of functions *(via external contact)* configurable with interval on rising or falling edge triggering as well as on-delay with memory | | |
| **261019** | multi-range/function/voltage modular timer with pulse control | 24 - 300 VAC/DC | **878.85** |
| **SD1 Star-Delta modular timer** *(IP20)* *(width: 17.5 mm)* | Applying supply activates the preset "star" time period where after the preset (20…500msec) transition delay occurs before the "delta" relay is energised, it remains in this position until supply is removed.<br>• Modular DIN rail mounting - *(H) 90.4 x (W) 17.5 x (D) 66.5 mm (aligns with standard 1 pole MCB)*<br>• Multi-voltage: 150...500 VAC<br>• Star time: tλ 1…30 seconds | | |
| **261022** | modular DIN rail mounting electronic star-delta timer | 150 - 500 VAC | **1 042.65** |
| **Liquid level controller** **IP20** *(width: 36 mm)* | LC3 controls levels of conductive liquids by measuring the resistance of the liquid between probes. If measured resistance is less than the preset value, the output relay will be activated. To avoid electrolysis, an AC signal is applied to the liquid<br>• Modular DIN rail mounting - *(H) 90 x (W) 36 x (D) 58 mm (aligns with standard 2-pole MCB)*<br>• Sensitivity adjustment: 5...100kΩ<br>• Time delay: 0.1 - 10 sec | | |
| **270299** | modular DIN rail mounting electronic liquid level controller | 150 - 500 VAC | **853.65** |
| **Protection relays** **IP20** *(width: 17.5 mm)* | • Output contact: 1 C/O 10A 250 VAC<br>Phase-failure/reversal/imbalance M1D-SA<br>• Fixed time delay: 500msec | | |
| **270272** | modular DIN rail mount 3 ph phase failure/reversal/imbalance relay | 380 - 480 ±25% | **995.40** |
| **Voltage monitor with phase-failure/reversal/imbalance** **IP20** *(width: 17.5 mm)* | • Modular DIN rail mounting - *(H) 90.4 x (W) 17.5 x (D) 66.5 mm (aligns with standard 1 pole MCB)*<br>• Adjustable - *(via front facia dials)*<br>Over voltage: +5...+20% with OFF *(override)* selection<br>Under voltage: -5…-20% with OFF *(override)* selection<br>Delay time: 0.1…10sec | | |
| **G1D-SA - 3 phase (L1-L3)** | | | |
| **270283** | modular 3ph over/under voltage monitor with ph failure/reversal | 380 - 480 ±25% | **995.40** |
| **G1-SA - 3 phase + neutral (L3-N)** | | | |
| **270282** | modular 3ph+N over/under voltage monitor + ph failure/reversal | 230 ±25% | **850.50** |
| **Current monitor relay** *36 mm (2 modules wide)* | | | |
| **CPR-16** | Current measurement: 0.1 … 16A AC Hysteresis: 5…20%<br>Time delay adjustment: 0.1 … 10 sec | | |
| **270270** | 0.1…16A modular DIN rail mounting current monitor | 36 - 300 VAC/DC | **1 543.50** |



Above ZAR prices do not include VAT. E&OE



602310



602320



602400




IBR1...

## ASCON series

### Analog signal converters

The Ascon range of signal converters are compact electronic devices which measure input parameters converting them to another signal form continuously.
Converting temperature, voltage and current parameters into V, mV, mA, and RS485 outputs.

- Different inputs and outputs are configurable via front mounted rotary selector dials
- 3 way - 1.5kV RMS Isolation (Input, output and supply electrically isolated from one another)
- Compact modular *(H) 90.4 x (W) 17.5 x (D) 66.5 mm (same dimensions as single pole MCB)*

| type | supply voltage | selectable inputs | | selectable outputs | description | price |
|---|---|---|---|---|---|---|
| **ASCON 311** | | Signal converter *(configurable)* | | | | |
| **602300** | 11 - 30 VDC | 0…60mV | 0…5mA | 0…5V | configurable analog signal converter | **4 746.00** |
| | | 0…100mV | 0…10mA | 5…0V | | |
| | | 0…250mV | 0…20mA | 0…10V | | |
| | | 0…500mV | -5…5mA | 10…0V | | |
| | | 0…1V | -10…10mA | -5…5V | | |
| | | 0…2V | -20…20mA | 0…20mA | | |
| | | 0…2.5V | 4…20mA | 20…0mA | | |
| | | 0…5V | 0…24mA | 4…20mA | | |
| | | 0…10V | 4…24mA | 20…4mA | | |
| | | 0…20V | 0…12mA | -20…20mA | | |
| **ASCON 321** | | PT100 converter *(configurable)* | | | | |
| **602310** | 11 - 30 VDC | PT100 (2,3,4 wire) -150°C…800°C *(configurable)* | | **V/mA** same as Ascon 311 *(above)* | configurable PT100 signal converter | **4 746.00** |
| **ASCON 331** | | Thermocouple converter *(configurable)* | | | | |
| **602320** | 11- 30 VDC | **J:** | -200°C...1200°C | **V/mA** same as Ascon 311 *(above)* | configurable thermocouple signal converter | **4 746.00** |
| | | **K:** | -200°C...1350°C | | | |
| | | **E:** | -200°C… 950°C | | | |
| | | **R:** | -50°C...1750°C | | | |
| | | **S:** | -50°C...1750°C | | | |
| **ASCON 352** | | Signal temperature converter *(with RS485)* | | | | |
| **602400** | 11 - 30 VDC | mV, V, mA | | **RS485** | signal temperature converter to RS485 | **3 979.50** |
| | | PT100 (2,3,4 wire) | | | | |
| | | Thermocouple (J,K,E,R,S) | | | | |

### Voltage and current transducers

Converts voltage and current signals into analog signals for monitoring/managing purposes

- 3 way - 1.5kV RMS Isolation
- Compact modular *(H) 90 x (W) 36 x (D) 57.5 mm (same dimensions as 2-pole MCB)*

| | | | | | |
|---|---|---|---|---|---|
| **VT3-AC** | | TRMS voltage transducer | | | |
| **600111** | 85 - 265 VAC | 0-24/36/54/80/120/170/250/ 400/450/500V AC *(10 ranges)* | **V/mA** same as Ascon 311 *(above)* | TRMS AC voltage transducer | **4 473.00** |
| **600113** | 10 - 36 VDC | | | TRMS AC voltage transducer | **5 334.00** |
| **600115** | 9 - 30 VDC | | | loop powered voltage t/ducer | **4 473.00** |
| **VT3-ACDC-24** | | TRMS voltage transducer | | | |
| **600116** | 10 - 36 VDC | 0-24/54/120/250/450V AC/DC *(10 ranges)* | **V/mA** same as Ascon 311 *(above)* | TRMS AC/DC voltage transducer | **2 373.00** |
| **CT3** | | TRMS current transducer | | | |
| **600110** | 85 - 265 VAC | 0-1/2/3/4/5A AC/DC *(10 ranges)* | **V/mA** same as Ascon 311 *(above)* | TRMS AC current transducer | **4 179.00** |
| **600112** | 10 - 36 VDC | | | TRMS AC current transducer | **2 373.00** |
| **600114** | 9 - 30 VDC | | | loop powered current t/ducer | **4 179.00** |



CTA4100A

**Delta - CTA - Timer / Counter / Tachometer** *(Panel mount 48 x 48 mm²)*

CTA 3-in-1 Timer/Counter/Tachometer is able to receive external input signals and calculate the times of events, frequency and speed. The CTA unit can be applied to batch counting, total counting, length measurement.

- External power supply: 12 VDC ±10%, 100mA *(integrated power supply)*
- Display: Double-line, 6-digit negative transmissive LCD display
- Input signal: Non-voltage input (NPN) / Voltage input (PNP)
- Output 1: Relay: SPST max.250 VAC, 5A + Transistor: NPN open collector
- Output 2: Relay: SPDT max.250 VAC, 5A *(or)* Transistor: NPN open collector
- Easy DIP switch setup:
  - Timer - timing up or down 0.01 sec - 999.999 hours
    on-delay, interval, repeat *(power on, pulse on, pulse off)*
  - Counter - counting up or down 1 or 2 stage, batch, total, dual counting
    *(speed selection: 1/30/200/3k/5k/10k Cps)*
  - Tachometer - measurement in Hz *(can be configured to read RPM)*

| type | description | output 2 | RS-485 | supply | price |
|---|---|---|---|---|---|
| **CTA4100A** | multi-function timer-counter-tachometer | relay | no | 100 - 240 VAC | **1 858.50** |
| **CTA4000A** | multi-function timer-counter-tachometer | transistor | no | 100 - 240 VAC | **1 858.50** |
| **CTA4001A** | multi-function timer-counter-tachometer | transistor | yes | 100 - 240 VAC | **1 963.50** |
| **CTA4100D** | multi-function timer-counter-tachometer | relay | no | 24 VDC | **1 858.50** |
| **CTA4101D** | multi-function timer-counter-tachometer | relay | yes | 24 VDC | **2 026.50** |



L48TP...

**Lovato - Panel mounting timers** *(48 x 48 mm²)* *Changeover relay (5A 250 VAC)*

- Multi-voltage: 24 VAC/DC, 110, 220...240 VAC
- Housing: 8-pin plug-in housing

**On-delay timer - delay-on make** *(relay switches after preset time elapses)*

- Multi-time range, multi-voltage, on-delay panel mount electronic timer

| | | time range | |
|---|---|---|---|
| **L48TPS240** | on-delay multi-range/voltage panel mount electronic timer | 3/12/100/780sec | **843.15** |
| **L48TPM240** | on-delay multi-range/voltage panel mount electronic timer | 3/12/100/780min | **843.15** |

**Two changeover relays** *(one configurable for instantaneous switching)*

- Multi-range, single voltage, on-delay panel mount electronic timer

| | | | |
|---|---|---|---|
| **L48TPBM240** | on-delay multi-time range panel mount electronic timer | 1s/10s/1min/10min | **981.75** |

**Accessories for above L48 series panel mount timers**

| | | | |
|---|---|---|---|
| **ES8CNER** | 8 pin surface/DIN rail mounting relay socket for L48 timers | *(screw terminals)* | **150.15** |
| **P3G08** | 8 pin socket for panel mounting L48 timers *(rear terminals)* | *(screw terminals)* | **50.40** |
| **D-48Y** | flush-mounting bracket for panel mounting above L48 timers | | **34.34** |



S48/704/B6/...

**CDC - Electromechanical timing devices** *(motorised)*

**Multi-range motorised timers 6/60sec - 6/60min - 6/60hrs** *(on one timer)*

**Surface/DIN rail mount motorised timer**

| | | | |
|---|---|---|---|
| **S45/604/B6/02A** | 1x instantaneous + 1x delay multi-range motorised timer | 24 VAC | **4 851.00** |
| **S45/604/B6/11A** | 1x instantaneous + 1x delay multi-range motorised timer | 110 VAC | **4 851.00** |
| **S45/604/B6/22A** | 1x instantaneous + 1x delay multi-range motorised timer | 220 VAC | **4 851.00** |

**Flush/panel mount motorised timer**

| | | | | |
|---|---|---|---|---|
| **S48/704/B6/02A** | 1x inst + 1x delay multi-range motorised timer | p/mount 48 mm² | 24 VAC | **4 578.00** |
| **S48/704/B6/11A** | 1x inst + 1x delay multi-range motorised timer | p/mount 48 mm² | 110 VAC | **4 578.00** |
| **S48/704/B6/22A** | 1x inst + 1x delay multi-range motorised timer | p/mount 48 mm² | 220 VAC | **4 578.00** |
| **1400/704/B6/22A** | 1x inst + 1x delay multi-range motorised timer | p/mount 72 mm² | 220 VAC | **5 197.50** |

**Accessories**

| | | | |
|---|---|---|---|
| **L48P8** | rear connected 8 pin screw terminal socket | for S48/1400 timers | **203.70** |



1400/704/B6/11A

**Finder - Asymmetrical timer** *(up to 300hrs)* *(use **L48P8** for termination)*

| | | | | |
|---|---|---|---|---|
| **889202400000** | 2-pole | panel mount asymmetrical flasher | 240 VAC | **3 139.50** |

**EM - Mechanical clockwork timers - panel mount** *16 A 250 VAC (1NO + 1NC)*

- Mounting by 2 x M4 screws
- Supplied with graduated dial + knob

| type | Amps | contact | time range | description | price |
|---|---|---|---|---|---|
| **XTI2049** | 16A | 1NO + 1NC | 60 min | MI2 mechanical clockwork timer | **1 017.45** |
| **XTI2048** | 16A | 1NO + 1NC | 120 min | MI2 mechanical clockwork timer | **1 017.45** |
| **XTI2045** | 16A | 1NO + 1NC | 12 hour | MI2 mechanical clockwork timer | **1 092.00** |
| **XTI15163*** | 16A | 1NO + 1NC | 24 hour | MI5 mechanical clockwork timer | **1 585.50** |



XTI15163

* *Requires separate supply for 220V internal motor*



Above ZAR prices do not include VAT. E&OE


DOD

**Electro D series - Modular timing devices**

The **Electro "D"** range of control and timing devices are compact modular units for easy introduction into standard panels and/or distribution boards. They mount directly onto DIN rail and align with standard miniature circuit breakers *(MCB's)*.

- Compact DIN rail mounting: *(H) 92 x (W) 36 x (D) 64 mm - (2 modules wide)*

| multi-range (adjustable time ranges) | No. | time ranges |
|---|---|---|
| | 1 | 6 sec |
| | 2 | 60 sec |
| | 3 | 6 min |
| | 4 | 60 min |
| | 5 | 6 hr |
| | 6 | 60 hr |
| | 7 | ON |
| | 8 | OFF |

| multi-function | No. | functions |
|---|---|---|
| | A | on-delay |
| | B | interval |
| | C | equal repeat |
| | D | 0ff delayed *(pulse controlled)* |
| | E | interval *(pulse controlled)* |
| | F | step relay |
| | G | pulse generator |
| | H | on/off delay |

| type | supply voltage* | time range | function | description | price |
|---|---|---|---|---|---|
| **Multi-range/multi-function timers -** *(8 x selectable time ranges / 8 x selectable functions)* | | | | | |
| Multi-function, multi-range timers designed with latest technology includes all commonly used functions and time ranges *(selectable via front mounted dials).* | | | | | |
| **Single voltage version** | | | | | |
| **DMFT012AD** | 12 VAC/DC | selectable via rotary selector on facia of timer **1...8** | selectable via rotary selector on facia of timer **A...H** | multi-range/function timer | **1 092.00** |
| **DMFT110A** | 110 VAC | | | multi-range/function timer | **1 092.00** |
| **DMFT230A** | 230 VAC | | | multi-range/function timer | **1 092.00** |
| **DMFT400A** | 400 VAC | | | multi-range/function timer | **1 092.00** |
| **DMFT024AD** | 24 VAC/DC | | | multi-range/function timer | **1 092.00** |


DSD

**True off delay** *(delay on de-energisation)* **electronic timer**

Multi-range OFF delay *(delay on release)* timer with advanced power back-up circuitry to deliver wide time ranges. The unit must be powered for no less than 30 sec + 30% of set time range.
*(If permanent power is available DMFT timer should be used.)*

- Delay on de-energisation timer *(delay on removal of supply)*

| | | | | | |
|---|---|---|---|---|---|
| **DOD230A** | 230 VAC | **1...4** | off delay | delay on de-energisation timer | **1 048.95** |

**Unequal repeating electronic timer** multi-range (ON/OFF)

Multi-range electronic timer designed with latest technology covers most combinations of ON/OFF time ranges selectable via front mounted dials and DIP switch.

- Asymmetrical recycler with independently adjustable ON and OFF times

| | | | | | |
|---|---|---|---|---|---|
| **DUR110A** | 110 VAC | selectable via selector on facia **1...8** | repeat | multi-range unequal repeat timer | **1 092.00** |
| **DUR230A** | 230 VAC | | repeat | multi-range unequal repeat timer | **1 092.00** |
| **DUR024AD** | 24 VAC/DC | | repeat | multi-range unequal repeat timer | **1 092.00** |

**Star-Delta timer**

Star/Delta timer with adjustable transition delay for starting inductive motors. Applying supply activates a contact for the preset "star" period *(3-60 sec)* the contact disconnects on lapse of this period for the preset transition period *(4-180 ms)* where after the relay switches to the "delta" position until supply is removed.

- Adjustable "star" time: 3-60 sec
- Adjustable "transition" time: 40-180 ms

| | | | | | |
|---|---|---|---|---|---|
| **DSD110A** | 110 VAC | 3-60 sec | star delta | rail mount star-delta timer | **985.95** |
| **DSD230A** | 230 VAC | 3-60 sec | star delta | rail mount star-delta timer | **985.95** |
| **DSD400A** | 400 VAC | 3-60 sec | star delta | rail mount star-delta timer | **985.95** |


DDCT

**Digital counter / timer** *(H) 92 x (W) 54 x (D) 64 mm*

Multi-function four digit preselect impulse counter/timer Setup and ranges can be adjusted with an easy to access and control menu system to make all common functions available.

- 4 digit preselect impulse counter with selectable prescaler, configurable for *(up/down)* counting
- Digital timer with pulse start/stop configurable for *(up/down)* lapse time indication
- 4 time ranges: 1...999.9s / 9999 min

| | | | | | |
|---|---|---|---|---|---|
| **DDCT230A** | 230 VAC | 1s - 9999m | counter/timer | digital rail mount counter / timer | **1 606.50** |

* *Other voltage options available on request*

# Modular digital monitoring devices


DLL4


DPP4


DPF


DVW3

| type | supply voltage* | output | function | description | price |
|---|---|---|---|---|---|
| **Liquid level controllers** | | *(H) 92 x (W) DLL/DLL4 36/54 x (D) 64 mm* | | | |
| Controlling of conductive liquid levels with two/ four probes. | | | | | |
| **3 - probe unit -** *(2 + common)* | | *(H) 92 x (W) 36 x (D) 64 mm* | | | |
| • **Function:** | Emptying/ Filling | | | | |
| **DLL230A** | 230 VAC | 2 probes+com | emptying/ filling | liquid level controllers | **967.05** |
| **DLL400A** | 400 VAC | 2 probes+com | emptying/ filling | liquid level controllers | **967.05** |
| **DLL024AD** | 24 VAC/DC | 2 probes+com | emptying/ filling | liquid level controllers | **967.05** |
| **5 - probe unit -** *(4 + common)* | | *(H) 92 x (W) 54 x (D) 64 mm* | | | |
| • **Function:** | Emptying/filling with alarm, emptying/filling with pump priority, container filling/well draining with alarm, electrode test | | | | |
| **DLL4230A** | 230 VAC | 4 probes+com | emptying/ filling | liquid level controllers | **1 491.00** |
| **DLL4400A** | 400 VAC | 4 probes+com | emptying/ filling | liquid level controllers | **1 491.00** |
| **DLL4024AD** | 24 VAC/DC | 4 probes+com | emptying/ filling | liquid level controllers | **1 491.00** |
| **Radio level controller** | | *(wireless)* | | | |
| • DIN radio receiver - 5 km transmission *(line of sight)* | | | | | |
| • Coin Battery CR2032 for level transmitters *(3 year life span)* | | | | | |
| • Two configurable *(radio connected)* relay outputs | | | | | |
| **ANT 2** | – | – | antenna | one per DWL.. module | **793.80** |
| **Advanced pump protection relay** | | | | | |
| Advance pump protection relay to safeguard borehole pumps against damage. The unit is easily calibrated to monitor all important pump characteristics. | | | | | |
| • Over / under current protection | | | | | |
| • Over / under voltage protection and phase rotation *(on 3 phase units)* | | | | | |
| • Running dry restart delay / over current retires | | | | | |
| **DPP1230A** | 230 VAC | 1 phase | pump protection | pump monitoring relay | **1 281.00** |
| **DPP3400A** | 400 VAC | 3 phase | pump protection | pump monitoring relay | **1 417.50** |
| **DPP4400A** | 400 VAC | 3 phase | pump protection | with adj./function selection | **1 491.00** |
| **Phase failure/reversal relay** | | *(sequence and imbalance)* | | | |
| Phase failure / reversal monitor for Three-phase supply voltage. For protection against phase reversal, and/or phase loss and phase imbalance. | | | | | |
| **DPF1110A** | 110 VAC | 3-phase | phase monitor | phase failure/reversal relay | **869.40** |
| **DPF1400A** | 400 VAC | 3-phase | phase monitor | phase failure/reversal relay | **869.40** |
| **DPF1/K400A*** | 400 VAC | 3-phase | phase monitor | phase failure/reversal relay | **967.05** |
| **DPF1/N400A** | 400 VAC | 3-ph + neutral | phase monitor | phase failure/reversal relay | **967.05** |
| **DPF1525A** | 525 VAC | 3-phase | phase monitor | phase failure/reversal relay | **869.40** |
| **DPF1/K525A*** | 525 VAC | 3-phase | phase monitor | phase failure/reversal relay | **967.05** |
| * *With adjustable parameters* | | | | | |
| **Automatic phase selector** | | | | | |
| Monitors three-phase + neutral and selects the phase most suitable for providing a single-phase 230V 50Hz supply to industrial and domestic installations. | | | | | |
| Ideal for supplying essential uninterrupted single phase supply, preventing unacceptable voltage variations. | | | | | |
| • Automatically selects the optimum phase falling within user define pre-set limits | | | | | |
| **DPS3230A** | 230 VAC | 3-phase | phase selector | automatic phase selector | **1 827.00** |
| **Voltage window comparator + phase failure** | | | | | |
| Monitors supply, ensuring voltage remains within preset over and under limits and that all phases are present and in sequence. | | | | | |
| • Delays : | No delay - startup delay *(10 sec)* - recovery delay *(180 sec)* - reaction delay *(10 sec)* | | | | |
| **DVW1230A** | 230 VAC | 1-phase | comparator | over / under voltage monitor | **1 102.50** |
| **DVW3400A** | 400 VAC | 3-phase | comparator | over / under voltage monitor | **1 113.00** |
| **DVW3N400A** | 400 VAC | 3-ph + neutral | comparator | over / under voltage monitor | **1 102.50** |
| **DVW3525A** | 525 VAC | 3-phase | comparator | over / under voltage monitor | **1 113.00** |
| **Voltage monitor** | | *monitors a separate voltage than supply.* | | | |
| **DVM400A-230A** | 230 VAC | | 400 VAC monitoring | voltage monitor device | **1 042.65** |
| **DVM024D-24A** | 24 VDC | | 400 VAC monitoring | voltage monitor device | **1 102.50** |
| **DVM30MV-30MV** | 10-30 VDC | | 10-30 VDC monitoring | voltage monitor device | **1 102.50** |
| * *Other voltage options available on request* | | | | | |



Above ZAR prices do not include VAT. E&OE

# Modular digital monitoring devices


DCM

The **Electro "D"** range of control and timing devices are compact modular units for easy introduction into standard panels and/or distribution boards. They mount directly onto DIN rail and align with standard miniature circuit breakers *(MCB's)*.

- Compact DIN rail mounting: *(H) 92 x (W) 36 x (D) 64 mm - (2 modules wide)*

| type | supply voltage* | current | interface | description | price |
|---|---|---|---|---|---|
| **Current monitors** | | | *(H) 92 x (W) 36 x (D) 64 mm* | | |
| • Delays : | No delay - startup delay *(10 sec)* - recovery *(180 sec)* - reaction delay *(10 sec)* | | | | |
| **Over (or) under current monitoring.** | | | | | |
| Monitors supply, ensuring current remains within preset over (or) under current limits | | | | | |
| **DCM5230A** | 230 VAC | 5A | with 5A CT | modular current monitor | **1 270.50** |
| **DCM5400A** | 400 VAC | 5A | with 5A CT | modular current monitor | **1 270.50** |
| **DCM5024D** | 24 VDC | 5A | with 5A CT | modular current monitor | **1 711.50** |
| **DCM15230A** | 230 VAC | 15A | direct 15 A | modular current monitor | **1 270.50** |
| **Current window comparator** | | | *(H) 92 x (W) 54 x (D) 64 mm* | | |
| Monitors supply, ensuring current remains within preset over and under current limits | | | | | |
| **DCW5230A** | 230 VAC | 5A | with 5A CT | over / under current monitor | **1 270.50** |
| **DCW15230A** | 230 VAC | 15A | direct 15 A | over / under current monitor | **1 270.50** |
| **Load shed relay** | | | *(H) 92 x (W) 36 x (D) 64 mm* | | |
| Load shed relay featuring high resolution analog converter for precise switching levels. The relay monitors current consumed and disconnects unnecessary load when necessary | | | | | |
| **DLS230A** | 230 VAC | 15A | 1 circuit | modular load shed relay | **1 218.00** |


DLS

| type | supply | outputs | function | description | price |
|---|---|---|---|---|---|
| **Digital temperature controller with timer** | | | *(interfaces with TP1 digital probe)* | | |
| 4 digit digital temperature controller, monitors temperature via the TP1 temperature probe *(supplied separately)* Setup and range selection can be adjusted via an easy to access control menu system to make all common functions available. | | | | | |
| • Two set points / relay outputs / PID control | | | | | |
| • Over / under temperature | | | | | |
| **DDTC230A** | 230 VAC | relay | controller | digital temperature controller | **1 606.50** |
| **DDTCT230A** | 230 VAC | relay | controller | temp controller / 24 hour clock | **1 848.00** |
| **TP1** | temperature probe | | | *(with 3 meter cable)* | **327.60** |
| **Digital voltage window comparator** | | | | | |
| Monitors supply, ensuring voltage remains within preset over and under limits and that all phases are present and in sequence. | | | | | |
| • Over / under voltage and frequency monitoring | | | | | |
| • 2 relay outputs for individual functions | | | | | |
| • Adjustable delays | | | | | |
| • Phase failure/reversal | | | | | |
| **DDVW3400A** | 400 VAC | 3 phase | monitor | digital voltage monitor | **2 005.50** |


DDVW3

| | | | | | |
|---|---|---|---|---|---|
| **Wireless signal extender** | | | *(3 inputs and 3 outputs: Tx and Rx)* | | |
| • Power supply: 10 - 30 VAC/DC | | | | | |
| • License free radio band | | | | | |
| • 7 km transmission - line of sight *(includes Watchdog protection)* | | | | | |
| **DRC/M 10-30VDC** | 10-30 VAC/DC | 3 relay | master transceiver | wireless signal extender | **2 331.00** |
| **DRC/S 10-30VDC** | 10-30 VAC/DC | 3 relay | slave transceiver | wireless signal extender | **2 194.50** |
| **ANT 2** | antenna for DRC signal extender | | | for DRC module | **793.80** |

* *Other voltage options available on request*


T2M


T2D


R2U


TNE

The **Electro 11 pin plug-in** range of control and timing devices to be installed into a standard 11 pin base making installation and potential future replacement simple and convenient.

- Compact 11 pin plug-in modules: *(H) 80 x (W) 35 x (D) 79 mm*

| multi-range (adjustable time ranges) | No. | time ranges |
|---|---|---|
| | 1 | 6 sec |
| | 2 | 60 sec |
| | 3 | 6 min |
| | 4 | 60 min |

| multi-function | No. | functions |
|---|---|---|
| | A | on-delay |
| | B | interval |
| | C | equal repeat |
| | D | interval *(pulse controlled)* |

| type | supply voltage* | time range | function | description | price |
|---|---|---|---|---|---|
| **Multi-range/multi-function timers -** *(4 x selectable time ranges / 4 x selectable functions)* | | | | | |
| Multi-range multi-function plug-in timers incorporating most commonly required functions. Any change made to function or time range by means of front mounted dials will result in a reset of the unit. | | | | | |
| **T2M110A** | 110 VAC | selectable via rear mounted DIP switches **1...4** | selectable via rear mounted DIP switches **A, B, C** | multi-range/function timer | **898.80** |
| **T2M230A** | 230 VAC | | | multi-range/function timer | **898.80** |
| **T2M400A** | 400 VAC | | | multi-range/function timer | **898.80** |
| **T2M012AD** | 12 VAC/DC | | | multi-range/function timer | **898.80** |
| **T2M024AD** | 24 VAC/DC | | | multi-range/function timer | **898.80** |
| **T2M048AD** | 48 VAC/DC | | | multi-range/function timer | **898.80** |
| **T3M110A** | 110 VAC | | DIP switches **A...D** | multi-range/function timer | **1 060.50** |
| **T3M230A** | 230 VAC | | | multi-range/function timer | **1 060.50** |
| **T3M024AD** | 24 VAC/DC | | | multi-range/function timer | **1 060.50** |
| **True OFF delay on de-energisation timer** *(delay on removal of supply)* | | | | | |
| Multi-range OFF delay *(delay-on release)* timer with advanced power back-up circuitry to deliver wide time ranges. The unit must be powered for no less than 30 sec + 30% of set time range. | | | | | |
| **T2D10S230A** | 230 VAC | 10 sec | off delay | delay on de-energise timer | **1 031.10** |
| **T2D30S230A** | 230 VAC | 30 sec | off delay | delay on de-energise timer | **1 031.10** |
| **T2D30S400A** | 400 VAC | 30 sec | off delay | delay on de-energise timer | **1 031.10** |
| **T2D60S230A** | 230 VAC | 60 sec | off delay | delay on de-energise timer | **1 031.10** |
| **T2D180S024AD** | 24 VAC/DC | 180 sec | off delay | delay on de-energise timer | **1 031.10** |
| **T2D180S230A** | 230 VAC | 180 sec | off delay | delay on de-energise timer | **1 031.10** |
| **T2D360S024AD** | 24 VAC/DC | 360 sec | off delay | delay on de-energise timer | **1 031.10** |
| **T2D360S230A** | 230 VAC | 360 sec | off delay | delay on de-energise timer | **1 031.10** |
| **T2D/B10M230A** | 230 VAC | 10 min | off delay | delay on de-energise timer | **1 144.50** |
| **T2D/B30M230A** | 230 VAC | 30 min | off delay | delay on de-energise timer | **1 144.50** |
| **T2D/B60M230A** | 230 VAC | 60 min | off delay | delay on de-energise timer | **1 144.50** |
| **T2D/B180M230A** | 230 VAC | 180 min | off delay | delay on de-energise timer | **1 144.50** |
| **Unequal repeating timer** **multi-range** *(for ON and OFF ranges)* | | | | | |
| Asymmetrical recycler timer with two independently adjustable time ranges. On application of supply the relay operates for the pre-set "on" time, thereafter the relay releases for the separately pre-set "off" time. Cycle repeats until supply is removed. | | | | | |
| Cycle can be reversed *("off" time first)* by bridging terminals *(7 and 9)* | | | | | |
| • Unequal repeating timer *(asymmetrical recycler independently adjustable ON time and OFF time)* | | | | | |
| **Dip switch selectable:** **ON:** 6sec, 60sec, 6min, 60min, 6 hr **OFF:** 6sec, 60sec, 6min, 60min, 6 hr | | | | | |
| **R2U110A** | 110 VAC | selectable via rear DIP switches | repeat | unequal repeating timer | **943.95** |
| **R2U230A** | 230 VAC | | repeat | unequal repeating timer | **943.95** |
| **R2U400A** | 400 VAC | | repeat | unequal repeating timer | **943.95** |
| **R2U012AD** | 12 VAC/DC | | repeat | unequal repeating timer | **943.95** |
| **R2U024AD** | 24 VAC/DC | | repeat | unequal repeating timer | **943.95** |
| **Star-delta timer** | | | | | |
| Applying supply activates a contact for the preset "star" period the contact disconnects on lapse of this period for the preset transition period *(4-180 ms)* where after the relay switches to the "delta" position until supply is removed. | | | | | |
| **TNE30S024AD** | 24 VAC/DC | 30 sec | star delta | plug-in star delta timer | **782.25** |
| **TNE30S110A** | 110 VAC | 30 sec | star delta | plug-in star delta timer | **782.25** |
| **TNE30S230A** | 230 VAC | 30 sec | star delta | plug-in star delta timer | **782.25** |
| **TNE30S400A** | 400 VAC | 30 sec | star delta | plug-in star delta timer | **782.25** |
| **TNE60S024AD** | 24 VAC/DC | 60 sec | star delta | plug-in star delta timer | **782.25** |
| **TNE60S230A** | 230 VAC | 60 sec | star delta | plug-in star delta timer | **782.25** |
| **TNE60S400A** | 400 VAC | 60 sec | star delta | plug-in star delta timer | **782.25** |
| **TNE180S230A** | 230 VAC | 180 sec | star delta | plug-in star delta timer | **782.25** |

* *Other voltage options available on request*



Above ZAR prices do not include VAT. E&OE

# Plug-in electronic timing devices


DEF1/F230A


T10


GAM3


RRP1

The **Electro 11 pin plug-in** range of control and timing devices to be installed into a standard 11 pin base making installation and potential future replacement simple and convenient.

- Compact 11 pin plug-in modules: *(H) 80 x (W) 35 x (D) 79 mm*

| type | supply voltage* | time range | function | description | price |
|---|---|---|---|---|---|
| **Defrost timer** | *(with fan delay)* | | | | |
| • Configurable for 4-hour *(defrost cycle every 4 hours)* or 8 hour cycle. Applying supply starts the pre-set *(1-60 min)* defrost cycle, thereafter the relay switches to the cooling cycle, activating the pre-set *(1-60 sec)* fan delay period *(to prevent water splatter and warm air blowing into the room)* and then starts the fan. | | | | | |
| • Defrost time: | 3-60 min | | | | |
| • Fan delay: | 3-60 sec | | | | |
| **DEF1/F230A** | 230 VAC | see above | defrost | plug-in electronic defrost timer | **1 081.50** |
| **Econo range timers** | *econo single adjustable time range and supply voltage* | | | | |
| **T10/10S230A** | 230 VAC | 10 sec | on-delay | plug-in electronic timer timer | **646.80** |
| **T10/10S400A** | 400 VAC | 10 sec | on-delay | plug-in electronic timer timer | **646.80** |
| **T10/30S230A** | 230 VAC | 30 sec | on-delay | plug-in electronic timer timer | **646.80** |
| **T10/60S230A** | 230 VAC | 60 sec | on-delay | plug-in electronic timer timer | **646.80** |
| **T10/180S024AD** | 24 VAC/DC | 180 sec | on-delay | plug-in electronic timer timer | **646.80** |
| **T10/180S230A** | 230 VAC | 180 sec | on-delay | plug-in electronic timer timer | **646.80** |
| **T10/360S230A** | 230 VAC | 360 sec | on-delay | plug-in electronic timer timer | **646.80** |
| **T10/360S400A** | 400 VAC | 360 sec | on-delay | plug-in electronic timer timer | **646.80** |
| **T10/600S230A** | 230 VAC | 600 sec | on-delay | plug-in electronic timer timer | **646.80** |
| **T10/600S400A** | 400 VAC | 600 sec | on-delay | plug-in electronic timer timer | **646.80** |
| **T10/600S525A** | 525 VAC | 600 sec | on-delay | plug-in electronic timer timer | **646.80** |
| **T10/60M230A** | 230 VAC | 60 min | on-delay | plug-in electronic timer timer | **646.80** |
| **T1IP/30S024AD** | 24 VAC/DC | 30 sec | interval | econo pulsed internal timer | **887.25** |
| **T1IP/30S230A** | 230 VAC | 30 sec | interval | econo pulsed internal timer | **887.25** |
| **T1P/230A** | 230 VAC | – | one-shot | econo impulse relay | **782.25** |
| **FRT1/230A** | 230 VAC | – | timer | econo forward/reverse timer | **948.15** |
| **Two hand control** | *(safety control)* | | | | |
| Two hand control designed as a safety device for machines, forcing the operator to operate two pushbuttons within 0.5 secs for machine to operate. A latch facility is provided for use foot switches. | | | | | |
| **THC1230A** | 230 VAC | – | safety | two safety hand controller | **869.40** |
| **Flip flop relays** | | | | | |
| Flip flop relays to control many applications such as dividing work load and controlling conveyor direction. *(F30 mains controlled function has to be energised for at least 30 sec before the supply is removed)* | | | | | |
| **F12230A** | 230 VAC | flip-flop | | pulse controlled without memory | **948.15** |
| **F30230A** | 230 VAC | flip-flop | | mains or pulse controlled + memory | **1 060.50** |
| **F30024AD** | 24 VAC/DC | flip-flop | | mains or pulse controlled + memory | **1 060.50** |
| **Alarm module** | *(3 circuits)* | | | | |
| Alarm module to control alarm signals and generate the appropriate output for simple annunciator panels. Control of alarm outputs from 3 separate N/O inputs. System can be expanded by bridging all common terminals of the modules. | | | | | |
| **GAM3012D** | 24 VDC | – | alarm | alarm annunciator module | **1 019.55** |
| **GAM3024D** | 12 VDC | – | alarm | alarm annunciator module | **1 019.55** |
| **Tachometer relay** | | | | | |
| Multi-function tachometer relay with four selectable speeds. The unit can be selected for OVER and UNDER speeds, interfaces directly with Namur two wire proximity sensor or limit switch. Relay remains energised for as long as detected speed remains within the pre-set limits. | | | | | |
| • Selectable speeds: | 1-10, 10-100, 100-1000,1000-10,000 (RPM) | | | | |
| **RRP1024AD** | 24 VAC/DC | – | relay | over/under speed monitor | **962.85** |
| **RRP1110A** | 110 VAC | – | relay | over/under speed monitor | **962.85** |
| **RRP1230A** | 230 VAC | – | relay | over/under speed monitor | **962.85** |
| **RRP1012D** | 12 VAC | – | relay | over/under speed monitor | **962.85** |

* *Other voltage options available on request*


SFK1


V3E...


T1R


SC1

The **Electro 11 pin plug-in** range of control and timing devices to be installed into a standard 11 pin base making installation and potential future replacement simple and convenient.

- Compact 11 pin plug-in modules: *(H) 80 x (W) 35 x (D) 79 mm*

| type | supply voltage* | monitored voltage | function | description | price |
|---|---|---|---|---|---|
| **Phase failure / sequence relay** | | | | | |
| The SF1 monitors 3 phase supplies to detect phase failure, phase reversal and phase imbalance. The relay only operates while all Three-phases are present and in sequence. | | | | | |
| **SF1110A** | 110VAC | 3-phase | phase failure | plug-in phase failure relay | **741.30** |
| **SF1400A** | 400VAC | 3-phase | phase failure | plug-in phase failure relay | **741.30** |
| **SF1525A** | 525VAC | 3-phase | phase failure | plug-in phase failure relay | **741.30** |
| • With sensitivity adjustment for Negative Phase Sequence (NPS) | | | | | |
| **SF1K400A** | 400VAC | 3-phase | phase failure | phase failure with adj.for NPS | **767.55** |
| **SF1K525A** | 525VAC | 3-phase | phase failure | phase failure with adj.for NPS | **767.55** |
| **Over / under voltage monitors** *(incorporating phase failure)* | | | | | |
| Monitors own supply. Relay will only operate whilst the supply voltage is within the presettable "over" and "under" voltage limits and all Three-phases present and in sequence. Provides effective power supply supervision and protection. | | | | | |
| • Over / under voltage protection | | | | | |
| • Phase failure/reversal protection | | | | | |
| **V1E230A** | 230 VAC | 3-phase | voltage | over / under voltage monitor | **1 071.00** |
| **V3E110A** | 110 VAC | 3-phase | voltage | over / under voltage monitor | **1 113.00** |
| **V3E400A** | 400 VAC | 3-phase | voltage | over / under voltage monitor | **1 113.00** |
| **V3E525A** | 525 VAC | 3-phase | voltage | over / under voltage monitor | **1 113.00** |
| **V3EN400A** | 400 VAC | 3-ph + N | voltage | voltage monitor with neutral | **1 113.00** |
| **Voltage monitor** *under (or) over voltage* | | | | | |
| V1C voltage monitor monitors a voltage separate from its supply. Relay will operate while the monitored voltage *(below)* the preset "over" voltage limit *(or) (above)* the preset "under" voltage limit. | | | | | |
| **V1C230A400MV** | 230 VAC | 40 - 400 VAC | voltage | plug-in voltage monitor | **993.30** |
| **Frequency monitor** | | | | | |
| The relay is energised as long as measured frequency is within the presettable limits. | | | | | |
| • Upper setting: | | 50-56 Hz | | | |
| • Lower setting: | | 40-50 Hz | | | |
| **H1E0230A** | 230 VAC | 3-phase | frequency | over and under freq monitor | **940.80** |
| **Current monitor** | | | | | |
| The module directly interfaces with conventional 1/5ACTs.The relay only operates as long as monitored current remains below the pre-set upper limit (or) above the pre-set under limit. | | | | | |
| • Hysteresis: | | 5-50% *(adjustable)* | | | |
| **LA51230A** | 230 VAC | 0 - 1A | current | over (or) under current monitor | **1 113.00** |
| **LA55230A** | 230 VAC | 0 - 5A | current | over (or) under current monitor | **1 113.00** |
| **LA55400A** | 400 VAC | 0 - 5A | current | over (or) under current monitor | **1 113.00** |
| **WA55230A** | 400 VAC | 0 - 5A | current | over and under current monitor | **1 113.00** |
| **Temperature relays** *(direct conn. to PT100)* | | | | | |
| Directly interface with conventional PT100 *(3 wire)* sensors, the relay energises and remains so until pre-set maximum temperature limit is reached. | | | | | |
| • Standard temperature : -20°...+80°C | | | • Ranges: 80°...180°C | | |
| **T1R/180S110A** | 110 VAC | 180s | relay | plug-in temperature controller | **1 081.50** |
| **T1R/180S230A** | 230 VAC | 180s | relay | plug-in temperature controller | **1 081.50** |
| **Converters / Isolators** | | | | | |
| Compact signal converter with built-in 24VDC power supply for the output. The unit is designed for low amplitude signals where isolation is not needed. *(Use SI100 for isolation).* | | | | | |

| type | supply voltage* | input signal | output signal | description | price |
|---|---|---|---|---|---|
| **SC120A111230A** | 230 VAC | 0 - 1A | 4 - 20mA | current converter | **1 659.00** |
| **SC120A211230A** | 230 VAC | 0 - 5A | 4 - 20mA | current converter | **1 659.00** |

* *Other voltage options available on request*



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# Plug-in electronic timing devices


LV1


LP3


SN1


PS3S


EX11 + EX08


EMD02


EMD03

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- Compact 11 pin plug-in modules: (H) 80 x (W) 35 x (D) 79 mm

| type | supply voltage* | time range | function | description | price |
|---|---|---|---|---|---|
| **Level controllers** *(failsafe control and monitoring of high and / or low levels)* | | | | | |
| Level control unit of conductive liquids, can be configured for "Filling" or "Emptying" Can be used as a two probe system for alarm purposes or a three probe system to control HIGH and LOW levels of a reservoir. Up to four LV1 can be utilized in the same reservoir by connecting all commons (pin7) | | | | | |
| • Emptying/ filling | | • Adjustable sensitivity | | | |
| **LV1024A** | 24 VAC | – | level control | liquid conductive controller | **898.80** |
| **LV1110A** | 110 VAC | – | level control | liquid conductive controller | **898.80** |
| **LV1230A** | 230 VAC | – | level control | liquid conductive controller | **898.80** |
| **LV1400A** | 400 VAC | – | level control | liquid conductive controller | **898.80** |
| **LV1525A** | 525 VAC | – | level control | liquid conductive controller | **898.80** |
| **LV1024D** | 24 VAC | – | level control | liquid conductive controller | **1 344.00** |
| **LVC1230A** | 230 VAC | – | level control | DC capacitive probe control | **838.95** |
| *Knobs for above LV series to be purchased separately* | | | | | |
| **Pump sequence relay** *(Three circuits)* | | | | | |
| Alternating relays designed to minimize pump and motor wear by equalizing run time between parallel components in a multi-pump system. Controlled by an external control switch. | | | | | |
| • Three normally open pump outputs<br>• Permanent memory for next pump to be activated after power off<br>• Three pressure switch inputs *(voltage free)* | | | | | |
| **PSR1230A** | 230 VAC | 3 circuits | relay | pump sequencing relay | **1 022.70** |
| **Pump protection relay** | | | | | |
| Pump protection relay to safeguard submersible pumps against damage. The unit is easily calibrated to monitor all important pump characteristics. | | | | | |
| • Over / under current protection<br>• Over / under voltage protection and phase rotation *(on 3 phase units)*<br>• Running dry restart delay / over current retires | | | | | |
| Function: Voltage, Current monitoring / Security switch trip / Star / Delta connection | | | | | |

| type | supply voltage* | phase time | recovery | description | price |
|---|---|---|---|---|---|
| **LP1230A** | 230 VAC | 1-phase | 6 hours | pump protection relay | **1 003.80** |
| **LP2230A** | 230 VAC | 1-phase | 1-2-4-8 hrs | pump protection relay | **1 281.00** |
| **LP3400A** | 400 VAC | 3-phase | 1-2-4-8 hrs | pump protection relay | **1 312.50** |

**Accessories for level controls**

| | | | |
|---|---|---|---|
| **SN1** | single line insulated stainless steel probe for conductive liquids | | **195.30** |
| **PS3S** | 3 electrode holder *(mounts through 50.5 mm hole)* | | **200.55** |
| **P1000S** | electrodes for PS3S holder *(1 meter length)* | | **95.55** |
| **FS03-3P** | electrode spacer disc *(for extended probe length)* | | **38.85** |
| **PXL** | extension locknut *(each)* | | **36.65** |

**Empty plastic housings** *(for electronic components)*

**11 pin plug-in black plastic housings**

| | | | |
|---|---|---|---|
| **EX02** | | panel mount adaptor for 11 pin modules | **97.65** |
| **EX11** | *(H) 80 x (W) 35 x (D) 79* | 11 pin empty housing complete *(black)* | **63.00** |
| **EX08** | front label | blank adhesive label for front of housing | **7.98** |
| **EX06B** | black knob | potentiometer knob for above housing | **10.82** |
| **EX06G** | grey knob | potentiometer knob for above housing | **10.82** |

**Empty modular housings** - *(grey) 6.3 mm terminal centre spacing*

- Aligns with standard DIN rail MCBs and modular devices *(2 or 3 modules wide)*

| | | | |
|---|---|---|---|
| **EMD02** | 92 x 35.5 x 64 | 2 module complete housing DIN rail mount | **81.90** |
| **EMD03** | 92 x 35.5 x 64 | 3 module complete housing DIN rail mount | **75.60** |
| **EMX02** | front label | blank adhesive front label for EMD02 *(2 modular)* housing | **19.43** |
| **EMX03** | front label | blank adhesive front label for EMD03 *(3 modular)* housing | **19.43** |
| **EMX04** | adj. knob | screw adjustable knob for internal potentiometer | **14.39** |

* *Other voltage options available on request*


MOSAIC
REER
SAFEGATE
REER
REER
MZERO




# K

# Field Switching, Sensing & Safety

Interactive Catalogue



# Field Switching, Sensing & Safety

K




Inductive proximity sensors

K-1...3/15



Capacitive proximity sensors

K-4



Photoelectric sensors

K-5...11/13...14/16



Ultrasonic sensors

K-12



Fibre-optic & Laser sensors

K-17...18



Pressure transmitters & Switches

K-19...21/28...29



Flow sensors & Switches

K-22/36/38



Temperature controllers & Thermocouple sensors

K-25...27



Limit switches

K-30...34



Float switches & Liquid level sensors

K-35/37/39



Occupancy sensors

K-40



Safety switches

K-43...48



Safety light curtains & Controllers

K-49...52



Safety lockout hasps

K-53

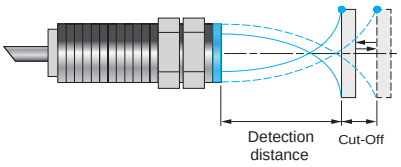


Smoke detectors

K-54


Need help navigating the interactive catalogue? Scan the QR code for a short tutorial video.

07-26_3E




**Inductive sensors** used for metal object detection. Operational integrity is maintained even in harsh environments e.g. presence of oils, powders, liquids and vibrations etc. Commonly utilized in various types of industrial machinery/ applications for position monitoring *(e.g. textile machines, transport systems, packaging machines and automation systems).*

- Protection degree: IP67
- Ambient limits: -25°C ... +70°C
- LED indication: Incorporated
- Housing: Nickel-plated brass (***PFM/PFK*** *- AISI 303 / AISI 316L stainless steel housing)*
- Short circuit and polarity reversal protection


AB1/AP-3A


AD1/AP-3A


AE1/CP-1A


AE6/AP-3A


AM6/AP-3H

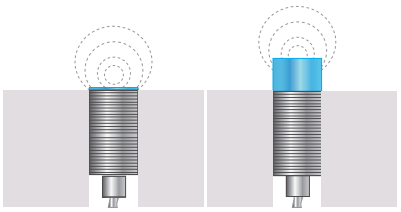
| type | supply voltage | flush | non flush | detection distance | NPN | PNP | NO | NC | connector | body length (mm) | price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M4 proximity switches** *(standard detection range)* | | | | | | | | | | | |
| **Standard detection range** | | | | cable connection *(2m)* | | | | | | | |
| **AB1/AP-3A** | 10 - 30 VDC | • | | 1 mm | | • | • | | cable | 22 | **1 491.00** |
| **AB1/CP-3A** | 10 - 30 VDC | • | | 1 mm | | • | | • | cable | 22 | **1 491.00** |
| **M5 proximity switches** *(standard detection range)* | | | | | | | | | | | |
| **Standard detection range** | | | | cable connection *(2m)* | | | | | | | |
| **AD1/AP-3A** | 10 - 30 VDC | • | | 1.5 mm | | • | • | | cable | 31 | **955.50** |
| **AD1/CP-3A** | 10 - 30 VDC | • | | 1.5 mm | | • | | • | cable | 31 | **1 001.70** |
| **M8 proximity switches** | | | | | | | | | | | |
| **Standard detection range** | | | | cable connection *(2m)* | | | | | | | |
| **AE1/AP-1A** | 10 - 30 VDC | • | | 1.5 mm | | • | • | | cable | 46 | **560.70** |
| **AE1/CP-1A** | 10 - 30 VDC | • | | 1.5 mm | | • | | • | cable | 46 | **560.70** |
| **AE1/AP-2A** | 10 - 30 VDC | | • | 2.5 mm | | • | • | | cable | 46 | **560.70** |
| **AE1/CP-2A** | 10 - 30 VDC | | • | 2.5 mm | | • | | • | cable | 46 | **560.70** |
| **Long detection range** | | | | | | | | | | | |
| **AE6/AP-3A*** | 10 - 30 VDC | • | | 2 mm | | • | • | | cable | 36 | **678.30** |
| **AE6/CP-3A*** | 10 - 30 VDC | • | | 2 mm | | • | | • | cable | 36 | **678.30** |
| **AE6/AP-4A*** | 10 - 30 VDC | | • | 4 mm | | • | • | | cable | 36 | **678.30** |
| **AE6/CP-4A*** | 10 - 30 VDC | | • | 4 mm | | • | | • | cable | 36 | **678.30** |
| | | | | M8 *(3pin)* plug connection | | | | | | | |
| **AE6/AP-3F*** | 10 - 30 VDC | • | | 2 mm | | • | • | | M8 plug | 40 | **724.50** |
| **AE6/CP-3F*** | 10 - 30 VDC | • | | 2 mm | | • | | • | M8 plug | 40 | **724.50** |
| **AE6/AP-4F*** | 10 - 30 VDC | | • | 4 mm | | • | • | | M8 plug | 40 | **724.50** |
| **AE6/CP-4F*** | 10 - 30 VDC | | • | 4 mm | | • | | • | M8 plug | 40 | **724.50** |
| **M12 proximity switches** | | | | | | | | | | | |
| **Standard detection range** | | | | cable connection *(2m)* | | | | | standard body | | |
| **AM1/AP-1A** | 10 - 30 VDC | • | | 2 mm | | • | • | | cable | 50 | **481.95** |
| **AM1/CP-1A** | 10 - 30 VDC | • | | 2 mm | | • | | • | cable | 50 | **514.50** |
| **AM1/AN-1A** | 10 - 30 VDC | • | | 2 mm | • | | • | | cable | 50 | **514.50** |
| **AM1/CN-1A** | 10 - 30 VDC | • | | 2 mm | • | | | • | cable | 50 | **514.50** |
| **AM1/AP-2A** | 10 - 30 VDC | | • | 4 mm | | • | • | | cable | 50 | **514.50** |
| **AM1/CP-2A** | 10 - 30 VDC | | • | 4 mm | | • | | • | cable | 50 | **514.50** |
| **AM1/AN-2A** | 10 - 30 VDC | | • | 4 mm | • | | • | | cable | 50 | **514.50** |
| **AM1/CN-2A** | 10 - 30 VDC | | • | 4 mm | • | | | • | cable | 50 | **514.50** |
| **Long detection range** | | | | | | | | | | | |
| **AM6/AP-3A*** | 10 - 30 VDC | • | | 4 mm | | • | • | | cable | 40 | **631.05** |
| **AM6/CP-3A*** | 10 - 30 VDC | • | | 4 mm | | • | | • | cable | 40 | **631.05** |
| **AM6/AP-4A*** | 10 - 30 VDC | | • | 8 mm | | • | • | | cable | 40 | **631.05** |
| **AM6/CP-4A*** | 10 - 30 VDC | | • | 8 mm | | • | | • | cable | 40 | **631.05** |
| | | | | M12 *(4pin)* plug connection | | | | | | | |
| **AM6/AP-3H*** | 10 - 30 VDC | • | | 4 mm | | • | • | | M12 plug | 53 | **635.25** |
| **AM6/CP-3H*** | 10 - 30 VDC | • | | 4 mm | | • | | • | M12 plug | 53 | **678.30** |
| **AM6/AP-4H*** | 10 - 30 VDC | | • | 8 mm | | • | • | | M12 plug | 53 | **678.30** |
| **AM6/CP-4H*** | 10 - 30 VDC | | • | 8 mm | | • | | • | M12 plug | 53 | **678.30** |
| **2 wire version** | | | | M12 *(4pin)* plug connection | | | | | | | |
| **AM1/A0-1H** | 10 - 30 VDC | • | | 2 mm | • | • | • | | M12 plug | 75 | **672.00** |
| **AM1/A0-2H*** | 10 - 30 VDC | | • | 4 mm | • | • | • | | M12 plug | 75 | **672.00** |
| **AM1/A0-3H*** | 10 - 30 VDC | • | | 4 mm | • | • | • | | M12 plug | 75 | **841.05** |
| **AM1/A0-4H*** | 10 - 30 VDC | | • | 8 mm | • | • | • | | M12 plug | 75 | **841.05** |
| **NO + NC output** | | | | M12 *(4pin)* plug connection | | | | | | | |
| **AM1/BP-1H** | 10 - 30 VDC | • | | 2 mm | | • | • | • | M12 plug | 65 | **678.30** |
| **AM1/BP-2H** | 10 - 30 VDC | | • | 4 mm | | • | • | • | M12 plug | 65 | **678.30** |

* *Long detection range*

*For **NPN** version, replace the **"P"** with **"N"** – See sensor connectors and cables page*



Above ZAR prices do not include VAT. E&OE




## Inductive proximity sensors - Ø M12 and M18

| type | supply voltage | flush | non flush | detection distance | NPN | PNP | NO | NC | connector | body length (mm) | price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M12 proximity switches** | | | | | | | | | | | |
| **Decout version** | **NPN/PNP/NO/NC** *(on one sensor)* | | | | | | | | M12 *(4pin)* plug connection | | |
| **PM3/00-1H** | 10 - 30 VDC | • | | 2 mm | • | • | • | • | M12 plug | 74 | **1 113.00** |
| **PM3/00-2H** | 10 - 30 VDC | | • | 4 mm | • | • | • | • | M12 plug | 74 | **1 113.00** |
| **AC version** | | | | cable connection - 3 wire (2m) | | | | | | | |
| **VM2/A0-1B** | 20 - 253 VAC | • | | 2 mm | TRIAC | • | | | cable | 72 | **1 291.50** |
| **VM2/C0-1B** | 20 - 253 VAC | • | | 2 mm | TRIAC | | • | | cable | 72 | **1 291.50** |
| **VM2/A0-2B** | 20 - 253 VAC | | • | 4 mm | TRIAC | • | | | cable | 73 | **1 291.50** |
| **VM2/C0-2B** | 20 - 253 VAC | | • | 4 mm | TRIAC | | • | | cable | 73 | **1 291.50** |
| **For food and beverage applications** | | | | | | | | | M12 (4pin) plug connection | | |
| • AISI 316L (DIN 1.4404) stainless steel housing<br>• IP67 (EN60529) - IP68 (1m - 7 days) - IP69K protection degree<br>• -40ºC...+80ºC *(up to 100ºC for short exposure during cleaning process)* | | | | | | | | | | | |
| **PFM1/BP-3H*** | 10 - 30 VDC | • | | 4 mm | | • | • | • | M12 plug | 65 | **1 270.50** |
| **PFM1/BP-4H*** | 10 - 30 VDC | | • | 8 mm | | • | • | • | M12 plug | 65 | **1 323.00** |
| *See sensor connectors and cables page* | | | | | | | | | | | |
| **M18 cylindrical proximity switches** | | | | | | | | | | | |
| **Standard detection range** | | | | cable connection - 3 wire (2m) | | | | | | | |
| **AK1/AP-1A** | 10 - 30 VDC | • | | 5 mm | | • | • | | cable | 50 | **607.95** |
| **AK1/CP-1A** | 10 - 30 VDC | • | | 5 mm | | • | | • | cable | 50 | **607.95** |
| **AK1/AN-1A** | 10 - 30 VDC | • | | 5 mm | • | | • | | cable | 50 | **607.95** |
| **AK1/CN-1A** | 10 - 30 VDC | • | | 5 mm | • | | | • | cable | 50 | **607.95** |
| **AK1/AP-2A** | 10 - 30 VDC | | • | 8 mm | | • | • | | cable | 50 | **607.95** |
| **AK1/CP-2A** | 10 - 30 VDC | | • | 8 mm | | • | | • | cable | 50 | **607.95** |
| **AK1/AN-2A** | 10 - 30 VDC | | • | 8 mm | • | | • | | cable | 50 | **607.95** |
| **AK1/CN-2A** | 10 - 30 VDC | | • | 8 mm | • | | | • | cable | 50 | **607.95** |
| **Short body - NO + NC** | | | | cable connection - 4 wire (2m) | | | | | | | |
| **AK6/BP-1A** | 10-30 VDC | • | | 5 mm | | • | • | • | cable | 39 | **693.00** |
| **AK6/BN-1A** | 10-30 VDC | • | | 5 mm | • | | • | • | cable | 39 | **693.00** |
| **AK6/BP-2A** | 10-30 VDC | | • | 8 mm | | • | • | • | cable | 39 | **777.00** |
| **AK6/BN-2A** | 10-30 VDC | | • | 8 mm | • | | • | • | cable | 39 | **777.00** |
| **Long detection range - NO + NC** | | | | M12 *(4pin)* plug connection | | | | | | | |
| **AK6/BP-3H*** | 10 - 30 VDC | • | | 8 mm | | • | • | • | M12 plug | 49 | **840.00** |
| **AK6/BN-3H*** | 10 - 30 VDC | • | | 8 mm | • | | • | • | M12 plug | 49 | **896.70** |
| **AK6/BP-4H*** | 10 - 30 VDC | | • | 12 mm | | • | • | • | M12 plug | 49 | **896.70** |
| **AK6/BN-4H*** | 10 - 30 VDC | | • | 12 mm | • | | • | • | M12 plug | 49 | **896.70** |
| **2 wire version** | | | | M12 *(4pin)* plug connection | | | | | | | |
| **AK1/A0-1H** | 10 - 30 VDC | • | | 5 mm | • | • | • | | M12 plug | 64 | **773.85** |
| **AK1/A0-2H** | 10 - 30 VDC | | • | 8 mm | • | • | • | | M12 plug | 64 | **773.85** |
| **AK1/A0-3H*** | 10 - 30 VDC | • | | 8 mm | • | • | • | | M12 plug | 64 | **934.50** |
| **AK1/A0-4H*** | 10 - 30 VDC | | • | 12 mm | • | • | • | | M12 plug | 64 | **934.50** |
| **Decout version** | **NPN/PNP/NO/NC** *(on one sensor)* | | | | | | | | M12 *(4pin)* plug connection | | |
| **PK3/00-1H** | 10 - 30 VDC | • | | 5 mm | • | • | • | • | M12 plug | 72 | **1 218.00** |
| **PK3/00-2H** | 10 - 30 VDC | | • | 8 mm | • | • | • | • | M12 plug | 72 | **1 218.00** |
| **AC version** | | | | cable connection | | | | | | | |
| **VK2/A0-1B** | 20 - 253 VAC | • | | 5 mm | TRIAC | • | | | cable | 77 | **1 228.50** |
| **VK2/C0-1B** | 20 - 253 VAC | • | | 5 mm | TRIAC | | • | | cable | 77 | **1 228.50** |
| **VK2/A0-2B** | 20 - 253 VAC | | • | 8 mm | TRIAC | • | | | cable | 77 | **1 228.50** |
| **VK2/C0-2B** | 20 - 253 VAC | | • | 8 mm | TRIAC | | • | | cable | 77 | **1 228.50** |
| **For food and beverage applications** | | | | | | | | | M12 (4pin) plug connection | | |
| • AISI 316L (DIN 1.4404) stainless steel housing<br>• IP67 (EN60529) - IP68 (1m - 7 days) - IP69K protection degree<br>• -40ºC...+80ºC *(up to 100ºC for short exposure during cleaning process)* | | | | | | | | | | | |
| **PFK1/BP-3H*** | 10 - 30 VDC | • | | 8 mm | | • | • | • | M12 plug | 63 | **1 543.50** |
| **PFK1/BP-4H*** | 10 - 30 VDC | | • | 12 mm | | • | • | • | M12 plug | 63 | **1 627.50** |

* *Long detection range* *See sensor connectors and cables page*

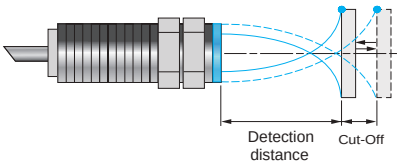

PM3/00-1H


AK1/CP-1A


PK3/00-1H


PFK1/BP-3H

ECOLAB Diversey IP67K




## Inductive proximity sensors

**Inductive sensors** are used for metal object detection. Operational integrity is maintained even in harsh environments e.g. presence of oils, powders, liquids and vibrations etc. Commonly utilized in various types of industrial machinery/ applications for position monitoring *(e.g. textile machines, transport systems, packaging machines and automation systems).*

**General features:**

- Protection degree: IP67
- Ambient limits: -25ºC...+70°C
- LED indication: Incorporated
- Housing: Nickel-plated brass
- Short circuit and polarity reversal protection


AT6/BP-3H


AT6/BP-4H


AK6/D2-5H


IL8/AP-3A


IL1/AP-3A

| type | supply voltage | flush | non flush | detection distance | NPN | PNP | NO | NC | connector | body length (mm) | price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M30 cylindrical proximity switches** | | | | | | | | | | | |
| **Standard detection range** | | | | cable connection (2m) | | | | | | | |
| **AT1/AP-1A** | 10 - 30 VDC | • | | 10 mm | | • | • | | cable | 60 | **798.00** |
| **AT1/CP-1A** | 10 - 30 VDC | • | | 10 mm | | • | | • | cable | 60 | **798.00** |
| **AT1/AN-1A** | 10 - 30 VDC | • | | 10 mm | • | | • | | cable | 60 | **798.00** |
| **AT1/CN-1A** | 10 - 30 VDC | • | | 10 mm | • | | | • | cable | 60 | **798.00** |
| **AT1/AP-2A** | 10 - 30 VDC | | • | 15 mm | | • | • | | cable | 60 | **798.00** |
| **AT1/CP-2A** | 10 - 30 VDC | | • | 15 mm | | • | | • | cable | 60 | **798.00** |
| **AT1/AN-2A** | 10 - 30 VDC | | • | 15 mm | • | | • | | cable | 60 | **798.00** |
| **AT1/CN-2A** | 10 - 30 VDC | | • | 15 mm | • | | | • | cable | 60 | **798.00** |
| **Long detection range - NO + NC** | | | | M12 (4pin) plug connection | | | | | | | |
| **AT6/BP-3H*** | 10 - 30 VDC | • | | 15 mm | | • | • | • | M12 plug | 60 | **1 134.00** |
| **AT6/BP-4H*** | 10 - 30 VDC | | • | 20 mm | | • | • | • | M12 plug | 60 | **1 134.00** |
| **AT6/BN-3H*** | 10 - 30 VDC | • | | 15 mm | • | | • | • | M12 plug | 60 | **1 134.00** |
| **AT6/BN-4H*** | 10 - 30 VDC | | • | 20 mm | • | | • | • | M12 plug | 60 | **1 134.00** |
| **2 wire version** | | | | M12 (4pin) plug connection | | | | | | | |
| **AT1/A0-1H** | 10 - 30 VDC | • | | 10 mm | • | • | • | | M12 plug | 76 | **1 260.00** |
| **AT1/A0-2H** | 10 - 30 VDC | | • | 15 mm | • | • | • | | M12 plug | 76 | **1 260.00** |
| **AT1/A0-3H*** | 10 - 30 VDC | • | | 15 mm | • | • | • | | M12 plug | 76 | **1 354.50** |
| **AT1/A0-4H*** | 10 - 30 VDC | | • | 20 mm | • | • | • | | M12 plug | 76 | **1 354.50** |
| **AC version** | | | | cable connection | | | | | | | |
| **VT2/A0-1B** | 20 - 253 VAC | • | | 10 mm | TRIAC | • | | | cable | 80 | **1 669.50** |
| **VT2/C0-1B** | 20 - 253 VAC | • | | 10 mm | TRIAC | | | • | cable | 80 | **1 669.50** |
| **VT2/A0-2B** | 20 - 253 VAC | | • | 15 mm | TRIAC | • | | | cable | 80 | **1 669.50** |
| **VT2/C0-2B** | 20 - 253 VAC | | • | 15 mm | TRIAC | | | • | cable | 80 | **1 669.50** |

* *Long detection range* *See sensor connectors and cables page*

**Analog output proximity switches** 1 x 0-10V and 1 x 4-20mA output

- Voltage 0 - 10 VDC and Current 4 - 20mA outputs *(in the same device)*
- Wide usable detection ranges: M12 *(6 mm)* and M18 *(10 mm)*
- Excellent resolution *(no digitalisation)*

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **M12 proximity switches** | | | | M12 *(4pin)* plug connection | | | | | |
| **AM1/D2-5H** | 15 - 30 VDC | • | | 0...6 mm | **0-10V** | **4-20mA** | M12 plug | 60 | **4 410.00** |
| **M18 proximity switches** | | | | M12 *(4pin)* plug connection | | | | | |
| **AK6/D2-5H** | 15 - 30 VDC | • | | 0...10 mm | **0-10V** | **4-20mA** | M12 plug | 49 | **4 620.00** |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Rectangular housing inductive proximity switches** | | | | | | | | | |
| **8 x 8 x 40 mm rectangular body** | | | | cable connection (2 m) | | | | | |
| **IL8/AP-3A** | 10 - 30 VDC | • | | 2 mm | | • | • | | cable | 40 | **1 879.50** |
| **IL8/CP-3A** | 10 - 30 VDC | • | | 2 mm | | • | | • | cable | 40 | **941.85** |
| **IL8/AN-3A** | 10 - 30 VDC | • | | 2 mm | • | | • | | cable | 40 | **1 879.50** |
| **IL8/CN-3A** | 10 - 30 VDC | • | | 2 mm | • | | | • | cable | 40 | **1 879.50** |
| **28 x 10 x 16 mm rectangular body** | | | | *(aligns with standard mechanical micro switch)* | | | | | | | |
| **IL1/AP-3A** | 10 - 30 VDC | • | | 3 mm | | • | • | | cable | 28 | **720.30** |
| **IL1/CP-3A** | 10 - 30 VDC | • | | 3 mm | | • | | • | cable | 28 | **720.30** |
| **IL1/AN-3A** | 10 - 30 VDC | • | | 3 mm | • | | • | | cable | 28 | **720.30** |
| **IL1/CN-3A** | 10 - 30 VDC | • | | 3 mm | • | | | • | cable | 28 | **720.30** |



Above ZAR prices do not include VAT. E&OE

# Capacitive proximity sensors



C12P/00-3E



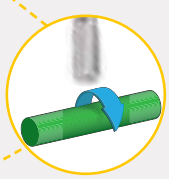
C30P/BN-1E

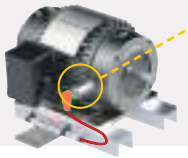


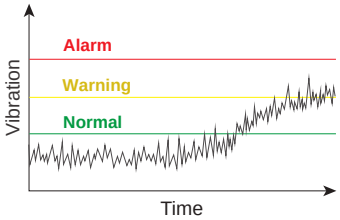
CQ55/BP-3E



VBR1/D0-3A








**Capacitive proximity** sensors are utilised in detection of a variety of materials, whether in solid or liquid state *(e.g. water, wood, metals, granules, powders, etc...)* Performance is upheld even through plastic or glass barriers. The robust nature of the technology ensures extremely high electromagnetic compatibility (EMC), high shock/vibration resistance, minimalistic sensitivity to dust and moisture. This ensures reliable object detection even in harsh environments.

- Detects powders, granulates, liquids and solids
- Sensitivity adjustment
- Short circuit and polarity reversal protection
- Protection degree: IP67/68/69K
- Ambient limits: -25ºC/-20ºC...+85°C
- LED indication: Incorporated
- Housing material: Thermoplastic polyester

| type | supply voltage | flush | non flush | detection distance | NPN | PNP | NO | NC | connector | body length (mm) | price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M12 Capacitive proximity switches** | | | | | | | | | M12 *(4pin)* plug connection | | |
| • Adjustable sensitivity via Teach-in button<br>• Automatic detection of NPN or PNP load | | | | | | | | | | | |
| **C12P/00-3E** | 10 - 40 VDC | • | | 0.5…8 mm | • | • | • | • | M12 plug | 80 | **1 869.00** |
| **M18 Capacitive proximity switches** | | | | | | | | | M12 *(4pin)* plug connection | | |
| • Adjustable sensitivity via potentiometer<br>• Standard output: NO and NC | | | | | | | | | | | |
| **C18P/BP-1E** | 10 - 40 VDC | • | | 3…8 mm | | • | • | • | M12 plug | 83 | **1 837.50** |
| **C18P/BN-1E** | 10 - 40 VDC | • | | 3…8 mm | • | | • | • | M12 plug | 83 | **1 837.50** |
| **C18P/BP-2E** | 10 - 40 VDC | | • | 3…12 mm | | • | • | • | M12 plug | 91 | **1 753.50** |
| **C18P/BN-2E** | 10 - 40 VDC | | • | 3…12 mm | • | | • | • | M12 plug | 91 | **1 753.50** |
| **AC version** | | | | cable connection (2m) | | | | | | | |
| **C18P/A0-1A** | 20 - 250 VAC | • | | 3…8 mm | SCR | | • | | cable | 87 | **2 331.00** |
| **C18P/C0-1A** | 20 - 250 VAC | • | | 3…8 mm | SCR | | | • | cable | 87 | **2 331.00** |
| **C18P/A0-2A** | 20 - 250 VAC | | • | 3…12 mm | SCR | | • | | cable | 99 | **2 247.00** |
| **C18P/C0-2A** | 20 - 250 VAC | | • | 3…12 mm | SCR | | | • | cable | 99 | **2 247.00** |
| **M30 Capacitive proximity switches** | | | | | | | | | M12 *(4pin)* plug connection | | |
| • Adjustable sensitivity via potentiometer<br>• Standard output: NO and NC | | | | | | | | | | | |
| **C30P/BP-1E** | 10 - 40 VDC | • | | 2…16 mm | | • | • | • | M12 plug | 79 | **2 247.00** |
| **C30P/BN-1E** | 10 - 40 VDC | • | | 2…16 mm | • | | • | • | M12 plug | 79 | **2 247.00** |
| **C30P/BP-2E** | 10 - 40 VDC | | • | 4…25 mm | | • | • | • | M12 plug | 91 | **2 121.00** |
| **C30P/BN-2E** | 10 - 40 VDC | | • | 4…25 mm | • | | • | • | M12 plug | 91 | **2 121.00** |
| **AC version** | | | | cable connection (2m) | | | | | | | |
| **C30P/00-1A** | 20 - 250 VAC | • | | 2…16 mm | SCR | | • | • | cable | 79 | **2 761.50** |
| **C30P/00-2A** | 20 - 250 VAC | | • | 4…25 mm | SCR | | • | • | cable | 91 | **2 562.00** |
| **Cubic capacitive sensors** *(flat pack housing)* | | | | | | | | | | | |
| • Adjustable sensitivity via potentiometer<br>• Standard output: NO and NC | | | | | | | | | | | |
| **CQ55 series cubic sensors** *(flat body)* | | | | M12 *(4pin)* plug connection | | | | | *58 x 35 x 15 mm* | | |
| **CQ55/BP-3E** | 10 - 40 VDC | • | | 4…25 mm | | • | • | • | M12 plug | 58 | **2 467.50** |
| **CQ55/BN-3E** | 10 - 40 VDC | • | | 4…25 mm | • | | • | • | M12 plug | 58 | **2 467.50** |

**M18 VBR/INC series - Vibration and inclination sensor** **IP67**

VBR series shock and vibration sensor incorporates a MEMS 3-axis accelerometer to monitor all accelerations and vibrations. Designed to be easy to use without any special training for operators.

| | VBR | INC |
|---|---|---|
| • Programmable operating range: | ±2g, ±4g, ±8g, ±16g | 360° - 0.025° resolution |
| • Reference axis: | 3 (X, Y, Z) | 1 direction |
| • Frequency range: | 0 … 400Hz | < 3 msec |

- Fully programmable in all its functions, thresholds, alarms and node addresses
- 1 output RS485 *(addressable)* 57600 Baud rate - 1 bit stop - parity
- 1 analogue output *(programmable voltage or current)*

| | | | | | | |
|---|---|---|---|---|---|---|
| **VBR1/D0-3A** | 24 VDC | vibration sensor | 0 - 10V / 4-20mA | cable | 40.5 | **6 268.50** |
| **INC1/D0-3A** | 24 VDC | inclination sensor | 0 - 10V / 4-20mA | cable | 50.5 | **7 927.50** |

*1250Hz available on request*

**Mounting accessories for VBR/INC sensors**

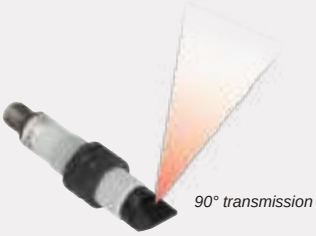
| | | | |
|---|---|---|---|
| **ST18-S** | bracket | M18 mounting bracket/housing for above VBR/INC sensor | **137.55** |
| **ST18-V** | bracket | M18 metal mounting bracket for above VBR/INC sensor | **106.05** |

**Photoelectric sensors** transmit a beam which is reflected back from a detected object ***(diffused),*** reflector ***(retro-reflective)*** or used with a separate transmitter and receiver ***(through-beam),*** typically used for long range detection.

- Protection degree: IP67 (EN60529)
- Ambient limits: -25ºC...+70°C
- Supply protection: Polarity reversal, transient, short circuit
- LED indication: Incorporated
- Housing material: PBT *(plastic)* available in metal *(on request only)*



FAI6/BP-0A



90° transmission

FAI6/BN-2E



MV2/A0-0A



MVC/A0-0A

| type | supply voltage | sensitivity adj. | diffused | retro-reflective | polarised retro | through-beam | detection distance (mm) | NPN | PNP | NO | NC | connector | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **M18 FA series axial beam** | *10 - 30 VDC* | **IP67** *(EN60529)* | | | | | Ø18 mm x 65/80 mm | | | | | | |
| **Diffuse reflection** | | *proximity type detection (no transmitter or reflector required)* | | | | | | | | | | | |
| **FAR2/BN-0A** | 10 - 30 VDC | | • | | | | 100 mm | • | | • | • | cable (2m) | **1 134.00** |
| **FAR2/BP-0A** | 10 - 30 VDC | | • | | | | 100 mm | | • | • | • | cable (2m) | **1 134.00** |
| **FAI6/BN-0A** | 10 - 30 VDC | | • | | | | 400 mm | • | | • | • | cable (2m) | **1 249.50** |
| **FAI6/BP-0A** | 10 - 30 VDC | | • | | | | 400 mm | | • | • | • | cable (2m) | **1 249.50** |
| **FAI6/BN-2E*** | 10 - 30 VDC | | • | | | | 400 mm | • | | • | • | M12 plug | **1 470.00** |
| **FAI6/BP-2E*** | 10 - 30 VDC | | • | | | | 400 mm | | • | • | • | M12 plug | **1 470.00** |
| **FAI7/BN-0E** | 10 - 30 VDC | • | • | | | | 400 mm | • | | • | • | M12 plug | **1 470.00** |
| **FAI7/BP-0E** | 10 - 30 VDC | • | • | | | | 400 mm | | • | • | • | M12 plug | **1 470.00** |
| **FAI8/BN-2E*** | 10 - 30 VDC | • | • | | | | 800 mm | • | | • | • | M12 plug | **1 858.50** |
| **FAI8/BP-2E*** | 10 - 30 VDC | • | • | | | | 800 mm | | • | • | • | M12 plug | **1 858.50** |
| **FAI8/BN-0E** | 10 - 30 VDC | • | • | | | | 1000 mm | • | | • | • | M12 plug | **1 596.00** |
| **FAI8/BP-0E** | 10 - 30 VDC | • | • | | | | 1000 mm | | • | • | • | M12 plug | **1 596.00** |
| **With adjustable background suppression** | | | | | | | | | | | | | |
| **FARS/BP-0E** | 10 - 30 VDC | • | • | | | | 30…130 | | • | • | • | M12 plug | **2 425.50** |
| **FARW/BP-0E** | 10 - 30 VDC | • | • | | | | 35…350 | | • | • | • | M12 plug | **2 940.00** |
| **Retro-reflective** | | *used together with a reflector* | | | | | | | | | | | |
| **FAIC/BN-0A** | 10 - 30 VDC | | | • | | | 5 meters | • | | • | • | cable (2m) | **1 165.50** |
| **FAIC/BP-0A** | 10 - 30 VDC | | | • | | | 5 meters | | • | • | • | cable (2m) | **1 165.50** |
| **FAIC/BN-2E*** | 10 - 30 VDC | | | • | | | 4 meters | • | | • | • | M12 plug | **1 386.00** |
| **FAIC/BP-2E*** | 10 - 30 VDC | | | • | | | 4 meters | | • | • | • | M12 plug | **1 386.00** |
| **Retro-reflective** | **(polarised)** | *used together with a reflector* | | | | | | | | | | | |
| **FARP/BN-0A** | 10 - 30 VDC | | | | • | | 4 meters | • | | • | • | cable (2m) | **1 365.00** |
| **FARP/BP-0A** | 10 - 30 VDC | | | | • | | 4 meters | | • | • | • | cable (2m) | **1 365.00** |
| **Through beam** | *(receiver)* | *requires an emitter and receiver* | | | | | | | | | | | |
| **FAIZ/BN-0A** | 10 - 30 VDC | | | | | • | 20 meters | • | | • | • | cable (2m) | **1 081.50** |
| **FAIZ/BP-0A** | 10 - 30 VDC | | | | | • | 20 meters | | • | • | • | cable (2m) | **1 081.50** |
| **FAIZ/BP-2E*** | 10 - 30 VDC | | | | | • | 15 meters | | • | • | • | M12 plug | **1 281.00** |
| **FAIH/00-0A** | 10 - 30 VDC | | | | | • | 20 meters | emitter | | | | cable (2m) | **931.35** |
| **FAIH/00-2E*** | 10 - 30 VDC | | | | | • | 15 meters | emitter | | | | M12 plug | **1 155.00** |
| * *Radial optic (90° transmission)* | | | | | | | | | | | | | |
| **M18 MV series axial beam** | *20 - 253 VAC* | **IP67** *(EN60529)* | | | | | Ø18 mm x 79 mm | | | | | | |
| **Diffuse reflection** | | *proximity type detection (no transmitter or reflector required)* | | | | | | | | | | | |
| **MV2/A0-0A** | 20 - 253 VAC | | • | | | | 100 mm | TRIAC | • | | | cable (2m) | **2 152.50** |
| **MV2/C0-0A** | 20 - 253 VAC | | • | | | | 100 mm | TRIAC | | • | | cable (2m) | **2 152.50** |
| **MV4/A0-0A** | 20 - 253 VAC | | • | | | | 200 mm | TRIAC | • | | | cable (2m) | **2 152.50** |
| **MV4/C0-0A** | 20 - 253 VAC | | • | | | | 200 mm | TRIAC | | • | | cable (2m) | **2 152.50** |
| **MV6/A0-0A** | 20 - 253 VAC | | • | | | | 400 mm | TRIAC | • | | | cable (2m) | **2 247.00** |
| **MV6/C0-0A** | 20 - 253 VAC | | • | | | | 400 mm | TRIAC | | • | | cable (2m) | **2 247.00** |
| **Retro-reflective** | 20 - 253 VAC | *used together with a reflector* | | | | | | | | | | | |
| **MVC/A0-0A** | 20 - 253 VAC | | | • | | | 4 meters | TRIAC | • | | | cable (2m) | **2 247.00** |
| **MVC/C0-0A** | 20 - 253 VAC | | | • | | | 4 meters | TRIAC | | • | | cable (2m) | **2 247.00** |
| **Through beam** | (receiver) | *requires a transmitter and receiver* | | | | | | | | | | | |
| **MVR/A0-0A** | 20 - 253 VAC | | | | | • | 16 meters | TRIAC | • | | | cable (2m) | **2 016.00** |
| **MVR/C0-0A** | 20 - 253 VAC | | | | | • | 16 meters | TRIAC | | • | | cable (2m) | **2 016.00** |
| **MVE/00-0A** | 20 - 253 VAC | | | | | • | 16 meters | emitter | | | | cable (2m) | **1 627.50** |

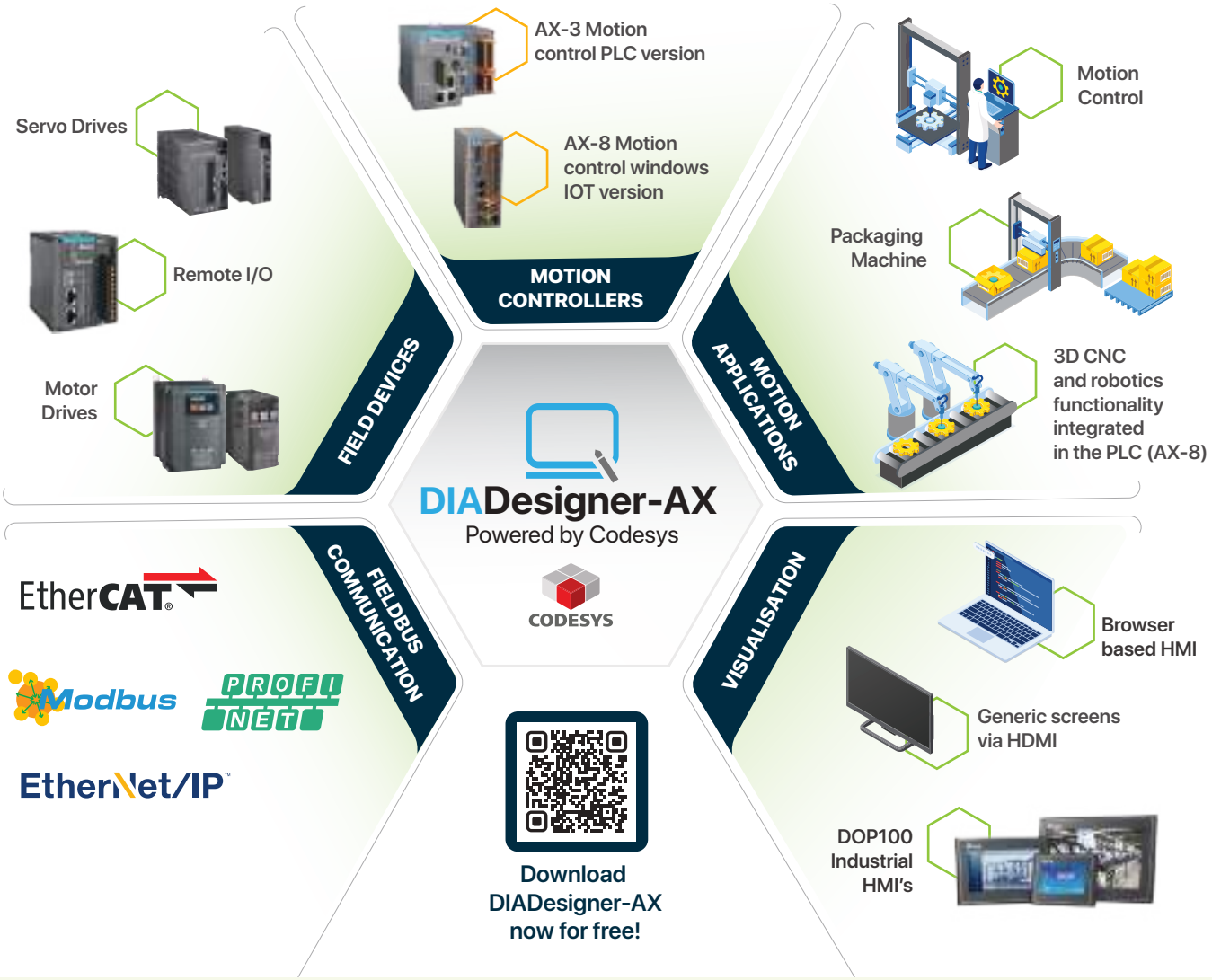
*For mounting accessories, cables, connectors and reflectors see pages **K-11**, **K-23...24***



Above ZAR prices do not include VAT. E&OE

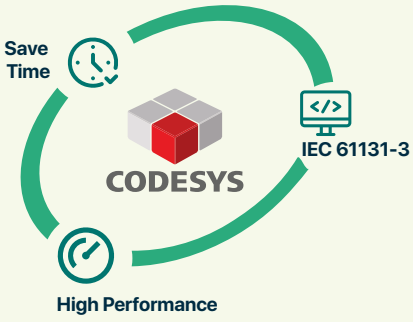
# The comprehensive automation software

DIADesigner AX powered by Codesys offers a comprehensive PLC and motion-control software development solution. With adherence to the IEC 61131-3 standard, users can expect a familiar and internationally recognised programming environment. It is the perfect platform for integrating components like Delta PLCs, HMIs, servos, motor drives, and remote I/O, making it a versatile choice for automation projects.




## DIADesigner-AX key features:

- **Comprehensive Editors:** Supports all IEC 61131-3 editors (FBD, LD, ST, SFC) and their variants
- **Proven Libraries:** Extensive library concept for reusable applications
- **Advanced Debugging:** Fast optimization and testing with extensive debugging and online features
- **Device Compatibility:** Intergrate devices from various manufacturers
- **Versatile POUs:** Support for single and multi-axis movements with PLCopen POUs
- **Dynamic Monitoring:** Additional POUs for monitoring dynamic data, error tracking, and CAM controllers





**S3N mini series** - Photoelectric cubic sensors

## S3N mini series - Cubic photoelectric sensors

Top performances series in a rugged, miniaturized standard housing. Complete solution for any detection application in any automation industry. Available with trimmer and Teach-in models with high connectivity features thanks to extended IO-Link communication.

**General features:**

- Bright LED and Safe Laser emission models - for easy alignment
- Smart BGS and clear detection functions
- Single, Double trimmer & Push Button models - for easy setup
- Rugged IP67 Plastic Polymer Fibre glass reinforced miniature case
- IO-Link with extended Smart Tasks
- Sensitivity adjustment via 1 or 9 turn trimmer
- Compact dimensions: *(H) 31 x (W) 11 x (D) 19 mm*

Scan to watch video

New

Robust housing



SN3...





SN3...

| type | supply voltage | diffused | polarised retro | through-beam | backgrnd suppress | t/parent objects | mark reader | detection distance (mm) | NPN | PNP | light ON | dark ON | connector | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Diffused narrow beam** | | | | | | | | *635 nm red LED emission* | | | | | | |
| **S3N-PR-5-C01-PL** | 10…30 VDC | • | | | | | | 1…250 mm | | • | • | | M8 plug | **3 412.50** |
| **S3N-PR-5-C01-PD** | 10…30 VDC | • | | | | | | 1…250 mm | | • | | • | M8 plug | **3 412.50** |
| **S3N-PR-5-C01-N** | 10…30 VDC | • | | | | | | 1…250 mm | • | | • | • | M8 plug | **3 948.00** |
| **S3N-PR-5-C11-PL** | 10…30 VDC | • | | | | | | 0…1 m | | • | • | | M8 plug | **3 391.50** |
| **Polarized retroreflective** | | | | | | | | *635 nm red LED emission* | | | | | | |
| **S3N-PR-5-B01-PL** | 10…30 VDC | | • | | | | | 0.05…7 m | | • | • | | M8 plug | **3 433.50** |
| **S3N-PR-5-B01-PD** | 10…30 VDC | | • | | | | | 0.05…7 m | | • | | • | M8 plug | **3 433.50** |
| **S3N-PR-5-B01-N** | 10…30 VDC | | • | | | | | 0.05…7 m | • | | • | • | M8 plug | **3 990.00** |
| **Through beam emitter and receiver** | | | | | | | | *635 nm red LED emission* | | | | | | |
| **S3N-PR-5-FG01-PL** | 10…30 VDC | | | • | | | | 0…20 m | | • | • | | M8 plug | **5 911.50** |
| **S3N-PR-5-FG01-PD** | 10…30 VDC | | | • | | | | 0…20 m | | • | | • | M8 plug | **5 911.50** |
| **S3N-PR-5-FG01-N** | 10…30 VDC | | | • | | | | 0…20 m | • | | • | • | M8 plug | **6 688.50** |
| **Background suppression** | | | | | | | | *635 nm red LED emission* | | | | | | |
| **S3N-PR-5-M01-PL** | 10…30 VDC | | | | • | | | 10…800 mm | | • | • | | M8 plug | **5 460.00** |
| **S3N-PR-5-M01-PD** | 10…30 VDC | | | | • | | | 10…800 mm | | • | | • | M8 plug | **5 460.00** |
| **S3N-PR-5-M01-N** | 10…30 VDC | | | | • | | | 10…800 mm | • | | • | • | M8 plug | **6 205.50** |
| **Polarized retroreflective for clear objects** | | | | | | | | *635 nm red LED emission* | | | | | | |
| **S3N-PR-5-T51-PL** | 10…30 VDC | | | | | • | | 0…2 m | | • | • | | M8 plug | **5 386.50** |
| **S3N-PR-5-T51-PD** | 10…30 VDC | | | | | • | | 0…2 m | | • | | • | M8 plug | **5 386.50** |
| **S3N-PR-5-T51-N** | 10…30 VDC | | | | | • | | 0…2 m | • | | • | • | M8 plug | **6 058.50** |
| **Laser emission sensors** | | | | | | | | | | | | | | |
| **Polarized retroreflective** | | | | | | | | *650 nm LASER Red class 1* | | | | | | |
| **S3N-PH-5-B01-P** | 10…30 VDC | | • | | | | | 0.1…12 m | | • | • | • | M8 plug | **6 426.00** |
| **S3N-PH-5-B01-N** | 10…30 VDC | | • | | | | | 0.1…12 m | • | | • | • | M8 plug | **6 426.00** |
| **Through beam emitter and receiver** | | | | | | | | *650 nm LASER Red class 1* | | | | | | |
| **S3N-PH-5-FG01-P** | 10…30 VDC | | | • | | | | 0…30 m | | • | • | • | M8 plug | **8 484.00** |
| **S3N-PH-5-FG01-N** | 10…30 VDC | | | • | | | | 0…30 m | • | | • | • | M8 plug | **8 484.00** |
| **Background suppression** | | | | | | | | *650 nm LASER Red class 1* | | | | | | |
| **S3N-PH-5-M01-P** | 10…30 VDC | | | | • | | | 10…500 mm | | • | • | • | M8 plug | **7 497.00** |
| **S3N-PH-5-M01-N** | 10…30 VDC | | | | • | | | 10…500 mm | • | | • | • | M8 plug | **7 497.00** |

### Accessories for S3N sensors

| | | | | |
|---|---|---|---|---|
| **95A151340** | reflector | R4 - prismatic refl. 47x47 mm - frame 51x61 mm | for reflex | **262.50** |
| **95A151360** | reflector | R7 - microprismatic refl. 38x40 mm - frame 51x61 mm | for laser | **935.55** |
| **S940700075** | reflector | R5 - prismatic refl. Ø 75 mm - frame Ø 82 mm | for reflex | **216.30** |
| **95ACC0024** | mnt bracket | S3N L-shaped mnt bracket | **ST-1051** | **1 009.05** |
| **95ACC0025** | mnt bracket | S3N protection mnt bracket-horizontal | **ST-1049** | **1 617.00** |
| **95ACC0026** | mnt bracket | S3N protection mnt bracket-vertical U shaped | **QM ST-103** | **1 617.00** |
| **95ACC0033** | mnt bracket | S3N bracket for M03 products over the belt app. | **ST-1053** | **1 816.50** |

*See sensor connectors and cables page*



Above ZAR prices do not include VAT. E&OE









IO-Link




## S3N mini series - Photoelectric IO-Link communication

Top performances series in a rugged, miniaturized standard housing. Complete solution for any detection application in any automation industry. Available with trimmer and Teach-in models with high connectivity features thanks to extended IO-Link communication.

- Bright LED and Safe Laser emission models - for easy alignment
- Smart BGS and clear detection functions
- Single, Double trimmer & Push Button models - for easy setup
- Very fast and very precise RGB Contrast sensor
- Rugged IP67 Plastic Polymer Fiber glass reinforced miniature case
- IO-Link with extended Smart Tasks
- IO-Link models have Teach-In push button
- Compact dimensions: *(H) 31 x (W) 11 x (D) 19 mm*

| type | supply voltage | diffused | polarised retro | through-beam | backgrnd suppress | t/parent objects | mark reader | detection distance (mm) | communication interface | connector | price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Diffused narrow beam** | | | | | | | | *635 nm red LED emission* | | | |
| **S3N-PR-5-C03-OZ** | 10…30 VDC | • | | | | | | 1…250 mm | IO-Link | M8 plug | **6 111.00** |
| **S3N-PR-5-C13-OZ** | 10…30 VDC | • | | | | | | 0…1 m | IO-Link | M8 plug | **6 048.00** |
| **Polarized retroreflective** | | | | | | | | *635 nm red LED emission* | | | |
| **S3N-PR-5-B03-OZ** | 10…30 Vdc | | • | | | | | 0.05…7 m | IO-Link | M8 plug | **6 216.00** |
| **Through beam emitter and receiver** | | | | | | | | *635 nm red LED emission* | | | |
| **S3N-PR-5-FG03-OZ** | 10…30 VDC | | | • | | | | 0…20 m | IO-Link | M8 plug | **10 920.00** |
| **Background suppression** | | | | | | | | *635 nm red LED emission* | | | |
| **S3N-PR-5-M03-OZ** | 10…30 VDC | | | | • | | | 25…180 mm | IO-Link | M8 plug | **7 182.00** |
| **Polarized retroreflective for clear objects** | | | | | | | | *635 nm red LED emission* | | | |
| **S3N-PR-5-T53-OZ** | 0…30 VDC | | | | | • | | 0…2 m | IO-Link | M8 plug | **7 266.00** |
| **Contrast sensor** | | | | | | | | *RGB blue (460 nm) / green (525 nm) / red (633 nm)* | | | |
| **S3N-PR-5-W03-OZ** | 10…30 VDC | | | | | | • | 12 mm ±3 mm | IO-Link | M8 plug | **24 990.00** |
| **Laser emission sensors** | | | | | | | | | | | |
| **Polarized retroreflective** | | | | | | | | *650 nm LASER Red class 1* | | | |
| **S3N-PH-5-B03-OZ** | 10…30 VDC | | • | | | | | 0.1…12 m | IO-Link | M8 plug | **8 526.00** |
| **Through beam emitter and receiver** | | | | | | | | *650 nm LASER Red class 1* | | | |
| **S3N-PH-5-FG03-OZ** | 10…30 VDC | | | • | | | | 0…30 m | IO-Link | M8 plug | **14 910.00** |
| **Background suppression** | | | | | | | | *650 nm LASER Red class 1* | | | |
| **S3N-PH-5-M03-OZ** | 10…30 VDC | | | | • | | | 22…130 mm | IO-Link | M8 plug | **11 340.00** |

## S3N mini: Position tracking applications

IO-Link

– Easy installation

– Extended configuration

– Real time monitoring

– Predictive maintenance





Footprint comparison

**Photoelectric sensors** transmit a beam which is reflected back from a detected object ***(diffused)***, reflector ***(retro-reflective)*** or used with a separate transmitter and receiver ***(through-beam)***, typically used for long range detection.

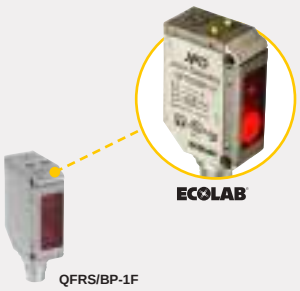
- Sensitivity: Adjustable *(trimmer)*
- Ambient limits: -25ºC...+70°C
- Supply protection: Polarity reversal, impulse overvoltage, short circuit
- LED indication: Yellow *(output status)* / green *(supply present)*

| type | supply voltage | diffused | retro-reflective | polarised retro | through-beam | detection distance (mm) | NPN | PNP | NO | NC | connector | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **QM series - Miniature cubic sensor** | | *IP67 (EN60529)* | | | | (H) 40.6 x (W) 21 x (D) 13 mm | | | | | | |
| • Miniaturize high performance photoelectric sensors<br>• 2 kHz switching frequency<br>• Selectable LO/DO output state<br>• M8 *(4pin)* plug connection | | | | | | | | | | | | |
| **Diffuse reflection** | | *proximity type detection (no transmitter or reflector required)* | | | | | | | | | | |
| **QMRS/0P-0F*** | 10 - 30 VDC | • | | | | 30…200 | | • | • | • | M8 plug | **2 299.50** |
| **QMR7/0N-0F** | 10 - 30 VDC | • | | | | 400 mm | • | | • | • | M8 plug | **1 858.50** |
| **QMR7/0P-0F** | 10 - 30 VDC | • | | | | 400 mm | | • | • | • | M8 plug | **1 858.50** |
| **QMR8/0N-0F** | 10 - 30 VDC | • | | | | 1 meter | • | | • | • | M8 plug | **1 942.50** |
| **QMR8/0P-0F** | 10 - 30 VDC | • | | | | 1 meter | | • | • | • | M8 plug | **1 942.50** |
| **QMI9/0P-0F** | 10 - 30 VDC | • | | | | 1.5 meter | | • | • | • | M8 plug | **2 058.00** |
| * *With adjustable background suppression* | | | | | | | | | | | | |
| **Retro-reflective** | | *used together with a reflector* | | | | | | | | | | |
| **QMIC/0P-0F** | 10 - 30 VDC | | • | | | 7 meter | | • | • | • | M8 plug | **2 068.50** |
| **Retro-reflective** | **(polarised)** | *used together with a reflector* | | | | | | | | | | |
| **QMRN/0N-0F** | 10 - 30 VDC | | | • | | 5 meter | • | | • | • | M8 plug | **2 068.50** |
| **QMRN/0P-0F** | 10 - 30 VDC | | | • | | 5 meter | | • | • | • | M8 plug | **2 068.50** |
| **Retro-reflective** | | *(transparent objects)* | | | | | | | | | | |
| **QMRL/0N-0F** | 10 - 30 VDC | | • | | | 0.4...4 m | • | | • | • | M8 plug | **2 436.00** |
| **QMRL/0P-0F** | 10 - 30 VDC | | • | | | 0.4...4 m | | • | • | • | M8 plug | **2 436.00** |
| **Through beam** | | *(transmitter and receiver kit)* | | | | | | | | | | |
| **QMRHD/0N-0F** | 10 - 30 VDC | | | | • | 20 meter | • | | • | • | M8 plug | **3 171.00** |
| **QMRHD/0P-0F** | 10 - 30 VDC | | | | • | 20 meter | | • | • | • | M8 plug | **3 171.00** |
| **QF series - For food and beverage applications** | | | | | | (H) 31.4 x (W) 21 x (D) 11 mm | | | | | | |
| • M8 *(4pin)* plug connection<br>• -26ºC...+60ºC *(without freeze)*<br>• IP67 (EN60529) - IP68 *(1m - 7 days)* - IP69K protection degree<br>• AISI 316L (DIN 1.4404) stainless steel housing - Active head PPSU<br>• Approvals: CE cULus, ECOLAB, IEC60947-5-2 | | | | | | | | | | | | |
| **Diffuse reflection** | | *proximity type detection (no transmitter or reflector required)* | | | | | | | | | | |
| **QFI4/BP-1F** | 10 - 30 VDC | • | | | | 20…200 | | • | • | • | M8 plug | **2 688.00** |
| **QFRS/BP-1F*** | 10 - 30 VDC | • | | | | 25…200 | | • | • | • | M8 plug | **3 412.50** |
| **QFR8/BP-1F** | 10 - 30 VDC | • | | | | 0.1…1 m | | • | • | • | M8 plug | **2 740.50** |
| * *With adjustable background suppression* | | | | | | | | | | | | |
| **Retro-reflective** | **(polarised)** | *used together with a reflector* | | | | | | | | | | |
| **QFRN/BP-1F** | 10 - 30 VDC | | | • | | 6 meter | | • | • | • | M8 plug | **2 740.50** |


QMR7/0P-0F


QMRN/0N-0F


QMIC/0N-0F



QFRS/BP-1F

**Accessories** for above QM / QF series

| | | | |
|---|---|---|---|
| **ST 101** | metal | vertical mounting L shaped bracket for sensors | QM/QF | **152.25** |
| **ST 102** | metal | side mounting vertical L bracket for sensors | QM/QF | **152.25** |
| **ST 103** | metal | vertical mount with protective cover bracket for | QM/QF | **372.75** |
| **ST 104** | metal | horizontal mount protective cover bracket for | QM/QF | **288.75** |
| **STQMO** | adaptor | vertical/horizontal diaphragms (0.5-1-2) for | QM/QF | **489.30** |

*Mounting accessories and reflectors see page **K-11** (reflectors sold separately)*
*See sensor connectors and cables page*



Above ZAR prices do not include VAT. E&OE

**Photoelectric sensors** transmit a beam which is reflected back from a detected object ***(diffused),*** reflector ***(retro-reflective)*** or used with a separate transmitter and receiver ***(through-beam),*** typically used for long range detection.


Q50I8/B0-0E


Q50RN/0T-0A

| type | supply voltage | diffused | retro-reflective | polarised retro | through-beam | detection distance (mm) | NPN | PNP | NO | NC | connector | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Q50 - Compact cubic universal photoelectric sensor** | | | | | | | | | | | | |
| • Universal photoelectric sensor, excellent performance and high versatility<br>• Totally protected against electrical damage<br>• Sensitivity: Adjustable<br>• Dimensions: 50 x 50 x 17 mm<br>• Protection degree: IP67 (EN60529)<br>• Mounting: Bracket included | | | | | | | | | | | | |
| **DC supply 10…30 VDC** | | | | | | | | | | | | |
| • Revolving M12 *(4 pin)* connector *(for rear or bottom cable entry)* | | | | | | | | | | | | |
| **Diffuse reflection** | *proximity type detection (no transmitter or reflector required)* | | | | | | | | | | | |
| **Q50I8/B0-0E** | 10 - 30 VDC | • | | | | 0.3...2 m | • | • | • | • | M12 plug | **2 005.50** |
| **Q50IS/B0-0E*** | 10 - 30 VDC | • | | | | 120…500 | • | • | • | • | M12 plug | **3 654.00** |
| * *With adjustable background suppression* | | | | | | | | | | | | |
| **Retro-reflective -** *(polarised)* | *used together with a reflector* | | | | | | | | | | | |
| **Q50RN/B0-0E** | 10-30 VDC | | | • | | 0.2...6 m | • | • | • | • | M12 plug | **2 247.00** |
| **Through beam** *(receiver)* | *requires a transmitter and receiver* | | | | | | | | | | | |
| **Q50ID/B0-0E** | 10 - 30 VDC | | | | • | 20 meter | • | • | • | • | M12 plug | **1 827.00** |
| **Q50IH/00-0E** | 10 - 30 VDC | | | | • | 20 meter | emitter | | | | M12 plug | **1 543.50** |
| **Multi-voltage supply 12…240 VDC / 24…240 VAC** | | | | | | | | | | | | |
| • Relay - SPDT output (3A / 240 VAC) | | | | | | | | | | | | |
| **Diffuse reflection** | *proximity type detection (no transmitter or reflector required)* | | | | | | | | | | | |
| **Q50I8/0T-0A** | multi-voltage | • | | | | 0.3...2 m | SPDT | | | | cable | **2 415.00** |
| **Retro-reflective -** *(polarised)* | *used together with a reflector* | | | | | | | | | | | |
| **Q50RN/0T-0A** | multi-voltage | | | • | | 0.2...6 m | SPDT | | | | cable | **2 656.50** |
| **Through beam** *(receiver)* | *requires a transmitter and receiver* | | | | | | | | | | | |
| **Q50ID/0T-0A** | multi-voltage | | | | • | 20 meter | SPDT | | | | cable | **2 362.50** |
| **Q50IH/0T-0A** | multi-voltage | | | | • | 20 meter | emitter | | | | cable | **1 596.00** |





QX3/A0-1A



QXR/A0-1A



BS8/00-0C



ST300D



RL 110

| type | supply voltage | diffused | retro-reflective | polarised retro | through-beam | detection distance (mm) | NPN | PNP | NO | NC | connector | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **QX series** *(rectangular)* | | *IP65 (EN60529)* | | | | | | | | | 40 x 15 x 23 mm | |
| **Diffuse reflection** | | *proximity type detection (no transmitter or reflector required)* | | | | | | | | | | |
| **QX3/A0-1A** | 10 - 30 VDC | • | | | | 300 mm | • | • | • | | cable (2m) | **3 475.50** |
| **QX3/C0-1A** | 10 - 30 VDC | • | | | | 300 mm | • | • | | • | cable (2m) | **3 475.50** |
| **Retro-reflective** | | *used together with a reflector* | | | | | | | | | | |
| **QXC/A0-1A** | 10 - 30 VDC | | • | | | 5 meter | • | • | • | | cable (2m) | **3 549.00** |
| **QXC/C0-1A** | 10 - 30 VDC | | • | | | 5 meter | • | • | | • | cable (2m) | **3 549.00** |
| **Through beam** | *(receiver)* | *requires a transmitter and receiver* | | | | | | | | | | |
| **QXR/A0-1A** | 10 - 30 VDC | | | | • | 8 meter | • | • | • | | cable (2m) | **3 475.50** |
| **QXR/C0-1A** | 10 - 30 VDC | | | | • | 8 meter | • | • | | • | cable (2m) | **3 475.50** |
| **QXX/00-1A** | 10 - 30 VDC | | | | • | 8 meter | emitter | | | | cable (2m) | **2 320.50** |
| **BS/BV series** *(rectangular)* **cubic photoelectric sensors** | | | | | | | | | | | 37 x 16 x 64/70 mm | |
| • Sensitivity: Adjustable<br>• LED indication: Incorporated<br>• Protection degree: IP65 (EN60529)<br>• Supply protection: Transient, short circuit (BS) | | | | | | | | | | | | |
| **Diffuse reflection** | | *proximity type detection (no transmitter or reflector required)* | | | | | | | | | | |
| **BS6/00-0C** | 10 - 30 VDC | • | | | | 400 mm | • | • | • | • | cable (2m) | **2 793.00** |
| **BS8/00-0C** | 10 - 30 VDC | • | | | | 1.6 meter | • | • | • | • | cable (2m) | **2 877.00** |
| **BV4/00-0C** | 20 - 253 VAC | • | | | | 200 mm | TRIAC | | • | • | cable (2m) | **3 486.00** |
| **BV6/00-0C** | 20 - 253 VAC | • | | | | 400 mm | TRIAC | | • | • | cable (2m) | **3 612.00** |
| **Retro-reflective** | | *used together with a reflector* | | | | | | | | | | |
| **BSC/00-0C** | 10 - 30 VDC | | • | | | 8 meter | • | • | • | • | cable (2m) | **2 793.00** |
| **BVC/00-0C** | 20 - 253 VAC | | • | | | 8 meter | TRIAC | | • | • | cable (2m) | **3 612.00** |
| *Mounting accessories - (below)* *See sensor connectors and cables page* | | | | | | | | | | | | |

**DC sensor tester**

The **ST300D** is a compact and highly flexible accessory for DC sensor testing. Suitable for offline functionality testing on photoelectric, proximity and ultrasonic sensors. The unit comes equipped with an onboard *(non-removable)* Li-ion battery.

| type | supply voltage | description | NPN | PNP | NO | NC | connector | price |
|---|---|---|---|---|---|---|---|---|
| **ST300D** | 24 VDC | DC sensor functionality tester | • | • | | | terminal post | **4 147.50** |

**Accessories for proximity / photoelectric / ultrasonic sensor**

| **Mounting accessories for sensors** | | | | |
|---|---|---|---|---|
| **ST 02** | plastic | adjustable swivel mounting bracket for all | M18 sensors | **274.05** |
| **ST 18-A** | metal | axial mounting bracket for all | M18 sensors | **38.43** |
| **ST 18-C** | metal | right angled mounting bracket for all | M18 sensors | **51.45** |
| **ST 30-A** | metal | axial mounting bracket for all | M30 sensors | **103.95** |
| **ST 30-C** | metal | right angled mounting bracket for all | M30 sensors | **128.10** |
| **ST 01** | metal | mounting bracket for rectangular sensors | BS - BV | **50.40** |
| **ST 80** | metal | top mount bracket for rectangular sensors | RX | **107.10** |
| **ST 81** | metal | side mount bracket for rectangular sensors | RX | **107.10** |
| **ST 101** | metal | vertical mounting L shaped bracket for sensors | QM/QF | **152.25** |
| **ST 102** | metal | side mounting vertical L bracket for sensors | QM/QF | **152.25** |
| **ST 103** | metal | vertical mount with protective cover bracket for | QM/QF | **372.75** |
| **ST 104** | metal | horizontal mount protective cover bracket for | QM/QF | **288.75** |
| **STQMO** | adaptor | vertical/horizontal diaphragms (0.5-1-2) for | QM/QF | **489.30** |
| **ST 03** | adaptor | right angled beam adaptor for photoelectric | M18 sensors | **342.30** |
| **ST 03U** | adaptor | right angled beam deflector for ultrasonic | M18 sensors | **936.60** |

| **Reflectors for photoelectric switches** | | | | (H) | (W) | (D) | Ø | |
|---|---|---|---|---|---|---|---|---|
| **RL 103** | 02232510 | round | reflector | – | 7.4 | – | 34.5 | **182.70** |
| **RL 104** | 02292510 | round | reflector | – | – | 6.5 | 46 | **199.50** |
| **RL 110** | 80392510 | round | reflector | – | – | 7.3 | 84 | **216.30** |
| **RL 113G** | 00042510 | square | reflector | 61 | 51 | 8 | – | **233.10** |
| **RL 107** | 03132510 | square | reflector | 100 | 100 | 9 | – | **431.55** |
| **RL 112G** | 03312510 | rectangular | reflector | 73 | 19 | 8.2 | – | **233.10** |
| **RL 116** | 00082510 | rectangular | reflector | 60 | 40 | 8 | – | **282.45** |



Above ZAR prices do not include VAT. E&OE



UQ1A/G6-0E



UK6A/HP-0EUL



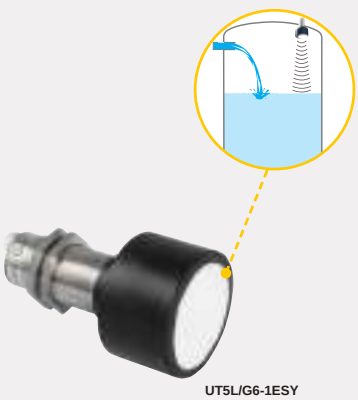
UK6A/HP-0EUL



UK1D/G6-0ESY



UT2F/G6-0ESY



UT5L/G6-1ESY

**Ultrasonic sensors** IP67 (EN60529)

Ultrasonic transducer emits an ultrasonic signal which is reflected back by the target towards the sensor. The trigger circuit measures the time between the emission and the detection of the signal.

Since the speed of the ultrasonic beam in air is known, it is easy to have an indication of the presence of the target, as well as a measure of the distance between sensor and target.

A Teach-in button is used to set working distance, output status (NO/NC) and slope of analog output and to change the function.

All models are temperature compensated to ensure reliability throughout the entire detection range and are totally resin filled for applications subject to vibration offering an IP67 protection degree.

**General features:**

- Sensitivity: Adjustable *(via external Teach-in)*
- Ambient limits: -20ºC... +70°C
- Supply protection: Polarity reversal, transient, short circuit
- LED indication: Orange *(output/regulation), green (echo reception)*
- Housing material: PBT plastic *(AISI 316L stainless steel available on request only)*

| type | supply voltage | detection distance (mm) | description | NPN | PNP | NO | NC | 0...10V | 4...20mA | connector | price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **M18 UQ1 series - Cubic ultrasonic sensor with head** (H) 53 x (W) 20 x (D) 38 mm | | | | | | | | | | | |
| **Analog + Digital NO/NC output** M12 *(4pin)* plug connection | | | | | | | | | | | |
| **UQ1A/G6-0E** | 10 - 30 VDC | 40…300 | ultrasonic sensor | | • | • | • | | • | M12 plug | **5 806.50** |
| **UQ1C/G6-0E** | 10 - 30 VDC | 60…800 | ultrasonic sensor | | • | • | • | | • | M12 plug | **3 958.50** |
| **UQ1D/G6-0E** | 10 - 30 VDC | 80…1.200 | ultrasonic sensor | | • | • | • | | • | M12 plug | **4 452.00** |
| **UQ1A/G7-0E** | 10 - 30 VDC | 40…300 | ultrasonic sensor | | • | • | • | • | | M12 plug | **5 806.50** |
| **UQ1C/G7-0E** | 10 - 30 VDC | 60…800 | ultrasonic sensor | | • | • | • | • | | M12 plug | **6 226.50** |
| **UQ1D/G7-0E** | 10 - 30 VDC | 80…1.200 | ultrasonic sensor | | • | • | • | • | | M12 plug | **6 793.50** |
| **M18 UK6 series - Cylindrical ultrasonic sensors** | | | | | | | | | | | |
| **UK6 series - M18 short body** M12 *(4pin)* plug connection *M18 x 60.3 mm* | | | | | | | | | | | |
| **Digital NO/NC output** | | | | | | | | | | | |
| **UK6A/HP-0EUL** | 10 - 30 VDC | 40...300 | ultrasonic sensor | | • | • | • | | | M12 plug | **3 759.00** |
| **UK6C/HP-0EUL** | 10 - 30 VDC | 60...800 | ultrasonic sensor | | • | • | • | | | M12 plug | **3 895.50** |
| **UK6D/HP-0EUL** | 10 - 30 VDC | 80…1.200 | ultrasonic sensor | | • | • | • | | | M12 plug | **4 410.00** |
| **Analog output** | | | | | | | | | | | |
| **UK6A/H1-0EUL** | 10 - 30 VDC | 40...300 | ultrasonic sensor | | | | | • | | M12 plug | **4 116.00** |
| **UK6C/H1-0EUL** | 10 - 30 VDC | 60...800 | ultrasonic sensor | | | | | • | | M12 plug | **4 252.50** |
| **UK6D/H1-0EUL** | 10 - 30 VDC | 80…1.200 | ultrasonic sensor | | | | | • | | M12 plug | **4 777.50** |
| **UK6A/H2-0EUL** | 10 - 30 VDC | 40...300 | ultrasonic sensor | | | | | | • | M12 plug | **4 116.00** |
| **UK6C/H2-0EUL** | 10 - 30 VDC | 60...800 | ultrasonic sensor | | | | | | • | M12 plug | **4 252.50** |
| **UK6D/H2-0EUL** | 10 - 30 VDC | 80…1.200 | ultrasonic sensor | | | | | | • | M12 plug | **4 777.50** |
| **UK1 series - M18 standard body** M12 *(4pin)* plug connection *M18 x 91.6 mm* | | | | | | | | | | | |
| **Analog + Digital NO/NC output** | | | | | | | | | | | |
| **UK1D/G6-0ESY** | 10 - 30 VDC | 150...1.600 | ultrasonic sensor | | • | • | • | | • | M12 plug | **7 413.00** |
| **UK1D/G7-0ESY** | 10 - 30 VDC | 150...1.600 | ultrasonic sensor | | • | • | • | • | | M12 plug | **7 413.00** |
| **UK1F/G6-0ESY** | 10 - 30 VDC | 200...2.200 | ultrasonic sensor | | • | • | • | | • | M12 plug | **8 631.00** |
| **UK1F/G7-0ESY** | 10 - 30 VDC | 200...2.200 | ultrasonic sensor | | • | • | • | • | | M12 plug | **8 631.00** |
| **M30 UT series - Standard body** *(with larger heads for longer distance detection)* M30 x 99 mm | | | | | | | | | | | |
| • **M30** - standard body **UT1** or with larger head - **UT2** *(38.8 mm)* **UT5** *(61 mm)* | | | | | | | | | | | |
| • Synchronism - up to 10 sensors connected on the same SYNC wire | | | | | | | | | | | |
| **Analog + Digital NO/NC output** M12 *(5pin)* plug connection | | | | | | | | | | | |
| **UT1B/G6-0ESY** | 10 - 30 VDC | 250...3.500 | ultrasonic sensor | | • | • | • | | • | M12 plug | **8 767.50** |
| **UT1B/G7-0ESY** | 10 - 30 VDC | 250...3.500 | ultrasonic sensor | | • | • | • | • | | M12 plug | **8 767.50** |
| **UT2F/G6-0ESY** | 10 - 30 VDC | 350...6.000 | ultrasonic sensor | | • | • | • | | • | M12 plug | **14 175.00** |
| **UT2F/G7-0ESY** | 10 - 30 VDC | 350...6.000 | ultrasonic sensor | | • | • | • | • | | M12 plug | **14 175.00** |
| **UT5L/G6-1ESY*** | 10 - 30 VDC | 600…8.000 | ultrasonic sensor | | • | • | • | | • | M12 plug | **20 055.00** |
| **UT5L/G7-1ESY** | 10 - 30 VDC | 600…8.000 | ultrasonic sensor | | • | • | • | • | | M12 plug | **20 055.00** |

* *Mechanical dimension M30 x 115 mm*

*Mounting accessories see page* ***K-11***
*See sensor connectors and cables page*

## Photoelectric area and fork sensors

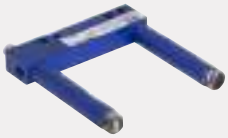
| type | supply voltage | diffused | retro-reflective | polarised retro | through-beam | detection distance (mm) | NPN | PNP | NO | NC | connector | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CR0 series - Area sensors** | | | | | | | | | | | | |
| **CR0 series retroreflective polarised area sensors** | | | | | | IP67 (EN60529) | | | | | | |
| CR0 area sensors are retroreflective and work in conjunction with RL106G reflector *(supplied)*. Comprises of synchronised photo element arrays for mutual interference avoidance. | | | | | | | | | | | | |
| • Nominal detection distance: 0.2 ... 4.5 meter | | | | | | | | | | | | |
| • Controlled height: 69 mm | | | | | | | | | | | | |
| • Minimum detectable object: 3…6 mm @ 2m - 3…10 mm @ 4.5m | | | | | | | | | | | | |
| • Connection: 250 mm pigtail with M12 5pin plug | | | | | | | | | | | | |
| • Dimensions: *(H) 107 X (W) 20 X (D) 36 mm* | | | | | | | | | | | | |
| **CR0/0B-1V** | 16…30 VDC | | | • | | 0.2…4.5 m | • | • | • | • | M12 plug | **5 523.00** |
| ***CRX** area sensor available on request* | | | | | | | | | | | | |
| **BX series - Through-beam area sensors** | | | | | | (H) 145 x (W) 20 x (D) 45 mm | | | | | | |
| **BX** area sensors are supplied as two parts - emitter and receiver elements. The optics comprise of synchronised photo element arrays for mutual interference avoidance. Ideal as a solution for irregular shaped object detection. | | | | | | | | | | | | |
| • Nominal detection distance: 0.3… 2 meter | | | | | | | | | | | | |
| • Controlled height: 90 mm | | | | | | | | | | | | |
| • Minimum detectable object: **BX4** Ø15 mm / **BX10** Ø5 mm | | | | | | | | | | | | |
| • Sensitivity: Adjustable *(trimmer)* | | | | | | | | | | | | |
| • LED indication: Green *(supply)* - red *(alarm sync.)* - yellow *(area stable)* | | | | | | | | | | | | |
| • Supply protection: Polarity reversal, transient, short circuit *(auto reset)* | | | | | | | | | | | | |
| • Protection degree: IP67 (EN60529) | | | | | | | | | | | | |
| **BX04 area sensor** | 4 optics - *30 mm optic step* | | | | | | | | | | | |
| **BX04SR/0A-HB** | 10... 26 VDC | | | | • | 0.3…2 m | • | • | • | | M12 plug | **8 400.00** |
| **BX10 area sensor** | 10 optics - *10 mm optic step* | | | | | | | | | | | |
| **BX10SR/0A-HB** | 10... 26 VDC | | | | • | 0.3…2 m | • | • | • | | M12 plug | **10 815.00** |
| *Available with 4 and 6 meter detection distances on request* | | | | | | | | | | | | |
| *Available in IP69K version (food and beverage) on request* | | | | | | | | | | | | |
| *See sensor connectors and cables page* | | | | | | | | | | | | |

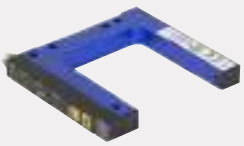

CR0/0B-1V


BX10SR/0A-HB

## FC series - Fork sensors

| type | supply voltage | slit/fork depth | slit/fork width | NPN | PNP | NO | NC | connector | price |
|---|---|---|---|---|---|---|---|---|---|
| **FC5 series - For object detection without regulation** | | | | | | | | | |
| • Minimum size object detection: 0.8 mm | | | | | | | | | |
| • Switching frequency: 4 KHz | | | | | | | | | |
| • Connector: M8 plug connection *(3 pin)* | | | | | | | | | |
| **FC5R/DP-0506-1F** | 12…24 VDC | 60 mm | 50 mm | | • | • | | M8 plug | **2 866.50** |
| **FC5R/DP-0806-1F** | 12…24 VDC | 60 mm | 80 mm | | • | • | | M8 plug | **3 055.50** |
| **FC5R/DP-1212-1F** | 12…24 VDC | 124 mm | 120 mm | | • | • | | M8 plug | **3 549.00** |
| **FC6 series - For object detection with regulation** | | | | | | | | | |
| • Minimum size object detection: 0.2 mm | | | | | | | | | |
| • Switching frequency: 10 KHz | | | | | | | | | |
| • Connector: M8 plug connection *(4 pin)* | | | | | | | | | |
| **FC6I/0B-0304-1F** | 12…24 VDC | 42 mm | 30 mm | • | • | • | • | M8 plug | **4 977.00** |
| **FC6I/0B-0306-1F** | 12…24 VDC | 59 mm | 30 mm | • | • | • | • | M8 plug | **5 092.50** |
| **FC6I/0B-0506-1F** | 12…24 VDC | 59 mm | 50 mm | • | • | • | • | M8 plug | **5 166.00** |
| **FC6I/0B-0510-1F** | 12…24 VDC | 95 mm | 50 mm | • | • | • | • | M8 plug | **5 827.50** |
| **FC6I/0B-0806-1F** | 12…24 VDC | 59 mm | 80 mm | • | • | • | • | M8 plug | **5 701.50** |
| **FC6I/0B-0810-1F** | 12…24 VDC | 95 mm | 80 mm | • | • | • | • | M8 plug | **6 069.00** |
| **FC7/8 series - Fork sensors for label detection** | | | | | | | | | |
| - Minimum object detection: 2 mm *(gap between labels)* / 2 mm *(label size)* | | | | | | | | | |
| - FC7: Photoelectric type label detection *(opaque labels)* | | | | | | | | | |
| - FC8: Ultrasonic type label detection *(transparent labels)* | | | | | | | | | |
| **FC7I/0B-M304-0F** | 12…24 VDC | 42 mm | 3 mm | • | • | • | • | M8 plug | **2 919.00** |
| **FC8U/0B-M307-1F** | 12…24 VDC | 69 mm | 3 mm | • | • | • | • | M8 plug | **14 280.00** |
| *See sensor connectors and cables page* | | | | | | | | | |


FC5R/DP-0506-1F


FC6I/0B-0506-1F


FC7I/0B-M304-0F



Above ZAR prices do not include VAT. E&OE

# Photoelectric sensor with onboard processing

AI enabled
MLAS - Machine Learning Assisted Setting

## Smart vision sensor - SMART-VS+ series

The **Smart-VS+** is an intelligent smart vision sensor, simple and easy to integrate into any application. It can be handled and used like a standard photoelectric sensor, but is powerful and smart with a multiprocessor platform supporting (AI) Artificial Intelligence technology.

Customised machine learning algorithms empower the detection system, enabling very complex and accurate object classification, ensuring very simple setup procedure without having to take care of programming or setting thresholds of different vision tools. All complex functionalities are performed by the Smart-VS **"brain".**

The detection function is accomplished by three simple steps. The initial step is the "GOOD" condition teaching and the second step is "BAD" condition teaching, the third will turn the sensor in learning and normal run status ready to detect "GOOD" or "BAD" scenarios. Place the objects in front of the sensor and press a button to change acquisition steps until the sensor starts to think and act precisely.

Application mainly related to print and apply applications to detect the presence or absence of labels or text printing, in liquid filling machines to detect the presence / absence of any type of cap on any type of bottles, vials, flasks, phials of any material made of glass, plastic or with bright dark colour shiny surfaces with different dimensions.

**General features:**

- Green/Red LED spot for GOOD/BAD part
- Ethernet point to point communication available
- Machine Learning assisted trigger for sensor set up
- TEACH button and comprehensive UI with 5 status LEDs
- 50...150 mm operating distance with electronic focus control
- Easy and Intuitive WEB Server GUI for maintenance and job setting
- Bright and visible red LED pointer and powerful white polarized illuminator
- No vision tools, skilled installers or programming required just photosensor like setting

New



MR-5-150...

| type | supply voltage | max. images to handle (GOOD+BAD) | detection distance (mm) | Inputs and Outputs | connector | price |
|---|---|---|---|---|---|---|
| **SMART-VS+** | | **Smart vision sensor** | | (H) 58 x (W) 47.1 x (D) 38 mm | | |
| **MR-5-150-WH-O** | 10…30 VDC | 6 images | 50…150 mm | 3 Out+2 In + Ethernet | M12 plug | **79 905.00** |
| **PL-5-150-WH-O** | 10…30 VDC | 20 images | 50…150 mm | 3 Out+2 In + Ethernet | M12 plug | **100 275.00** |

### Accessories

| type | gender | no. pins | plug angle | cable length | description | price |
|---|---|---|---|---|---|---|
| **95A900052** | female | 17 | straight | 3 meter | M12 connector | **3 192.00** |
| **95A900053** | female | 17 | straight | 5 meter | M12 connector | **4 147.50** |
| **93A050124** | male | 8 | straight | 5 meter | M12 connector | **8 211.00** |
| **93A050128** | male | 8 | straight | 5 meter | M12-RJ45 conn. | **6 058.50** |
| **93ACC0230** | – | – | – | – | fixed bracket | **2 089.50** |

## Application types

| | |
|---|---|
| Label presence detection |  |
| Bottle orientation detection |  |
| Cap presence detection |  |
| Print-on label detection. |  |

# Smart-VS+

## The new vision for your smart manufacturing









Scan to watch


LE40XZ...


LE40SZ...


LE80XZ...


LR12XA...


LR18XA...


CR18XSCN...

## Inductive proximity sensors

Inductive sensors are used for metal object detection. Operational integrity is maintained even in harsh environments e.g. presence of oils, powders, liquids and vibrations etc. Commonly mounted on machines tools, textile machines, transport systems packaging machines and all automation applications.

- Protection degree: IP65/67
- Ambient limits: -25ºC... +70°C
- LED indication: Incorporated
- Supply protection: Polarity reversal, short circuit, power surge

| type | supply voltage | flush | non flush | detection distance | NPN | PNP | NO | NC | connector | body length (mm) | price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rectangular housing inductive proximity switches** | | | | | | | | | | **IP67** | |
| **40 x 40 mm rectangular body** | | | | | | | | | | | |
| **DC standard version** | | | | *terminal block connection* | | | | | | | |
| **LE40XZSF15DPR-D** | 10-30 VDC | • | | 15 mm | | • | • | • | terminal | 120 | **1 102.50** |
| **LE40XZSN20DPR-D** | 10-30 VDC | | • | 20 mm | | • | • | • | terminal | 129 | **1 102.50** |
| **LE40XZSN20DNR-D** | 10-30 VDC | | • | 20 mm | | • | • | • | terminal | 129 | **1 102.50** |
| **Short body version** | | | | *M12 plug connection* | | | | | | | |
| **LE40SZSN20DPR-E2** | 10-30 VDC | | • | 20 mm | | • | • | • | M12 plug | 66 | **1 102.50** |
| **AC version** | | | | *terminal block connection* | | | | | | | |
| **LE40XZSN20ATO-D** | 20-250 VAC | | • | 20 mm | | | • | | terminal | 129 | **1 155.00** |
| **80 x 80 x 50 mm square body** | | | | *terminal block connection* | | | | | | **IP67** | |
| **DC version** | | | | | | | | | | | |
| **LE80XZSN50DPR-D** | 10-30 VDC | | • | 50 mm | | • | • | • | terminal | 98 | **2 320.50** |
| **AC version** | | | | | | | | | | | |
| **LE80XZSN50ATO-D** | 20-250 VAC | | • | 50 mm | | | • | • | terminal | 98 | **2 383.50** |
| **NAMUR proximity switches** | | | | | | | | | | **IP67** | |
| NAMUR inductive sensors are two-wire non amplified D.C. devices containing only the oscillator and are adapted to control an electronic amplified threshold circuit "which" can be utilised in hazardous areas. | | | | | | | | | | | |
| **M12 cylindrical body** | | | | | | | | | | | |
| **LR12XAF02FLCN** | 8.2 VDC | • | | 2 mm | | | | • | cable (2m) | 31 | **686.70** |
| **LR12XAN04FLCN** | 8.2 VDC | | • | 4 mm | | | | • | cable (2m) | 35 | **686.70** |
| **M18 cylindrical body** | | | | | | | | | | | |
| **LR18XAF05FLCN** | 8.2 VDC | • | | 5 mm | | | | • | cable (2m) | 32 | **745.50** |
| **LR18XAN08FLCN** | 8.2 VDC | | • | 8 mm | | | | • | cable (2m) | 32 | **745.50** |
| **Capacitive proximity sensors** | | | | | | | | | | **IP67** | |
| Capacitive proximity sensors are used to detect a variety of materials, whether in liquid or solid state *(e.g. water, wood, metals, granules, powders, etc...)* Performance is upheld even when operating through plastic or glass barriers. The robust nature of the technology ensures extremely high electromagnetic compatibility *(EMC)*, high shock/vibration resistance and minimal sensitivity to dust and moisture. This ensures reliable object detection in harsh industrial environments. | | | | | | | | | | | |
| **M18 - Capacitive proximity sensors** | | | | | | | | | | | |
| **CR18XSCF08DPRY-E2** | 10-30 VDC | • | | 0…8 mm | | • | • | • | M12 plug | 70 | **1 627.50** |
| **CR18XSCN12DPRY-E2** | 10-30 VDC | | • | 0...12 mm | | • | • | • | M12 plug | 84 | **1 627.50** |
| **CR18XSCN12DNRY-E2** | 10-30 VDC | | • | 0...12 mm | • | | • | • | M12 plug | 84 | **1 627.50** |
| **CR18SCF05ATO** | 20-250 VAC | • | | 0...5 mm | | | • | | cable (2m) | 70 | **1 501.50** |
| **CR18SCN08ATO** | 20-250 VAC | | • | 0...8 mm | | | • | | cable (2m) | 84 | **1 501.50** |
| **M30 - Capacitive proximity sensors** | | | | | | | | | | | |
| **CR30XSCF15DPRY-E2** | 10-30 VDC | • | | 0...15 mm | | | • | • | M12 plug | 62 | **1 680.00** |
| **CR30XSCN25DPRY-E2** | 10-30 VDC | | • | 0...25 mm | | • | • | • | M12 plug | 79 | **1 680.00** |
| **CR30XSCN25DNRY-E2** | 10-30 VDC | | • | 0...25 mm | | | • | • | M12 plug | 79 | **1 680.00** |



Above ZAR prices do not include VAT. E&OE

Photoelectric sensors transmit a single beam which is reflected or interrupted by an infringing object. Diversified detection methods include diffuse reflection, through-beam, retro-reflection, polarized reflection and transparent object detection.

| type | supply voltage | diffused | retro-reflective | polarised retro | through-beam | detection distance (mm) | NPN | PNP | NO | NC | connector | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PSE series - Standard compact sensors** | | | | | | | | | | | *M8 - 4-pin connector* | |
| PSE series designed with universal housing, an ideal replacement for a wide variety of sensors through a vast range of applications. | | | | | | | | | | | | |
| One click distance setting for accurate and fast installation equipped with an M12 plug for quick and efficient changeover for reduced production stoppage time. | | | | | | | | | | | | |
| • Light source: Red light (640 nm) | | | | | | | | | | | | |
| • Supply protection: Short-circuit, overload and reverse polarity protected | | | | | | | | | | | | |
| • Dimensions: 33 x 10.6 x 20 mm | | | | | | | | | | | | |
| • Feature Visible light spot for easy calibration / alignment | | | | | | | | | | | | |
| **Diffuse reflective** | | | | | | *proximity type detection (no transmitter or reflector required)* | | | | | | |
| **PSE-BC30DPBR-E3** | 12-24 VDC | • | | | | 300 mm | | • | • | • | M8 plug | **1 002.75** |
| **Retro-reflective** | | | | | | *used together with a reflector (supplied with reflector)* | | | | | | |
| **PSE-PM3DPBR-E3** | 12-24 VDC | | | • | | 3 meter | | • | • | • | M8 plug | **1 102.50** |
| **PSE-GM2DPBB-E3*** | 12-24 VDC | | • | | | 2 meter | | • | • | • | M8 plug | **1 879.50** |
| * *Transparent object detection* | | | | | | | | | | | | |
| **Thru-beam (long range)** | | | | | | *not supplied as a set (emitter bought separately)* | | | | | | |
| **PSE-TM10DPBR-E3** | 12-24 VDC | | | | • | 10 meter | | • | • | • | M8 plug | **1 155.00** |
| **PSE-TM20DPB-E3** | 12-24 VDC | | | | • | 30 meter | | • | • | • | M8 plug | **1 249.50** |
| **PSE-TM10DR-E3*** | 12-24 VDC | | | | • | 10 meter | Emitter | | | | M8 plug | **1 155.00** |
| **PSE-TM20D-E3*** | 12-24 VDC | | | | • | 30 meter | Emitter | | | | M8 plug | **1 249.50** |
| **PR18S series - Cylindrical sensors** | | | | | | | | | | | Ø 18 mm x 68 mm | |
| PR18S series cylindrical sensors - utilized on long and short range detection applications. The standard M18 housing ensures easy adaptability to a vast amount of applications. | | | | | | | | | | | | |
| Due to the non-contact nature of operation *(unlike limit switches)* the service life is longer, thusly ensuring good return on investment. | | | | | | | | | | | | |
| • Supply protection: Overload and reverse polarity protected | | | | | | | | | | | | |
| • Light source: Infrared LED | | | | | | | | | | | | |
| • Output indication: LED | | | | | | | | | | | | |
| • Connection: M12 - 4-pin connector | | | | | | | | | | | | |
| • Housing material: M12 - 4-pin connector | | | | | | | | | | | | |
| • Feature Excellent anti-interference performance | | | | | | | | | | | | |
| **Diffuse-reflective** | | | | | | *proximity type detection (no transmitter or reflector required)* | | | | | | |
| Sender and receiver within the same housing, beam reflects on detected object. | | | | | | | | | | | | |
| **PR18S-BC10DPR-E2** | 12-24 VDC | • | | | | 100 mm | | • | • | • | M12 plug | **906.15** |
| **PR18S-BC40DPC-E2** | 12-24 VDC | • | | | | 400 mm | | • | | • | M12 plug | **906.15** |
| **PR18S-BC40DPO-E2** | 12-24 VDC | • | | | | 400 mm | | • | • | | M12 plug | **906.15** |
| **Retro-reflective** | | | | | | *utilisation with a reflector (must be ordered separately)* | | | | | | |
| Sender and receiver within the same housing, beam transmission returned via reflector. | | | | | | | | | | | | |
| **PR18S-DM3DPC-E2** | 12-24 VDC | | • | | | 3 meter | | • | | • | M12 plug | **954.45** |
| **PR18S-DM3DPO-E2** | 12-24 VDC | | • | | | 3 meter | | • | • | | M12 plug | **954.45** |
| **Through-beam (long range)** | | | | | | *not supplied as a set (emitter ordered separately)* | | | | | | |
| Sender and receiver in different housing, detection through beam interruption. | | | | | | | | | | | | |
| **PR18S-TM20DPC** | 12-24 VDC | | | • | | 20 meter | | • | | • | M12 plug | **1 102.50** |
| **PR18S-TM20DPO** | 12-24 VDC | | | • | | 20 meter | | • | • | | M12 plug | **1 102.50** |
| **PR18S-TM20D*** | 12-24 VDC | | | | | 20 meter | Emitter | | | | M12 plug | **1 102.50** |
| * *Sender / Emitter* | | | | | | | | | | | | |



PSE-BC30DPBR-E3



PSE-GM2DPBB-E3



PR18S...

**Accessories**

| | | | |
|---|---|---|---|
| **ZJP-8** | 33 x 30 mm | PSE/PSR mounting rack | PSE sensors | **37.07** |
| **ZJP-9** | M18 x 37 mm | PSS/PSM mounting rack | PR sensors | **37.07** |
| **TD-02** | 40 x 65 mm | surface mount reflector for photo sensors | PR/PSE sensors | **103.95** |
| **TD-09** | 40 x 60 mm | surface mount reflector for photo sensors | PR/PSE sensors | **75.60** |

*See sensor connectors and cables page*

Transparent object **detection**

**PSE-GM2DPBB-E3** - sensor





FX102P-Z



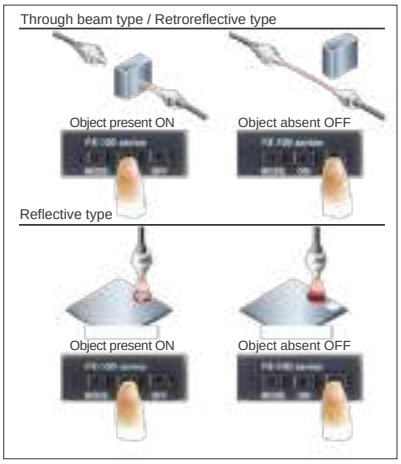
FX-551P



Reflective types



Through beam types




## FX series - Fibre optic amplifier

*DIN rail mounting*

Significantly improved stability and operation ease, due to industry's top emission power.
- 3 times higher emission power
- 1.6 times longer detection range than conventional models
- Simplified functions for ease of usage improvement

- Connection: Connector with cable *(supplied separately)*
- Sensitivity setting: 2-point teaching / limit teaching / Full-auto teaching *(manual setting **FX5** series)*
- Timer function: ON-delay, OFF-delay, One shot, no timer *(selectable)* 0.1ms - 32sec, 1-1000ms **FX1** series

| type | supply voltage | detection distance (mm) | NPN | PNP | light-on | dark-on | connector | price |
|---|---|---|---|---|---|---|---|---|
| **Amplifier for optical fibres** | | **FX1** (H) 66.4 x (W) 9 x (D) 32 - **FX5** (H) 75 x (W) 10 x (D) 32 mm | | | | | | |
| **FX102P-Z** | 12 - 24 VDC | dependant on fibre used | | • | • | • | M8 plug | **3 927.00** |
| **FX-551P** | 12 - 24 VDC | dependant on fibre used | | • | • | • | connector | **5 281.50** |
| **Accessories for above FX551 amplifiers** | | | | | | | | |
| **CN-73-C2** | | main cable with connector for above amplifier *(2 meter)* | | | | | connector | **456.75** |
| **CN-73-C5** | | main cable with connector for above amplifier *(5 meter)* | | | | | connector | **531.30** |
| **CN-71-C2** | | sub cable with connector for above amplifier *(2 meter)* | | | | | connector | **379.05** |

## Optical fibre sensors for above amplifiers

Due to the vast range of optical fibres available, we illustrate a basic range *(indicated below).*
Vast range of available optical fibre sensors available, request fibre guide, available as a PDF file.

| type | supply voltage | diffused | retro-reflective | polarised retro | through-beam | detection distance (mm) FX102 | detection distance (mm) FX551 hyper mode | cuttable fibre | head type | fibre length | price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Reflective types** | *proximity type detection (no transmitter or reflector required)* | | | | | | | | | | |
| **Cylindrical threaded body** *(straight)* | | | | | | *(IP67)* | | | | | |
| **FD-31** | M3 | • | | | | 140 | 515 | yes | cylindrical | 2 meter | **1 711.50** |
| **FD-41** | M4 | • | | | | 140 | 515 | yes | cylindrical | 2 meter | **1 711.50** |
| **FD-61** | M6 | • | | | | 410 | 1400 | yes | cylindrical | 2 meter | **1 711.50** |
| **Square threaded body** *(right angled)* | | | | | | | | | | | |
| **FD-R31G** | M3 | • | | | | 150 | 530 | yes | square | 2 meter | **2 803.50** |
| **FD-R41** | M4 | • | | | | 170 | 710 | yes | square | 2 meter | **3 696.00** |
| **Protective tube** *(for FD series reflective fibres)* | | | | | | | | | | | |
| **FDP-N500** | M4 | non-corrosive stainless steel protective tube for | | | | | | | | 0.5 meter | **801.15** |
| **FDP-N1000** | M4 | non-corrosive stainless steel protective tube for | | | | | | | | 1.0 meter | **919.80** |
| **FDP-N1500** | M4 | non-corrosive stainless steel protective tube for | | | | | | | | 1.5 meter | **1 060.50** |
| **Thru-beam types** | *supplied as a set with transmitter and receiver* | | | | | | | | | | |
| **Cylindrical threaded body** *(straight)* | | | | | | | | | | | |
| **FT-31** | M3 | | | | • | 340 | 1200 | yes | cylindrical | 2 meter | **1 711.50** |
| **FT-42** | M4 | | | | • | 800 | 3600 | yes | cylindrical | 2 meter | **1 543.50** |
| **Square threaded body** *(right angled)* | | | | | | | | | | | |
| **FT-R31** | M3 | | | | • | 340 | 1000 | yes | square | 2 meter | **3 171.00** |
| **FT-R43** | M4 | | | | • | 640 | 3000 | yes | square | 2 meter | **2 803.50** |
| **High temperature fibres** | | | | | | | | | | | |
| **FT-H20-WM1** | +200°C | | | | • | 300 | 1600 | no | cylindrical | 1 meter | **10 468.50** |
| **FT-H35-M2S6** | +350°C | | | | • | 490 | 1200 | no | cylindrical | 2 meter | **15 435.00** |
| **Expansion lenses** *(for through beam type fibres)* | *-60°C...+350°C* | | | | | | | | | | |
| For fibres: FT-42/43, FT-H20-WM1, FT-H35-M2S6 | | | | | | | | | | | |
| **FX-LE1** | M4 | fibre expansion lens side view 90° beam axis | | | | | | | | FT-42/43 | **404.25** |
| **FX-SV1** | M4 | fibre expansion lens *(5 times increased detection)* | | | | | | | | FT-42/43 | **652.05** |
| **Protective tube** *(for FT series through beam fibres)* | | | | | | | | | | | |
| **FTP-500** | M4 | non-corrosive stainless steel protective tube for | | | | | | | | 0.5 meter | **801.15** |
| **FTP-1000** | M4 | non-corrosive stainless steel protective tube for | | | | | | | | 1.0 meter | **919.80** |
| **FTP-1500** | M4 | non-corrosive stainless steel protective tube for | | | | | | | | 1.5 meter | **1 060.50** |
| **Fibre accessories** | | | | | | | | | | | |
| **FX-CT1** | | fibre cutting tool *(to cut fibres to desired length)* | | | | | | | | | **82.95** |



Above ZAR prices do not include VAT. E&OE





LX-101-P-Z



EX-L221-P



Material slack detection



HG-C1050-P

## LX-100 - Mark sensor *(can detect any mark)*

The **LX-100** mark sensor detects any marking or colour, the sensor is equipped with red, green and blue LED. In addition, it utilises a coaxial reflective optics system to realise high precision detection when used with 1/4000 resolution 12-bit A/D converter.

| type | supply voltage | diffused | retro-reflective | polarised retro | through-beam | detection distance (mm) | NPN | PNP | light-on | dark-on | connector | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LX-100 series - Mark / Colour sensor** | | | | | | | | | | | | |
| • Detection: | 3 LEDs: red, green, blue | | | | | | | | | | | |
| • Detection modes: | 2 *(selectable)*: Mark mode and Colour mode | | | | | | | | | | | |
| • Sensitivity: | 2-level teaching/Limit teaching - Mark / 1-level teaching - colour | | | | | | | | | | | |
| • LED indication: | 4-digit red LED display and various LED indicators | | | | | | | | | | | |
| • Dimensions: | *35 x 24 x 57 mm* | | | | | | | | | | | |
| • Response time: | Mark mode - 45 µs \ Colour mode 150 µs | | | | | | | | | | | |
| **Mark/colour sensor** | M12 - 4-pin connector *(supplied separately)* | | | | | | | | | | | |
| **LX-101-P-Z** | 12 - 24 VDC | | | | | 10...±3 mm | | • | • | • | M12 plug | **10 311.00** |
| **MSLX1** | bracket | metallic *(side mount)* mounting bracket for above | | | | | | | | | LX-101 | **773.85** |

***Note:*** *LX-101 can be used in conjunction with ASDA-A3 for high speed mark position applications.*

## EX-L200 series - Miniature laser sensor *(ultra compact) - amplifier integrated*

Due to the customised IC and optical design, high precision detection is fulfilled with directivity and visibility achievable only by laser. Class 1 (IEC / JIS / FDA) laser is safe to use, no need to separate the area of sensor usage.

- Detection: Minute object detection *(high precision - high accuracy)*
- Easy beam-axis alignment: Visible beam
- Sensitivity: Adjustable *(to eliminate background detection)*
- Supply protection: Short-circuit / reverse polarity protection
- LED indication: Orange and green LED indicators
- Ultra compact: *29.9 x 8.2 x 1³ mm*

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Spot reflective type** *(Ø1 mm at a detection distance of 300 mm)* | | | | | | | | | | |
| - Minimum detection object - 0.01 mm | | | | | | | | | | |
| **EX-L221-P** | 12 - 24 VDC | | • | | | 45...300 mm | | • | • | • | cable (2m) | **8 200.50** |
| **Thru-beam** | *supplied as a set with transmitter and receiver* | | | | | | | | | | | |
| - Minimum detection object - 0.03 mm | | | | | | | | | | | | |
| **EX-L211-P** | 12 - 24 VDC | | | | • | 1 meter | | • | • | • | cable (2m) | **8 452.50** |

***NPN*** *output available on request (remove* ***"-P"*** *from the part number)*

| | | | |
|---|---|---|---|
| **MS-EX201** | bracket | L shaped metallic mounting bracket for sensor | EX-L2… | **168.00** |

## HG-C series - Micro laser distance/measurement sensor *(with built-in amplifier)* IP67

HG-C measurement sensors measure and indicate measured values in mm as well as analog voltage outputs. The data can be used for various calculations and storage *(logging)* when the output is sent to a PLC + analog unit.

- Reliable detection in 10 µm precision *(for HG-C1030-P)*
- Indicates real measurements
- Equipped with 0 - 5V analog output
- Compact and light weight: *44 x 20 x 25 mm*

| type | supply voltage | repeatability | measurement center distance (mm) | measurement range (mm) | NPN | PNP | light-on | dark-on | connector | price |
|---|---|---|---|---|---|---|---|---|---|---|
| **HG-C1030-P** | 12 - 24 VDC | 10 µm | 30 | ±5 | | • | | | cable (2m) | **25 830.00** |
| **HG-C1050-P** | 12 - 24 VDC | 30 µm | 50 | ±15 | | • | | | cable (2m) | **25 830.00** |
| **HG-C1100-P** | 12 - 24 VDC | 70 µm | 100 | ±35 | | • | | | cable (2m) | **25 830.00** |
| **HG-C1200-P** | 12 - 24 VDC | 200 µm | 200 | ±80 | | • | | | cable (2m) | **28 875.00** |
| **HG-C1400-P** | 12 - 24 VDC | 300 µm | 400 | ±200 | | • | | | cable (2m) | **33 705.00** |
| **MS-HG-01** | bracket | for above HG-C micro laser sensors | | | | | | | | **537.60** |

***NPN*** *available on request (remove* ***"-P"*** *from the part number)*
***Note:*** *I/O link available on request*
*See sensor connectors and cables page*

## Pressure transmitters/sensors *IP67*

- Compact, rugged construction
- Accuracy: ± 0.3 % fs
- Response time: < 2 ms, *(1 ms typical)*
- Medium temperature range: -15°C… +125°C / 525 (-15°C...+85°C)
- Material: Connection stainless steel 1.4404 / AISI 316L
- Conformity: EN 61326-2-3 / IEC 68-2-27 / IEC 68-2-29 / IEC 68-2-6 / UL E325110

| type | pressure range (bar)[1] | power supply | output DC[2] | electrical connection[3] | description | pressure connection[4] | price |
|---|---|---|---|---|---|---|---|

Type **525/28** compact pressure transmitter based on well proven ceramic technology developed by Huba Control. Transmitter suitability extends across a broad spectrum of industries.

- Medium: Liquids and gases

**Type 528** pressure range: -1…0...60 Bar *(external thread)* Ø24 x 40.9 mm



528.9300033411

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **528.9010033411** | -1 ... 0 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 247.00** |
| **528.9120033411** | 0 ... 1.6 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 247.00** |
| **528.9140033411** | 0 ... 2.5 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 247.00** |
| **528.9150033411** | 0 ... 4 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 247.00** |
| **528.9170033411** | 0 ... 6 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 247.00** |
| **528.9300033411** | 0 ... 10 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 247.00** |
| **528.9310033411** | 0 ... 16 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 247.00** |
| **528.9320033411** | 0 ... 25 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 247.00** |
| **528.9330033411** | 0 ... 40 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 247.00** |
| **528.9400033411** | 0 ... 60 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 247.00** |

**Type 520** pressure range: 0 - 1000 Bar Ø24 x 46.7 mm

**Type 520** compact pressure transmitter based on Huba Control developed thick film technology with fully welded pressure measurement cell. **Meets high burst protection demands** and is ideal for refrigeration applications suitable for use in all types of refrigerants including ammonia.

- Welded without sealing parts *(no elastomer seals)*
- Medium: Liquids, gases and refrigerants *(including ammonia)*



520.930S033401

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **520.906S033401** | -1 ... 9 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 467.50** |
| **520.917S033401** | 0 ... 6 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 467.50** |
| **520.930S033401** | 0 ... 10 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 467.50** |
| **520.931S033401** | 0 ... 16 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 467.50** |
| **520.932S033401** | 0 ... 25 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 467.50** |
| **520.933S033401** | 0 ... 40 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 467.50** |
| **520.940S033401** | 0 ... 60 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **2 467.50** |
| **520.941S033401** | 0 ... 100 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **3 003.00** |
| **520.942S033401** | 0 ... 160 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **3 003.00** |
| **520.943S033401** | 0 ... 250 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **3 003.00** |
| **520.954S033401** | 0 ... 400 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **3 003.00** |
| **520.955S033401** | 0 ... 600 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **3 003.00** |

**Explosion proof version** EC type examination certificate: SEV 10 ATEX 0145

- Intrinsic safety: Ex II 1/2 G Ex ia IIC T4 Ga/Gb / Ex II 1/2 D Ex ia IIC T125°C Da/Db



520.917S043401

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **520.917S043401** | 0 ... 6 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **3 864.00** |
| **520.930S043401** | 0 ... 10 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **3 864.00** |
| **520.931S043401** | 0 ... 16 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **3 864.00** |
| **520.932S043401** | 0 ... 25 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **3 864.00** |
| **520.933S043401** | 0 ... 40 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **3 864.00** |
| **520.934S043401** | 0 ... 60 | 7 - 33 VDC | 4 - 20 mA | M12x1 | transmitter | G 1/4” | **3 864.00** |

## Accessories for transmitters

*other connectors and cables see page **K-23...24***

### Heat sink for high temperature applications

Heat sink effectively reduces temperatures of hot media, permitting usage of transmitters in applications with temperatures in excess of 200°C.



105074

**105074** G 1/4” heat sink for transmitters in high temperature applications (L +101 mm) **2 814.00**

[1] *Other pressure ranges available on request*

[2] *Other outputs available on request:* 0 - 5V, 0 - 10V, Radiometric 10 … 90%

[3] *Other electrical connections available:* DIN EN 175301-803-A/C, RAST2.5, Swift, M12 x 1, with cable

[4] *Pressure connections: inside/outside thread:* ¼”-18NPT, ½”-14NPT, G¼”, G½”, M20 x 1.5, R ¼ to DIN 2999



Above ZAR prices do not include VAT. E&OE

# Electronic programmable pressure switches

**Drinking water** application safe




## Pressure transmitter with display and programmable switching outputs

The **548/540** series µP-regulated, programmable pressure transmitter has a robust industry design, easily adjustable parameters *(via function keys in the configuration menu)* with up to two programmable switching points. All units are equipped with a large 4 digit display assuring reliable, accurate readings.

- Compact, rugged construction
- Clearly readable display *(rotatable 180°)* - 7 segment LED, 4 digits for pressure and parameter values
- Programmable time delay functions rise and switch off delay 0 - 50 s, response time 5 …500 ms
- Electrical connection: M12 x 1 *(5 pin) See sensor connectors and cables page*
- 1 x Analog signal output 4 ... 20 mA *(0 ... 10 V available on request)*
- 2 x programmable switching outputs NO or NC (250 mA)
- Medium: Liquids and gasses -20°C… +80°C
- Protection standard: IP67 - IEC 60529
- Conformity: EN 61326-2-3 / IEC 68-2-27 / IEC 68-2-6 / UL 61610-1


548.9300152401

| type | pressure range (bar)[1] | supply VDC | output DC[2] | electrical connection[3] | description | pressure connection[4] | price |
|---|---|---|---|---|---|---|---|
| **Type 548** | pressure range: 0 - 40 Bar | | | (H) 73 x (W) 41 x (D) 42 mm | | | |
| Based on the well proven ceramic technology developed by Huba Controls. | | | | | | | |
| • Accuracy: | ± 0.3 % fs | | | | | | |
| • Overload: | ≤ 10 Bar 4 x fs > 10 Bar 3.5 x fs | | | | | | |
| **548.9300152401** | 0 ... 10 | 17 - 33 | 4 - 20 mA | M12x1 PNP | transmitter | G 1/4" | **6 520.50** |
| **548.9310152401** | 0 ... 16 | 17 - 33 | 4 - 20 mA | M12x1 PNP | transmitter | G 1/4" | **6 520.50** |
| **548.9320152401** | 0 ... 25 | 17 - 33 | 4 - 20 mA | M12x1 PNP | transmitter | G 1/4" | **6 520.50** |
| **548.9330152401** | 0 ... 40 | 17 - 33 | 4 - 20 mA | M12x1 PNP | transmitter | G 1/4" | **6 520.50** |
| **Type 540** | pressure range: 0 - 600 Bar | | | (H) 73 x (W) 41 x (D) 42 mm | | | |
| Based on Huba Control developed thick film technology with fully welded pressure measurement cell. | | | | | | | |
| • Accuracy: | ± 0.3 % fs | | | | | | |
| • Overload: | 3 x fs *(max. 1500 Bar)* rupture pressure 6 x fs *(max. 2500 Bar)* | | | | | | |
| **540.941S052401** | 0 ... 100 | 17 - 33 | 4 - 20 mA | M12x1 PNP | transmitter | G 1/4" | **6 636.00** |
| **540.943S052401** | 0 ... 250 | 17 - 33 | 4 - 20 mA | M12x1 PNP | transmitter | G 1/4" | **6 636.00** |
| **540.955S052401** | 0 ... 600 | 17 - 33 | 4 - 20 mA | M12x1 PNP | transmitter | G 1/4" | **6 636.00** |

*Other pressure ranges available on request.*


540.943S052401

## Level detection pressure transmitters

- Medium temperature range: -20°C… +80°C
- Accuracy: ± 0.25 % fs
- Drinking water approval: KTW, W270, WRAS, ACS
- Protection class: *(IP68)* Cable PE-HD
- Material: Stainless Steel 1.4404 / AISI 316L - Ceramic sensor Al2O3 *(99.6%)*

| type | pressure range (bar)[1] | supply VDC | output DC[2] | electrical connection[3] | description | cable length | price |
|---|---|---|---|---|---|---|---|
| **Type 712 - Level detection pressure transmitters** *Ø23.4 x 116 mm* | | | | | | | |
| **Type 712** level detection pressure transmitters are manufactured using a relative and absolute pressure measuring cell. Diesel oil (Ex version). | | | | | | | |
| • Medium: | Fuel oil, ultra-light/heavy - SN 181 160-2, Diesel oil, Drinking water | | | | | | |
| **712.913101210** | 0.0 ... 0.3 | 10 - 30 | 4 - 20 mA | cable | transmitter | 5 meter | **10 710.00** |
| **712.911103210** | 0.0 ... 1.0 | 10 - 30 | 4 - 20 mA | cable | transmitter | 15 meter | **9 166.50** |
| **712.912104210** | 0.0 ... 1.6 | 10 - 30 | 4 - 20 mA | cable | transmitter | 20 meter | **9 838.50** |


712.911103210

**Type 713 - Level detection pressure transmitters** *Ø18.5 x 138 mm*

**Type 713** pressure level transmitter used for continuous fluid level measurement of ground and drinking water. The compact design permits use in applications with restricted access as small as 20 mm i.d. pipes. Available with enhanced energy efficient ratiometric and digital outputs, for battery powered applications.

- Applicable in ¾ inch pipes
- Continuous level measurement
- Suitable for ground and drinking water
- Excellent linearity and long term stability
- Medium: Liquids *(suitable for drinking water and borehole application)*


713.9301015111

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **713.9301013111** | 0 ... 10 | 10 - 30 | 4 - 20 mA | cable | transmitter | 80 meter | **22 785.00** |
| **713.9301015111** | 0 ... 10 | 10 - 30 | 4 - 20 mA | cable | transmitter | 100 meter | **24 570.00** |
| **713.9301016111** | 0 ... 10 | 10 - 30 | 4 - 20 mA | cable | transmitter | 125 meter | **26 880.00** |
| **713.9301017111** | 0 ... 10 | 10 - 30 | 4 - 20 mA | cable | transmitter | 150 meter | **29 085.00** |
| **713.9301018111** | 0 ... 10 | 10 - 30 | 4 - 20 mA | cable | transmitter | 175 meter | **31 395.00** |
| **713.9311018111** | 0 ... 16 | 10 - 30 | 4 - 20 mA | cable | transmitter | 175 meter | **30 765.00** |



699.931011010



699.931024110



692.912007141 + 103510

## Differential pressure transmitter

**Type 699** transmitters are available in switchable pressure ranges, with or without digital display. They include customer specific adjustment possibilities. Specially developed sensors for each pressure range ensure accurate long term stable measurement and provide the perfect platform for use in air conditioning technology.

- Fast, easy mounting. *(housing incorporates integral wall or ceiling mount bracket)*
- Switchable response curve *(linear or root-extracted)*
- Adjustable measurement range
- Switchable output signals
- Resettable Zero Point *(reset button)*
- Full scale adjustable

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### Application fields

- Check air flows, monitor filters and fan systems
- Measuring slightest differential pressures in ventilation and air conditioning ducts
- Pressure supervision in labs, production, storage and clean rooms *(conversion: 100 Pa = 1 mbar)*

| type | pressure range (mbar)[1] | supply VDC | output DC[2] | electrical connection[3] | description | pressure connection[4] | price |
|---|---|---|---|---|---|---|---|
| **Type 699 - Differential pressure transmitter** | | | | | (H) 75 x (W) 92 x (D) 47.9 mm | | |
| • Medium: | Air and neutral gases - temperature range: 0°C… 70°C | | | | | | |
| • Response time: | < 20 ms | | | | | | |
| • Output: | 4 … 20 mA[2] *(others available on request 0 … 5/10V)* | | | | | | |
| • Degree of protection: | IP54 according to EN 60529 | | | | | | |
| • Conformity: | EN 61326-1, UL 60730-1, UL 60730-2-6 | | | | | | |
| • Supply: | 13...33 VDC / 24 VAC ± 15% | | | | | | |
| **699.931014010** | 0.3/0.5/**1** | 13 - 33 | 4 - 20 mA | screw term. | transmitter | Ø6.2 mm | **3 486.00** |
| **699.913014010** | 1/3/**5** | 13 - 33 | 4 - 20 mA | screw term. | transmitter | Ø6.2 mm | **3 486.00** |
| **699.915014010** | 5/10/**16** | 13 - 33 | 4 - 20 mA | screw term. | transmitter | Ø6.2 mm | **3 486.00** |
| **699.931011010** | 0.3/0.5/**1** | 13 - 33 | 0 - 10V | screw term. | transmitter | Ø6.2 mm | **3 486.00** |
| **699.913011010** | 1/3/**5** | 13 - 33 | 0 - 10V | screw term. | transmitter | Ø6.2 mm | **3 486.00** |
| **699.915011010** | 5/10/**16** | 13 - 33 | 0 - 10V | screw term. | transmitter | Ø6.2 mm | **3 486.00** |
| **As above with LCD Digital display** | | | | | | | |
| **699.931024110** | 0.3/0.5/**1** | 13 - 33 | 4 - 20 mA | screw term. | transmitter | Ø6.2 mm | **4 998.00** |
| **699.913024110** | 1/3/**5** | 13 - 33 | 4 - 20 mA | screw term. | transmitter | Ø6.2 mm | **4 998.00** |
| **699.915024110** | 5/10/**16** | 13 - 33 | 4 - 20 mA | screw term. | transmitter | Ø6.2 mm | **4 998.00** |
| **699.931021110** | 0.3/0.5/**1** | 13 - 33 | 0 - 10V | screw term. | transmitter | Ø6.2 mm | **4 998.00** |
| **699.913021110** | 1/3/**5** | 13 - 33 | 0 - 10V | screw term. | transmitter | Ø6.2 mm | **4 998.00** |
| **699.915021110** | 5/10/**16** | 13 - 33 | 0 - 10V | screw term. | transmitter | Ø6.2 mm | **4 998.00** |

[1] *Other pressure ranges available on request* [2] *Other outputs available on request (0 … 5/10V)*

### Accessories for type 699 above

| | | |
|---|---|---|
| **104312** | connection kit for vent duct *(metal)* 90° angled - including 2 m long tube | **380.10** |
| **100064** | connection kit for vent duct *(plastic)* straight - including 2 m long tube | **254.10** |

## Type 692 - Differential pressure sensor (H) 95 x (Ø) 44 mm

**Type 692** pressure transmitters feature unique, well proven ceramic technology. The wide pressure range together with several standard output signals make these transmitters ideal for applications across a broad spectrum of industries. For the measurement of pressure differentials in HVAC systems.

- Robust stainless steel enclosure
- High resistance to extreme temperatures
- High measurement accuracy
- Very low temperature sensitivity

**Type 692 - Differential pressure transmitter** EN 61326-2-3 compact design

- Response time: < 5 ms
- Medium: Liquids and neutral gases -15°C… +85 °C
- Output: 4…20 mA[2] *(others available on request 0 … 5/10V)*
- Electrical connection: DIN EN 175301-803-A connector *(female not supplied with transmitter)*
- Degree of protection: IP65 according to EN 60529

| type | range BAR | max BAR | power supply | output (DC)[2] | electrical connection[3] | description | screw fitting | price |
|---|---|---|---|---|---|---|---|---|
| **692.912007141** | 0...1 | 5 | 11-33 | 4 - 20 mA | DIN plug | transmitter | Ø6 mm | **10 500.00** |
| **692.916007141** | 0...2.5 | 12 | 11-33 | 4 - 20 mA | DIN plug | transmitter | Ø6 mm | **10 500.00** |
| **692.919007141** | 0...6 | 12 | 11-33 | 4 - 20 mA | DIN plug | transmitter | Ø6 mm | **10 500.00** |
| **692.930007141** | 0...10 | 20 | 11-33 | 4 - 20 mA | DIN plug | transmitter | Ø6 mm | **10 500.00** |

### Accessories for above 692 transmitters

| | | |
|---|---|---|
| **103510** | DIN EN 175301-803-A female connector for type 692 transmitters | **189.00** |
| **101999** | mounting bracket *(including screws)* for type 692 transmitters | **287.70** |



Above ZAR prices do not include VAT. E&OE

CE



210.906441K

## Flow sensors for liquid medium

Huba Control flow sensors are based on the Karman Vortex trail principle and are available in various options. No moving parts, the flow sensor is not sensitive to debris with marginal pressure loss combined with high accuracy.

- Protection class: *(IP65)*
- Medium temperature: < +125 °C
- Measuring principle: Vortex - Piezoelectric sensor element
- Excellent media resistance: Measuring element not in contact with the media
- Drinking water approval: KTW, W270, WRAS, ACS
- Accuracy at < 50% fs: < 1 % fs *(>50% - 2% measuring value)*
- Material: Fibreglass-reinforced plastic, sensor paddle ETFE
- Electrical connection: M12 x 1 - 4 pin *(See sensor connectors and cables page)*
- Flow medium: Heating water with standard additives, drinking water
- Flow pipe connection: External thread K connection G½ ...G1¼" *(others on request)*

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210...

| type | nominal diameter | measuring range (l/min) | power supply | output DC[2] | description | connect | price |
|---|---|---|---|---|---|---|---|
| **Type 210 - Fibreglass-reinforced plastic** | | | | PA6T/6I (40% GF) | | | |
| **Type 210 flow sensor for liquid media** | | | | | | | |
| **210.906441K** | DN 6 | 0.5 ... 10 | 8 - 33 VDC | 4 - 20 mA | flow sensor | G ½" | **3 612.00** |
| **210.908441K** | DN 8 | 0.9 ... 15 | 8 - 33 VDC | 4 - 20 mA | flow sensor | G ½" | **3 612.00** |
| **210.910441K** | DN 10 | 1.8 ... 32 | 8 - 33 VDC | 4 - 20 mA | flow sensor | G ½" | **3 612.00** |
| **210.915441K** | DN 15 | 3.5 ... 50 | 8 - 33 VDC | 4 - 20 mA | flow sensor | G ¾" | **3 612.00** |
| **210.920441K** | DN 20 | 5.0 ... 85 | 8 - 33 VDC | 4 - 20 mA | flow sensor | G 1" | **3 612.00** |
| **210.925441K** | DN 25 | 9.0 ... 150 | 8 - 33 VDC | 4 - 20 mA | flow sensor | G 1¼" | **3 612.00** |
| [2] *other outputs available on request* | | | | *0 - 10V, Frequency square pulse output* | | | |
| Above flow switches can be provided with additional internal PT1000 temperature sensor | | | | | | | **+ 470.00** |

### Type 236 - Brass bodied flow sensors

The Type 236 is based on the Type 210 but incorporates a brass housing. The vortex sensor has a rugged construction of brass connection.

- Brass (CuZn40PbZ), PA6T/6I *(40% GF)*



236...

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Type 236** | Brass bodied flow sensors | | | | | | |
| **236.910441K** | DN 10 | 1.8 ... 32 | 8 - 33 VDC | 4 - 20 mA | flow sensor | G ½" | **5 649.00** |
| **236.911441K** | DN 10 | 2.0 ... 40 | 8 - 33 VDC | 4 - 20 mA | flow sensor | G ½" | **5 649.00** |
| **236.932441K** | DN 32 | 14 ... 240 | 8 - 33 VDC | 4 - 20 mA | flow sensor | G 1½" | **7 350.00** |
| *Above flow switches can be provided with additional internal PT1000 temperature sensor.* | | | | | | | **+ 470.00** |
| *See sensor connectors and cables page* | | | | | | | |

### Type 604 - Mechanical pressure switches

Type 604 pressure switch is used as a Δp flow switch in ventilation ducts for the control of filters and fans in primary and secondary control systems for the control of air dampers.
Ideally suited to protect heating coils from overheating and for monitoring industrial air cooling circuits.

- Easy to install, user friendly snap cover
- Case geometry permits easy cable entry - cable strain relief integrated
- Supplied with Combi-bracket for vertical or horizontal installation
- For ventilation and air conditioning plants *(monitor differential pressure under/over pressure)*
- To monitor air filters and air flow

- Medium: Air and neutral gases -30°C…+85 °C
- Electrical contact: 1 x changeover contact - 5A 250 VAC *(resistive)*
- Protection class: *(IP54) (with cover)*
- Conformity: EN 61326-2-3, EN 60730-1



604.9000000

| type | pressure range[1] mbar | pressure range[1] Pa | switch | electrical connection[3] | description | pressure connection[4] | price |
|---|---|---|---|---|---|---|---|
| **Type 604 - Mechanical pressure switch** | | | | *(H) 52 x (Ø) 81* | | | |
| • Tolerable overload on one side: | 50 mbar | | | | | | |
| • Pressure connection: | PVC nipples - Ø6.2 mm | | | | | | |
| **604.9000000** | 0.2 ... 3 | 20 ... 300 | 1 ch/over | screw term. | pressure switch | Ø6.2 mm | **834.75** |
| **604.9100000** | 0.5 ... 5 | 50 ... 500 | 1 ch/over | screw term. | pressure switch | Ø6.2 mm | **834.75** |
| **604.9200000** | 1 ... 10 | 100 ... 1000 | 1 ch/over | screw term. | pressure switch | Ø6.2 mm | **834.75** |
| **604.9400000** | 5... 20 | 500 ... 2000 | 1 ch/over | screw term. | pressure switch | Ø6.2 mm | **834.75** |
| **604.9500000** | 10... 50 | 1000 ... 5000 | 1 ch/over | screw term. | pressure switch | Ø6.2 mm | **834.75** |
| ***Note:*** *Other pressure ranges available on request* | | | | | | | |

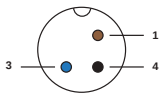
### Accessories for type 604 above

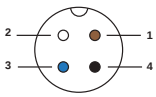
| | | |
|---|---|---|
| **104312** | connection kit for vent duct *(metal)* 90° angled - including 2 m long tube | **380.10** |
| **100064** | connection kit for vent duct *(plastic)* straight - including 2 m long tube | **254.10** |


080104-02-001

## M8 and M12 - Round sensor connectors

- Contact resistance: ≥10mΩ
- Protection degree: IP67/68
- Operating temperature: -25°C…+85°C
- Termination: Screw clamp terminal
- Contact material: Gold plated phosphor brass/bronze
- Body material: 60% glass fibre reinforced Polyamide




M12 pin configuration - ***A coding***


080103-01-001

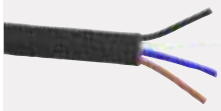

120105-02-024


120103-01-022


120108-02-006


120104-03-001

| type | gender | **No. pins** | term. | plug angle | nominal current | rated voltage AC/DC | description | price |
|---|---|---|---|---|---|---|---|---|
| **M8 assembly connectors** | | | | ***(A coding)*** | | | **IP67/68** | |
| • Plastic body: | | PA66+GF | | • Cable Ø: | Ø 3…5.5 mm | | | |
| **080103-02-001** | female | **3** | screw | straight | 3A | 60V | M8 connector | **183.75** |
| **080104-02-001** | female | **4** | screw | straight | 3A | 60V | M8 connector | **187.95** |
| **080103-01-001** | male | **3** | screw | straight | 3A | 60V | M8 connector | **180.60** |
| **080104-01-001** | male | **4** | screw | straight | 3A | 60V | M8 connector | **183.75** |
| **M8 panel mount connectors** *(through hole)* | | | | ***(A coding)*** | | | **IP67/68** | |
| **080103-04-004** | female | **3** | cable (5 m) | straight | 3A | 60V | M8 panel mount | **192.15** |
| **080104-04-004** | female | **4** | cable (5 m) | straight | 3A | 60V | M8 panel mount | **199.50** |
| **080103-03-003** | male | **3** | solder | straight | 3A | 60V | M8 panel mount | **192.15** |
| **080104-03-003** | male | **4** | solder | straight | 3A | 60V | M8 panel mount | **199.50** |
| **M12 assembly connectors** | | | | ***(A coding)*** | | | **IP67/68** | |
| • Plastic body: | | PA66+GF | | • Cable Ø: | Ø 3…8 mm | | | |
| **120103-02-022** | female | **3** | screw | straight | 4A | 250V | M12 connector | **193.20** |
| **120104-02-022** | female | **4** | screw | straight | 4A | 250V | M12 connector | **197.40** |
| **120105-02-022** | female | **5** | screw | straight | 4A | 60V | M12 connector | **201.60** |
| **120108-02-022** | female | **8** | screw | straight | 2A | 30V | M12 connector | **213.15** |
| **120104-02-024** | female | **4** | screw | 90° | 4A | 250V | M12 connector | **197.40** |
| **120105-02-024** | female | **5** | screw | 90° | 4A | 60V | M12 connector | **201.60** |
| **120108-02-024** | female | **8** | screw | 90° | 2A | 30V | M12 connector | **249.90** |
| **120103-01-022** | male | **3** | screw | straight | 4A | 250V | M12 connector | **189.00** |
| **120104-01-022** | male | **4** | screw | straight | 4A | 250V | M12 connector | **193.20** |
| **120105-01-022** | male | **5** | screw | straight | 4A | 60V | M12 connector | **197.40** |
| **120108-01-022** | male | **8** | screw | straight | 2A | 30V | M12 connector | **208.95** |
| **120104-01-024** | male | **4** | screw | 90° | 4A | 250V | M12 connector | **193.20** |
| **120105-01-024** | male | **5** | screw | 90° | 4A | 60V | M12 connector | **197.40** |
| **M12 metallic body assembly connectors** | | | | ***(A coding)*** | | | | |
| • Gland: | | PG9 with shield | | • Cable Ø: | Ø 6…8 mm | | | |
| • Termination: | | Solder terminal | | | | | | |
| **120104-02-006** | female | **4** | solder | straight | 4A | 250V | M12 connector | **266.70** |
| **120105-02-006** | female | **5** | solder | straight | 4A | 60V | M12 connector | **271.95** |
| **120108-02-006** | female | **8** | solder | straight | 2A | 30V | M12 connector | **288.75** |
| **120104-01-006** | male | **4** | solder | straight | 4A | 250V | M12 connector | **266.70** |
| **120105-01-006** | male | **5** | solder | straight | 4A | 60V | M12 connector | **271.95** |
| **120108-01-006** | male | **8** | solder | straight | 2A | 30V | M12 connector | **288.75** |
| **M12 metallic circular connectors** | | | | ***(A coding)*** | | | **IP67/68** | |
| • M16 x 1.5 rear mounting | | | | | | | | |
| **120104-04-001** | female | **4** | solder | straight | 4A | 250V | M12 panel mount | **234.15** |
| **120105-04-001** | female | **5** | solder | straight | 4A | 60V | M12 panel mount | **244.65** |
| **120108-04-001** | female | **8** | solder | straight | 2A | 30V | M12 panel mount | **269.85** |
| **120104-03-001** | male | **4** | solder | straight | 4A | 250V | M12 panel mount | **225.75** |
| **120105-03-001** | male | **5** | solder | straight | 4A | 60V | M12 panel mount | **234.15** |
| **120108-03-001** | male | **8** | solder | straight | 2A | 30V | M12 panel mount | **262.50** |


CA00015

**Cable multi-core sensor cable - PUR** *(Polyurethane)*

| type | ($mm^2$) | **cores** | colour | insul. material | wire colours | price per meter |
|---|---|---|---|---|---|---|
| **CA00142** | 0.34 | **3** | black | cable (1m) PUR | brown-blue-black | **51.45** |
| **CA00015** | 0.34 | **4** | black | cable (1m) PUR | brown-white-blue-black | **54.60** |
| **CA00148** | 0.34 | **5** | black | cable (1m) PUR | brown-white-blue-black-grey | **56.70** |
| **CA00103** | 0.25 | **8** | black | cable (1m) PUR | pnk-red-yel-brn-wht-blu-grn-gry | **52.50** |

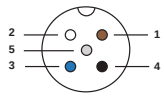


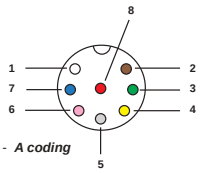
Above ZAR prices do not include VAT. E&OE


080104-06-054

## M8 and M12 - Round sensor connectors

- Contact resistance: ≥10mΩ
- Protection degree: IP67/68
- Operating temperature: -25°C ...+85°C
- Termination: Moulded on cable
- Contact material: Gold plated phosphor brass/bronze
- PUR cable: High flexibility, oil and abrasion resistant



M12 pin configuration - ***A coding***

| type | gender | No. pins | colour | plug angle | cable material | cable length | description | price |
|---|---|---|---|---|---|---|---|---|
| **M8 sensor cable with female connector** | | | | | ***(A coding)*** | | | |
| **080103-06-027** | female | **3** | black | straight | PUR | 2 meter | M8 sensor cable | **231.00** |
| **080103-06-020** | female | **3** | black | straight | PUR | 5 meter | M8 sensor cable | **410.55** |
| **080103-06-058** | female | **3** | black | 90° | PUR | 2 meter | M8 sensor cable | **231.00** |
| **080103-06-024** | female | **3** | black | 90° | PUR | 5 meter | M8 sensor cable | **410.55** |
| **080104-06-054** | female | **4** | black | straight | PUR | 2 meter | M8 sensor cable | **231.00** |
| **080104-06-029** | female | **4** | black | straight | PUR | 5 meter | M8 sensor cable | **465.15** |
| **080104-06-063** | female | **4** | black | 90° | PUR | 2 meter | M8 sensor cable | **231.00** |
| **080104-06-036** | female | **4** | black | 90° | PUR | 5 meter | M8 sensor cable | **465.15** |

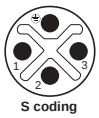

120105-06-127

| type | gender | No. pins | colour | plug angle | cable material | cable length | description | price |
|---|---|---|---|---|---|---|---|---|
| **M12 sensor cable with female connector** | | | | | ***(A coding)*** | | | |
| **120104-06-053** | female | **4** | black | straight | PUR | 2 meter | M12 sensor cable | **231.00** |
| **120104-06-061** | female | **4** | black | straight | PUR | 5 meter | M12 sensor cable | **465.15** |
| **120104-06-624** | female | **4** | black | straight | PUR | 7.5 meter | M12 sensor cable | **563.85** |
| **120104-06-625** | female | **4** | black | straight | PUR | 10 meter | M12 sensor cable | **719.25** |
| **120104-06-017** | female | **4** | black | 90° | PUR | 2 meter | M12 sensor cable | **231.00** |
| **120104-06-010** | female | **4** | black | 90° | PUR | 5 meter | M12 sensor cable | **420.00** |
| **120104-06-924** | female | **4** | black | 90° | PUR | 7.5 meter | M12 sensor cable | **563.85** |
| **120104-06-925** | female | **4** | black | 90° | PUR | 10 meter | M12 sensor cable | **719.25** |
| **120105-06-075** | female | **5** | black | straight | PUR | 2 meter | M12 sensor cable | **231.00** |
| **120105-06-053** | female | **5** | black | straight | PUR | 5 meter | M12 sensor cable | **465.15** |
| **120105-06-127** | female | **5** | black | 90° | PUR | 2 meter | M12 sensor cable | **231.00** |
| **120105-06-055** | female | **5** | black | 90° | PUR | 5 meter | M12 sensor cable | **465.15** |
| **120108-06-008** | female | **8** | black | straight | PUR | 2 meter | M12 sensor cable | **299.25** |
| **120108-06-009** | female | **8** | black | straight | PUR | 5 meter | M12 sensor cable | **505.05** |
| **120108-06-115** | female | **8** | black | 90° | PUR | 2 meter | M12 sensor cable | **299.25** |
| **120108-06-119** | female | **8** | black | 90° | PUR | 5 meter | M12 sensor cable | **505.05** |


120108-06-008

## M12 round connectors - for power applications *(S & K coding)*

- Contact resistance: ≥3mΩ
- Protection degree: IP67/68
- Operating temperature: -25°C...+85°C
- Termination: Solder terminal



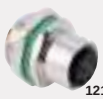
S coding


K coding

| type | gender | No. pins | poles | contact coding | nominal current | rated voltage | description | price |
|---|---|---|---|---|---|---|---|---|
| **M12 power assembly connectors** | | | | ***(S & K coding)*** | | | IP67/68 | |
| • Plastic body: | | | Insulation PA66+GF | | | | | |
| • Wire gauge: | | | max. 1.5 mm² | | | | | |
| • Cable Ø: | | | Ø 3...8 mm | | | | | |
| **120504-01-001** | male | **4** | 3+PE | **S** | 12A | 630 VAC | M12 connector | **248.85** |
| **121305-01-001** | male | **5** | 4+PE | **K** | 12A | 630 VAC | M12 connector | **416.85** |
| **120504-02-001** | female | **4** | 3+PE | **S** | 12A | 630 VAC | M12 connector | **257.25** |
| **121305-02-001** | female | **5** | 4+PE | **K** | 12A | 630 VAC | M12 connector | **447.30** |


120504-02-001

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **M12 metallic panel mount power connectors** | | | | ***(S & K coding)*** | | | IP67/68 | |
| • Metallic panel mount circular connectors | | | | | | | | |
| • M16 x 1.5 rear mounting | | | | | | | | |
| **120504-03-001** | male | **4** | 3+PE | **S** | 12A | 630 VAC | M12 connector | **248.85** |
| **121305-03-001** | male | **5** | 4+PE | **K** | 12A | 630 VAC | M12 connector | **416.85** |
| **120504-04-001** | female | **4** | 3+PE | **S** | 12A | 630 VAC | M12 connector | **257.25** |
| **121305-04-001** | female | **5** | 4+PE | **K** | 12A | 630 VAC | M12 connector | **447.30** |


121305-04-001



DT... series



DTK4848R01



DT320...



DT360...

## Temperature controllers

| type | panel size (mm) W x H | | description | output 1 | output 2 | price |
|---|---|---|---|---|---|---|
| **DTK series -** "Standard" **temperature controller** | | | 100 - 240 VAC 50/60Hz | | (60 mm deep) | |
| • Universal sensor inputs: | | | Thermocouple: Type (K-J-T-E-N-R-S-B-L-U-TXK) Platinum RTD: Pt100, JPt100 | | | |
| • LCD display: | | | Process Value *(PV)* Red colour - Set point *(SV)* Green colour | | | |
| • Control method: | | | PID, ON/OFF, Manual control mode | | | |
| • Alarms: | | | 1 alarm output *(9 selectable alarm modes)* | | | |
| • Display: | | | High resolution LCD display | | | |
| • Speed: | | | High speed sampling time *(100ms)* | | | |
| **DTK4848R01** | 48 | 48 | standard temperature controller | relay *(5A AC1)* | – | **1 102.50** |
| **DTK4848V01** | 48 | 48 | standard temperature controller | 12 VDC pulse | – | **1 281.00** |
| **DTK4848C01** | 48 | 48 | standard temperature controller | 4-20mA | – | **1 281.00** |
| **DTK4896R01** | 48 | 96 | standard temperature controller | relay *(5A AC1)* | – | **1 417.50** |
| **DTK4896V01** | 48 | 96 | standard temperature controller | 12 VDC pulse | – | **1 417.50** |
| **DTK4896C01** | 48 | 96 | standard temperature controller | 4-20mA | – | **1 417.50** |
| **DTK7272R01** | 72 | 72 | standard temperature controller | relay *(5A AC1)* | – | **1 585.50** |
| **DTK7272V01** | 72 | 72 | standard temperature controller | 12 VDC pulse | – | **1 585.50** |
| **DTK9696R01** | 96 | 96 | standard temperature controller | relay *(5A AC1)* | – | **1 806.00** |
| **DTK9696V01** | 96 | 96 | standard temperature controller | 12 VDC pulse | – | **1 806.00** |
| **DTA/DTB series - Temperature controllers** | | | | | | |
| **DTA4896R0** | 48 | 96 | standard temperature controller | relay | – | **1 890.00** |
| **DTA9648R0** | 96 | 48 | standard temperature controller | relay | – | **1 890.00** |
| **DTB4824RR** | 48 | 24 | advanced temperature controller | relay | relay | **1 974.00** |
| **DT3 series - Advanced** "high speed intelligent" **temperature controller** | | | 100 - 240 VAC 50/60Hz | | | |
| New DT3 series temperature controller designed with upgraded hardware and higher specifications offering smart operation, fast response, simple expandability and user-defined function keys. | | | | | | |
| • Built-in sensor input modes: | | | Thermocouple: K, J, T, E, N, R, S, B, L, U, TXK Platinum RTD: Pt100, JPt100, RTD: Cu50, Ni120 Analog input: 0-5 V, 0-10 V, 0-20 mA, 4-20 mA, 0-50 mV | | | |
| • Various Control Modes: | | | Auto Tuning, FUZZY, Manual, On/Off, PID Process Control, Self Tuning | | | |
| • Various Output Modes: | | | Relay, Voltage pulse, Current DC, Linear voltage | | | |
| • Communication: | | | RS-485 communication MODBUS ASCII / RTU protocol | | | |
| • Display: | | | Large 3-colour LCD Display | | | |
| • IP protection: | | | IP66 protection level and CE, UL certified | | | |
| • Output: | | | Dual output control function for heating and cooling | | | |
| • Detection: | | | Heater disconnection detection | | | |
| • Sampling rate: | | | 100ms | output 1 | output 2 | |
| **DT320RA-0200** | 48 | 48 | advanced temperature controller | relay | *see* | **1 858.50** |
| **DT320VA-0200** | 48 | 48 | advanced temperature controller | 12 VDC pulse | ***output 2*** | **1 858.50** |
| **DT340RA-0200** | 48 | 96 | advanced temperature controller | relay | *options* | **2 425.50** |
| **DT340VA-0200** | 48 | 96 | advanced temperature controller | 12 VDC pulse | *(below)* | **2 425.50** |
| **DT360RA-0200** | 96 | 96 | advanced temperature controller | relay | | **2 667.00** |
| **DT360VA-0200** | 96 | 96 | advanced temperature controller | 12 VDC pulse | | **2 667.00** |
| ***Note:*** *24 VDC (change* ***7th digit "A"*** *of part number to* ***"D" for 24 VDC*** *application on request)* | | | | | | |

**Expansion facilities and accessories** *for above DT3 controllers*

- Max 1 extra output card
- Max 2 optional cards

Replace the **last 4 digits** for additional options: *(first 2 digits identify the output - Last 2 digits the options)*

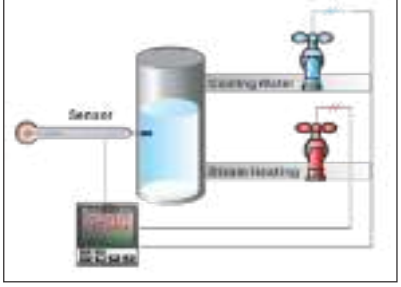
Example: **V213** = voltage output with event and remote set up input

**0233** = no extra control output but with retransmission output and remote set up input

| | | | | | | |
|---|---|---|---|---|---|---|
| - **R200** | Relay output | *(5A 250 VAC)* | output card | DT3-R | **278.25** |
| - **V200** | Voltage pulse output | *(14 VDC pulse)* | output card | DT3-V | **278.25** |
| - **C200** | DC current output | *(4 - 20mA)* | output card | DT3-C | **278.25** |
| - **L200** | Linear voltage output | *(0 - 10VDC)* | output card | DT3-L | **278.25** |
| - **0210** | Event input 1 | | option card | DT3-EVENT | **278.25** |
| - **0220** | CT input 1 | | option card | DT3-CT1 | **278.25** |
| - **0230** | Retransmission output | | option card | DT3-RETRANS | **278.25** |
| - **0203** | Remote setup input | | option card | DT3-REMOTE | **278.25** |

| | | | |
|---|---|---|---|
| **DT3-CT30A** | 30A | current transformer for heater disconnection or overcurrent detection | **402.15** |
| **DT3-CT100A** | 100A | current transformer for heater disconnection or overcurrent detection | **540.75** |

**Simultaneous** temperature control





Above ZAR prices do not include VAT. E&OE



DTM series

## DTM series - Multi-Loop modular temperature controller

With increasingly complex temperature control application requirements, Delta introduces the DTM series, multi-loop modular temperature controller, designed for ease of application and installation. Data collection by host and total isolation between channels improves communication speed and stability. From hardware to software, the intuitive design enables a quick start, while advanced functions provide data management flexibility with communication address customisation.

The DTM series consists of host, measurement module, I/O module and extension cassette. A fully extended DTM group consists of a host plus 7 measurement modules and 8 I/O modules, for up to 64 points temperature control. Modules simply slide onto one another to expand the system to total user requirements for simplified wiring.

The DTM series controller is an ideal solution for advanced and complex temperature control applications, where several groups can be connected via RS-485 or Ethernet for temperature control of up to 1 000 points.

New



DTM-BDV

DTME08

### DTM series Multi-Loop modular temperature controller

| type | supply voltage | temp control points | communication | description | price |
|---|---|---|---|---|---|
| **Host module CPU** | | | | (H) 114 x (W) 71 x (D) 81 mm | |
| • Supports up to 7 measurement modules + 8 I/O modules<br>• incorporates cassette slots to receive up to 2 extension cassettes *(with 4 outputs each)*<br>• Communication: RS-485 or RS-485 + Ethernet *(model dependant)*<br>• Internal interconnects for 24 V supply and communication signal transmission to other modules<br>• Input sensor support Thermocouple: K, J, T, E, N, R, S, B, L, U, TXK; Platinum RTD: Pt100, JPt100, Ni120, Cu50; Analog input: 0-10 V, 0-5 V, 0-50 mV, 0-20 mA, 4-20 mA | | | | | |
| **DTMR04** | 24 VDC | 4-channel | RS-485 | host temperature module | **5 796.00** |
| **DTMR08** | 24 VDC | 8-channel | RS-485 | host temperature module | **8 746.50** |
| **DTME04** | 24 VDC | 4-channel | RS-485 + Ethernet | host temperature module | **8 935.50** |
| **DTME08** | 24 VDC | 8-channel | RS-485 + Ethernet | host temperature module | **11 970.00** |
| **UC-PRG015-01A** | cable | Mini USB cable | for programming | *(1.5 meter)* | **226.80** |



DTMN08

| | | | | | |
|---|---|---|---|---|---|
| **Measurement modules** | | | | (H) 113 x (W) 70 x (D) 80 mm | |
| **DTMN04** | fm host | 4-channel | – | measurement module | **5 554.50** |
| **DTMN08** | fm host | 8-channel | – | measurement module | **8 505.00** |

### I/O modules

Provide outputs for measurement modules, plug-into *(cassettes)* or slide-on *(modules)*

| type | supply voltage | output points | outputs | description | price |
|---|---|---|---|---|---|
| **Extension cassettes - for measurement modules** | | | | (H) 48 x (W) 25 x (D) 77 mm | |
| Plug into host and measurement modules, providing outputs (without increasing dimensions) | | | | | |
| **DTM-BDV** | fm host | 4-channel | 0/12 V pulse voltage | plug-in output cassette | **920.85** |
| **DTM-BDR** | fm host | 4-channel | 2 A relay contact | plug-in output cassette | **920.85** |
| **DTM-BDC** | fm host | 4-channel | 4 - 20 mA output | plug-in output cassette | **920.85** |
| **DTM-BDL** | fm host | 4-channel | 0 - 10 V output | plug-in output cassette | **920.85** |
| **I/O module** *clips onto host or measurement modules* | | | | (H) 113 x (W) 30 x (D) 80 mm | |
| Slides onto right side of measurement modules, providing outputs | | | | | |
| **DTM-DOV** | fm host | 8-channel | 0/12 V pulse voltage | slide-on I/O Module | **2 121.00** |
| **DTM-DOR** | fm host | 8-channel | 2 A relay contact | slide-on I/O Module | **2 121.00** |
| **DTM-DOC** | fm host | 8-channel | 4 - 20 mA output | slide-on I/O Module | **2 121.00** |
| **DTM-DOL** | fm host | 8-channel | 0 - 10 V output | slide-on I/O Module | **2 121.00** |



DTM-DOV



DTC1000...



DTC2000...

### DTC series - "Modular" temperature controller (H) 90 x (W) 25.2 x (D) 60 mm

DTC features modular, wire-saving structure able to monitor multiple temperature points in parallel.
Modular extensions, providing user configurable outputs according to actual requirements
Programmable PID control allows users up to 64 groups of different temperature and control time.

- PID, programmable PID, On/Off, Manual control
- Analog inputs: 0-5V, 0-10V, 0-20mA, 4-20mA, 0-50mA
- Communication: RS-485 communication, 2.400 - 38.400 bps

| | | | | | |
|---|---|---|---|---|---|
| **DTC1000R** | 24 VDC | 2-channel | 3A SPST relay | main unit temp controller | **1 659.00** |
| **DTC1000C** | 24 VDC | 2-channel | DC current, 4-20 mA | main unit temp controller | **1 659.00** |
| **DTC2000R** | 24 VDC | 2-channel | 3A SPST relay | extension unit | **1 659.00** |
| **DTC2000C** | 24 VDC | 2-channel | DC current, 4-20 mA | extension unit | **1 659.00** |

# Thermocouple sensors


(1)


(2)


(3)


(4)


(6)


(5)


AC05-1/2


AC05-1/4

| type | sensor type | fitting type | probe type | type | cable length | description | probe dia. Ø | SUS304 length (mm) | price |
|---|---|---|---|---|---|---|---|---|---|
| **RTD (PT100) sensors** | | | | *sensor probe/tube: SUS304 material* | | | | | |
| **SJ-301/P505P** | PT100 | none | (1) | PVC | **1** | plain tube sensor | 5 | 50 | **686.70** |
| **SJ-301/P505P3** | PT100 | none | (1) | PVC | **3** | plain tube sensor | 5 | 50 | **823.20** |
| **SJ-301/P510T** | PT100 | none | (1) | teflon | **1** | plain tube sensor | 5 | 100 | **778.05** |
| **SJ-301/P510T3** | PT100 | none | (1) | teflon | **3** | plain tube sensor | 5 | 100 | **983.85** |
| **SJ-301/P520T** | PT100 | none | (1) | teflon | **1** | plain tube sensor | 5 | 200 | **778.05** |
| **SJ-301/P520T3** | PT100 | none | (1) | teflon | **3** | plain tube sensor | 5 | 200 | **983.85** |
| **SJ-302/P510T** | PT100 | M8 thread | (3) | teflon | **1** | threaded coupling | 5 | 100 | **778.05** |
| **SJ-302/P510T3** | PT100 | M8 thread | (3) | teflon | **3** | threaded coupling | 5 | 100 | **983.85** |
| **SJ-302/P520T** | PT100 | M8 thread | (3) | teflon | **1** | threaded coupling | 5 | 200 | **778.05** |
| **SJ-302/P520T3** | PT100 | M8 thread | (3) | teflon | **3** | threaded coupling | 5 | 200 | **983.85** |
| **SJ-305/P520T** | PT100 | 1/4" PT | (4) | teflon | **1** | threaded adj. coupling | 5 | 200 | **1 470.00** |
| **SJ-305/P520T3** | PT100 | 1/4" PT | (4) | teflon | **3** | threaded adj. coupling | 5 | 200 | **1 669.50** |
| **KN-1/2PT-8-200-PT** | PT100 | 1/2" PT | (6) | terminal box | | screw terminal box | 8 | 200 | **1 837.50** |
| **KN-1/2PT-8-300-PT** | PT100 | 1/2" PT | (6) | terminal box | | screw terminal box | 8 | 300 | **1 921.50** |
| **Type "J" thermocouples** | | | | *sensor probe/tube: SUS304 material* | | | | | |
| **SJ-100/J505B** | type J | none | (1) | braid | **1** | plain tube sensor | 5 | 50 | **224.70** |
| **SJ-100/J505B3** | type J | none | (1) | braid | **3** | plain tube sensor | 5 | 50 | **320.25** |
| **SJ-100/J510B** | type J | none | (1) | braid | **1** | plain tube sensor | 5 | 100 | **224.70** |
| **SJ-100/J510B3** | type J | none | (1) | braid | **3** | plain tube sensor | 5 | 100 | **320.25** |
| **SJ-100/J520B** | type J | none | (1) | braid | **1** | plain tube sensor | 5 | 200 | **224.70** |
| **SJ-100/J520B3** | type J | none | (1) | braid | **3** | plain tube sensor | 5 | 200 | **320.25** |
| **SJ-105/J510B** | type J | M8 thread | (3) | braid | **1** | threaded coupling | 5 | 100 | **224.70** |
| **SJ-105/J510B3** | type J | M8 thread | (3) | braid | **3** | threaded coupling | 5 | 100 | **320.25** |
| **SJ-105/J520B** | type J | M8 thread | (3) | braid | **1** | threaded coupling | 5 | 200 | **224.70** |
| **SJ-105/J520B3** | type J | M8 thread | (3) | braid | **3** | threaded coupling | 5 | 200 | **320.25** |
| **SJ-106/JM8B** | type J | screw-in | (2) | braid | **1** | screw-in sensor | M8 | – | **137.55** |
| **SJ-106/JM8B3** | type J | screw-in | (2) | braid | **3** | screw-in sensor | M8 | – | **234.15** |
| **SJ-107/J5BB** | type J | bayonet | (5) | braid | **1** | bayonet fixing sensor | 5 | – | **228.90** |
| **SJ-107/J5BB3** | type J | bayonet | (5) | braid | **3** | bayonet fixing sensor | 5 | – | **325.50** |
| **KN-1/2PT-8-200-J** | type J | 1/2" PT | (6) | terminal box | | screw terminal box | 8 | 200 | **1 648.50** |
| **KN-1/2PT-8-300-J** | type J | 1/2" PT | (6) | terminal box | | screw terminal box | 8 | 300 | **1 743.00** |
| **Type "K" thermocouples** | | | | *sensor probe/tube: SUS304 material* | | | | | |
| **SJ-100/K505B** | type K | none | (1) | braid | **1 m** | plain tube sensor | 5 | 50 | **201.60** |
| **SJ-100/K505B3** | type K | none | (1) | braid | **3 m** | plain tube sensor | 5 | 50 | **298.20** |
| **SJ-100/K510B** | type K | none | (1) | braid | **1 m** | plain tube sensor | 5 | 100 | **201.60** |
| **SJ-100/K510B3** | type K | none | (1) | braid | **3 m** | plain tube sensor | 5 | 100 | **298.20** |
| **SJ-100/K520B** | type K | none | (1) | braid | **1 m** | plain tube sensor | 5 | 200 | **201.60** |
| **SJ-100/K520B3** | type K | none | (1) | braid | **3 m** | plain tube sensor | 5 | 200 | **298.20** |
| **SJ-105/K510B** | type K | M8 thread | (3) | braid | **1 m** | threaded coupling | 5 | 100 | **201.60** |
| **SJ-105/K510B3** | type K | M8 thread | (3) | braid | **3 m** | threaded coupling | 5 | 100 | **298.20** |
| **SJ-105/K520B** | type K | M8 thread | (3) | braid | **1 m** | threaded coupling | 5 | 200 | **201.60** |
| **SJ-105/K520B3** | type K | M8 thread | (3) | braid | **3 m** | threaded coupling | 5 | 200 | **298.20** |
| **SJ-106/KM8B** | type K | screw-in | (2) | braid | **1 m** | screw-in sensor | M8 | – | **137.55** |
| **SJ-106/KM8B3** | type K | screw-in | (2) | braid | **3 m** | screw-in sensor | M8 | – | **234.15** |
| **SJ-107/K5BB** | type K | bayonet | (5) | braid | **1 m** | bayonet fixing sensor | 5 | – | **228.90** |
| **SJ-107/K5BB3** | type K | bayonet | (5) | braid | **3 m** | bayonet fixing sensor | 5 | – | **325.50** |
| **KN-1/2PT-8-200-K** | type K | 1/2" PT | (6) | terminal box | | screw terminal box | 8 | 200 | **1 648.50** |
| **KN-1/2PT-8-300-K** | type K | 1/2" PT | (6) | terminal box | | screw terminal box | 8 | 300 | **1 743.00** |
| **Thermocouple wire** | | | | *supplied in any length - priced per meter* | | | | | |
| **RTD/T19W** | PT100 | teflon | | teflon coated wire | | 19/0.13RTD-AFF-3C | | *(per meter)* | **137.55** |
| **TC-IC-H/S** | type J | braided | | steel braided covered | | thermocouple wire | | *(per meter)* | **64.05** |
| **TC-CA-H/S** | type K | braided | | steel braided covered | | thermocouple wire | | *(per meter)* | **64.05** |
| **Thermocouple connectors** | | | | | | | | | |
| **M-7-J** | type J | male | | thermocouple connector | | plug | | black | **92.40** |
| **F-7-J** | type J | female | | thermocouple connector | | socket | | black | **100.80** |
| **M-7-K** | type K | male | | thermocouple connector | | plug | | yellow | **92.40** |
| **F-7-K** | type K | female | | thermocouple connector | | socket | | yellow | **100.80** |
| **AC05-1/2** | | threaded sliding coupling for probe | | | | 1/2" PT | ID dia | 5 – | **915.60** |
| **AC05-1/4** | | threaded sliding coupling for probe | | | | 1/4" PT | ID dia | 5 – | **640.50** |



Above ZAR prices do not include VAT. E&OE



Display color for upper / lower limit (green / red)



Parameter Setup (orange)




**Various Unit Conversion**



DPA...

## DPA series - Compact miniature pressure sensors

Delta's new-generation and slim pressure sensor is small in size and light, supporting many installation methods. DPA features high measurement accuracy, excellent stability, high shock and vibration resistance, good over-load capacity, anti-corrosion and heat resistance, and can work with all Delta's industrial automation products in hi-tech electronics industry, general processing industry, food packaging industry and automatic assembly industry.

**Various unit conversion**

The DPA series offers 6 kinds of globally adopted pressure units for measurement and display.

**3-colour LCD display** *(green, red, orange)*

The large LCD with a green, red and orange 3-colour LCD display allows users to set the display colour according to the ambient environment, such as when the pressure is within normal range or exceeds the allowed range. The display's colour is orange when in parameter setup mode. This makes it easy for reading and reduces operation errors.

**Safety control mode**

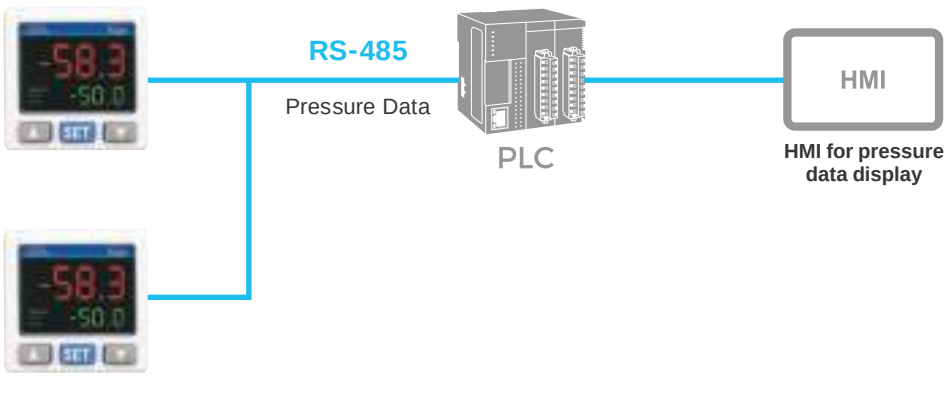
The safety control mode prevents operators from carelessly touching relevant parameters and affecting the operation and production of the equipment.

**Functions:**

- RS485 port, 2 x digital outputs (NPN or PNP) and 1 x analog output *(1 - 5V or 4 - 20mA)*
- Various unit conversion functions (kPa, kg/cm$^2$, bar, mmHg, psi, inchHg)
- Selectable LED *(3 colours)* set different colours for different parameters
- 10 sets of output response times available *(2ms - 5.000ms)*
- Connection: 1/8 PT, inner pore M5
- Safety control function *(to prevent unwanted parameter changes)*
- *For air pressure applications only*

| type | pressure range (kPa) | output type: 2 x digital | output type: 1 x analog | description | price |
|---|---|---|---|---|---|
| **Multifunction miniature pressure sensor** | | | | (H) 30 x (W) 30 x (D) 26 mm | |
| **2 x digital and 1 x 4 - 20mA output** | | | | | |
| **DPA01P-P** | -100 - 100kPa | PNP | 4 - 20mA | mini pressure sensor | **2 100.00** |
| **DPA10P-P** | -100 - 1000kPa | PNP | 4 - 20mA | mini pressure sensor | **2 100.00** |
| **DPA01N-P** | -100 - 100kPa | NPN | 4 - 20mA | mini pressure sensor | **2 100.00** |
| **DPA10N-P** | -100 - 1000kPa | NPN | 4 - 20mA | mini pressure sensor | **2 100.00** |
| **2 x digital and 1 x 1 - 5V** | | | | | |
| **DPA01Q-P** | -100 - 100kPa | PNP | +1 - 5V | mini pressure sensor | **2 100.00** |
| **DPA01M-P** | -100 - 100kPa | NPN | +1 - 5V | mini pressure sensor | **2 100.00** |
| **DPA10M-P** | -100 - 1000kPa | NPN | +1 - 5V | mini pressure sensor | **2 100.00** |
| **Accessories for pressure sensors** | | | | | |
| **DPA-PFKIT** | panel mount accessory | | | *(31 x 31 mm cut-out)* | **44.10** |
| **DPA-FMKIT** | surface mount support bracket | | | *(all sides mounting)* | **21.95** |

## Real-time Data Collection: Pressure Data via RS- 485







LF16-1...

## LF10 series - Air pressure switches *(IP20)*

Pressure switches used to regulate tank pressures between two preset values on small *(up to 200psi)* electrically driven air compressors. Supplied with unloader valve *(preventing starting under load)* and manual auto-off override switch.

- Visible contact / no wire looping / ample wiring space
- Automatic unloader valve / manual “auto-off”override facility
- 2 x NC contacts 12A 240 VAC

| type | operating pressure min ON PSI | operating pressure max OFF PSI | differential range PSI | factory setting PSI | pipe fitting female [1] | contact rating 240V | price |
|---|---|---|---|---|---|---|---|
| **LF10-1H11123-80** | 25 | 100 | 20-35 | 55-80 | 1/4 NPT | 12A | **355.95** |
| **LF10-1H11123-115** | 35 | 150 | 30-40 | 85-115 | 1/4 NPT | 12A | **355.95** |
| **LF10-1H11123-150** | 50 | 175 | 35-55 | 110-150 | 1/4 NPT | 12A | **355.95** |

## LF16 series - Water pump pressure switch IP20

LF16 pressure switches provide time tested, reliable control for automatic water systems. Universally accepted for use as original equipment on water well pumps or pumping systems.

- Visible contact / no wire looping / ample wiring space
- Automatic unloader valve / manual “auto-off”override facility
- 2 x NC contacts 16A 240 VAC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **LF16-111-40PSI** | 20 | 80 | 15-30 | 20-40 | 1/4 NPT | 16A | **355.95** |
| **LF16-111-50PSI** | 20 | 80 | 15-30 | 30-50 | 1/4 NPT | 16A | **355.95** |
| **LF16-111-60PSI** | 20 | 80 | 15-35 | 40-60 | 1/4 NPT | 16A | **355.95** |



LF18-1...

## LF19/18 series - Air compressor pressure switch IP44

Designed to regulate tank pressure between two preset values on three-phase electrically driven compressors.

- Non-metallic, corrosion-resistant cover
- Automatic unloader valve / manual “auto-off”override facility

| type | Bar | Bar | Bar | Bar | Bar | 240V | price |
|---|---|---|---|---|---|---|---|
| **LF19 - 1 phase pressure switch** | | | 2 x NC contacts 16A | | 250 VAC | | |
| **LF19-111121-3BAR** | 1 | 6 | 2.0-4.0 | 1-3 | G1/4” | 16A | **298.20** |
| **LF19-111121-4BAR** | 5 | 14 | 8.0-10.0 | 1.8-4 | G1/4” | 16A | **298.20** |
| **LF18 - 3 phase pressure switch** | | | 3 x NC contacts 16A | | 400 VAC | | |
| **LF18-111121-5BAR** | 2 | 8 | 1.0-3.0 | 3.8-5 | G1/4” | 16A | **396.90** |
| **LF18-111121-7BAR** | 3 | 11 | 1.4-4.0 | 5.6-7 | G1/4” | 16A | **396.90** |
| **LF18-111121-10BAR** | 4 | 16 | 1.8-4.5 | 8-10 | G1/4” | 16A | **396.90** |

1 BAR = 14.5 PSI

[1] *Other pipe fittings available on request*



LF55...

## LF55 series - Pressure switch for refrigeration systems

LF55 series pressure switches are used with fluorinated refrigerants to control the pressure of compressors in refrigeration system, can also used in air and water applications.

- Medium: Refrigerant, air, water, oil -10°C...+100°C
- Contact: SPDT 10A 250 VAC

| type | Bar | Bar | Bar | Bar OFF | Bar ON | fitting | 250V | price |
|---|---|---|---|---|---|---|---|---|
| **LF5503** | -0.5 | 3 | 0.35-1.5 | 2.0 | 1.0 | M12 X 1.25 | 10A | **578.55** |
| **LF5506** | -0.5 | 6 | 0.6-4 | 3.0 | 2.0 | M12 X 1.25 | 10A | **578.55** |
| **LF5510** | 1 | 10 | 1-3 | 6.0 | 5.0 | M12 X 1.25 | 10A | **578.55** |
| **LF5516** | 3 | 16 | 1-4 | 10.0 | 8.0 | M12 X 1.25 | 10A | **578.55** |
| **LF5520** | 5 | 20 | 2-5 | 16.0 | 13.0 | M12 X 1.25 | 10A | **578.55** |



FS52

## FS series - Liquid flow switches *(paddle type)*

Designed for managing liquid flow changes of water, ethylene glycol or other non-hazardous liquids in pipes. When liquid flow is higher or lower than pre-set value a SPDT switch operates.

- Supplied with 3 fitted paddles for Ø25...75 mm pipes +spare for pipes up to Ø 200 mm
- Adjustable flow setting for different requirements
- Brass 1” NPT connection *(available in stainless steel for ammonia and other medium)*
- Max liquid pressure: 1 Bar - *can be used in multiple applications*

| | | | | |
|---|---|---|---|---|
| **FS51** | IP33 | paddle type liquid flow switch | 1” NPT | 10A | **845.25** |
| **FS52** | IP55 | paddle type liquid flow switch | 1/2” NPT | 10A | **1 113.00** |



Above ZAR prices do not include VAT. E&OE


CMV100D


CMV105D


CMV104D


CMV103D


CM1305


CM1307


CM1308


CM1704


CM1701


CM1703


CZ-7121


CZ-7141

## Miniature snap-action micro switches

- Snap-action micro switch with wiping contacts, silver alloy

| type | current Ith | | actuator | length | description | contacts | price |
|---|---|---|---|---|---|---|---|
| **CMV series - Snap-action micro switches** | | | | | | | |
| **10A 250 VAC changeover** | | | | | | | |
| • Terminals: | Fast-on 187 *(4.8 x 0.5 mm)* | | | | | | |
| • Mounting: | Ø3 mm - 22.2 x 10.3 mm apart *(diagonal)* | | | | | | |
| **CMV100D** | 10A | **0** | standard plunger | – | miniature micro switch | SPDT | **24.89** |
| **CMV101D** | 10A | **1** | short plain lever | 35.6 mm | miniature micro switch | SPDT | **29.61** |
| **CMV105D** | 10A | **5** | long plain lever | 62.2 mm | miniature micro switch | SPDT | **29.61** |
| **CMV104D** | 10A | **4** | short roller lever | 20.1 mm | miniature micro switch | SPDT | **33.18** |
| **CMV103D** | 10A | **3** | long roller lever | 34.0 mm | miniature micro switch | SPDT | **32.03** |
| **16A 250 VAC changeover** | | | | | | | |
| • Terminals: | Fast-on 250 *(6.35 x 0.8 mm)* | | | | | | |
| **CMV16001C** | 16A | **0** | standard plunger | – | miniature micro switch | SPDT | **33.18** |
| **CMV16011C** | 16A | **1** | short plain lever | 35.6 mm | miniature micro switch | SPDT | **32.03** |
| **CMV16051C** | 16A | **5** | long plain lever | 62.2 mm | miniature micro switch | SPDT | **33.18** |
| **CMV16041C** | 16A | **4** | short roller lever | 20.1 mm | miniature micro switch | SPDT | **34.34** |
| **CMV16031C** | 16A | **3** | long roller lever | 34.0 mm | miniature micro switch | SPDT | **37.91** |
| **CM series - Standard snap-action micro switch** | | | | | | | |
| • Terminals: | Screw-type terminals | | | | | | |
| • Mounting: | Ø4 mm - 25.4 mm apart *(horizontal)* | | | | | | |
| **CM1300** | 15A | **F** | pin plunger | | standard micro switch | SPDT | **105.00** |
| **CM1305** | 15A | **G** | extended plunger | | standard micro switch | SPDT | **130.20** |
| **CM1306** | 15A | **H** | button plunger | | standard micro switch | SPDT | **100.80** |
| **CM1307** | 15A | **I** | ext. panel mnt plunger | | standard micro switch | SPDT | **140.70** |
| **CM1308** | 15A | **J** | ext. panel mnt roller plunger | | standard micro switch | SPDT | **157.50** |
| **CM1309** | 15A | **K** | ext. p/mnt roller plunger 90º | | standard micro switch | SPDT | **161.70** |
| **CM1701** | 15A | **L** | long plain lever | | standard micro switch | SPDT | **102.90** |
| **CM1703** | 15A | **M** | long roller lever | | standard micro switch | SPDT | **112.35** |
| **CM1704** | 15A | **N** | short roller lever | | standard micro switch | SPDT | **108.15** |
| **CM1705** | 15A | **P** | long wire lever | | standard micro switch | SPDT | **121.80** |
| **CM1743** | 15A | **O** | short roller *(collapsible)* | | standard micro switch | SPDT | **119.70** |
| **CAP-Y** | | | | | CM switch terminal cover | | **14.28** |
| **CZ-7 series - Micro switch** | **10A 250 VAC** | | | | | | |
| • Rated insulated voltage: | Ui-380V | | | | | | |
| • Terminals: | Screw terminals (IP40) | | | | | | |
| • Rated thermal current: | 10A (Ith IEC94751) 250 VAC | | | | | | |
| • Mounting: | Ø4 mm...25.4 mm apart *(horizontal)* | | | | | | |
| **CZ-7310** | 10A | **I** | ext. panel mnt plunger | | standard micro switch | SPDT | **181.65** |
| **CZ-7311** | 10A | **J** | ext. panel mnt roller plunger | | standard micro switch | SPDT | **218.40** |
| **CZ-7312** | 10A | **K** | ext. p/mnt roller plunger 90º | | standard micro switch | SPDT | **218.40** |
| **CZ-7120** | 10A | **L** | long plain lever | | standard micro switch | SPDT | **160.65** |
| **CZ-7121** | 10A | **M** | long roller lever | | standard micro switch | SPDT | **148.05** |
| **CZ-7141** | 10A | **N** | short roller lever | | standard micro switch | SPDT | **162.75** |
| **CZ-7144** | 10A | **O** | short roller *(collapsible)* | | standard micro switch | SPDT | **172.20** |

## Actuator - Types

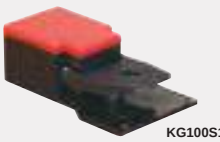



KB A1 S11 KB B2 S11 KB C2 S11


KB E2 S11 KB F2 S11 KB M1 S11


KM E2 S11


KM H1 S11


KG100S11


KG200S11


KR200S11

Limit switches designed to satisfy all requirements comprising quick installation, easy wiring and simple setup. The innovative locking bayonet mechanism permits to remove and reposition the operating head in the required configuration with no tools. The auxiliary contact blocks are removable assuring remarkable wiring ease.

- Replaceable actuator heads, 45° axial rotation of operating heads
- Direct operating operation; safety function according to IEC/EN 60947-5-1
- Ith 10A – IP65 – Ui 690 VAC – M20 cable entry

| type | description | | contacts | price |
|---|---|---|---|---|
| **KB series -** *Plastic body bottom entry* | *(1 x M20)* | | **IP65** | |
| - Body dimensions: | *(H) 69 x (W) 30 x (D) 30 mm* | *fixing hole distance:* | *20 mm* | |
| **KB A1 S11** | top plunger | industrial limit switch | 1NO + 1NC | **357.00** |
| **KB B2 S11** | top roller plunger *(metal)* | industrial limit switch | 1NO + 1NC | **428.40** |
| **KB C2 S11** | top plunger roller lever *(metal)* | industrial limit switch | 1NO + 1NC | **431.55** |
| **KB D2 S11** | roller side push level *(metal)* | industrial limit switch | 1NO + 1NC | **431.55** |
| **KB E2 S11** | rotating roller lever *(metal)* | industrial limit switch | 1NO + 1NC | **466.20** |
| **KB F2 S11** | rotating roller lever *(adjustable)* | industrial limit switch | 1NO + 1NC | **487.20** |
| **KB H1 S11** | ceramic rotating rod roller lever | industrial limit switch | 1NO + 1NC | **690.90** |
| **KB L2 S11** | rotating rod lever *(adjustable)* | industrial limit switch | 1NO + 1NC | **476.70** |
| **KB M1 S11** | omni-directional wobble stick | industrial limit switch | 1NO + 1NC | **468.30** |
| **KB P1 L11** | hinge operating *(short cylinder)* | industrial limit switch | 1NO + 1NC | **1 333.50** |
| **KB P2 L11** | hinge operating *(long cylinder)* | industrial limit switch | 1NO + 1NC | **1 396.50** |
| **KM series -** *Metallic body bottom entry* | *(1 x M20)* | | **IP65** | |
| - Body dimensions: | *(H) 69 x (W) 30 x (D) 30 mm* | *fixing hole distance:* | *20 mm* | |
| **KM A1 S11** | top plunger | industrial limit switch | 1NO + 1NC | **490.35** |
| **KM B2 S11** | top roller plunger | industrial limit switch | 1NO + 1NC | **563.85** |
| **KM C2 S11** | top plunger roller lever | industrial limit switch | 1NO + 1NC | **570.15** |
| **KM E2 S11** | rotating roller lever | industrial limit switch | 1NO + 1NC | **604.80** |
| **KM F2 S11** | rotating roller lever *(adjustable)* | industrial limit switch | 1NO + 1NC | **627.90** |
| **KM H1 S11** | ceramic rotating rod roller lever | industrial limit switch | 1NO + 1NC | **851.55** |
| **KM L2 S11** | rotating rod lever *(adjustable)* | industrial limit switch | 1NO + 1NC | **617.40** |
| **KM M1 S11** | omni-directional wobble stick | industrial limit switch | 1NO + 1NC | **606.90** |
| **Spare – contact blocks** *(interchangeable) - excluding* ***KB Q1 L11*** | | | | |
| **KX B S11** | contact block | snap action | 1NO + 1NC | **308.70** |
| **KX B S02** | contact block | snap action | 2 NC | **486.15** |
| **KX B A11** | contact block | slow break *(make before break)* | 1NO + 1NC | **266.70** |
| **KX B L11** | contact block | slow break | 1NO + 1NC | **266.70** |
| **KX B L21** | contact block | slow break | 2NO + 1NC | **540.75** |

**Industrial foot switches thermoplastic and metallic** **IP54**

KG and KR series of foot switches are robust and reliable control devices designed for a wide range of industrial applications. Engineered for durability and ease of use, these foot switches allow for hands-free operation, improving safety and efficiency in the workplace.

The KG series is ideal for general-purpose use, providing a straightforward and effective solution for controlling machinery and equipment. In contrast, the KR series offers enhanced protection with a reinforced housing, making it suitable for more demanding environments where additional durability is required.

- Self-extinguishing double insulation polymer thermoplastic
- Cable entry: M20 x 1.5

**KG series - Thermoplastic foot switches**

- Self-extinguishing double insulation thermoplastic

| | | | | |
|---|---|---|---|---|
| **KG100S11** | open-type industrial foot switch | thermoplastic | 1NO + 1NC | **1 501.50** |
| **KG200S11** | closed-type industrial foot switch | thermoplastic | 1NO + 1NC | **1 795.50** |

**KR series - Metallic foot switches**

- Aluminium zinc alloy body

| | | | | |
|---|---|---|---|---|
| **KR100S11** | open-type industrial foot switch | diecast | 1NO + 1NC | **2 803.50** |
| **KR200S11** | closed-type industrial foot switch | diecast | 1NO + 1NC | **3 349.50** |
| **Additional charges** | | | | |
| **KGX01** | kit for adding a second contact block to foot switches | | – | **70.35** |
| **KGX02** | contact block mounting bracket | | – | **143.85** |
| **KX B S11** | additional contact block for above foot switches | | 1NO + 1NC | **308.70** |



Above ZAR prices do not include VAT. E&OE

DATASENSING
easing automation challenges

# S3N

## MINIATURE PHOTOELECTRIC SENSOR





S3N is the new Datasensing miniature photoelectric sensor line with state of art detection features, rugged mechanics, complete optical functions, bright red LED or safe Laser class 1 emission. Available with Teach-in push button and smart IO-Link, offering advanced parametrization and monitoring functionalities, with predictive maintenance for your automation system.

## Features

- Compact Dimensions
- Smart and Easy
- Mechanical Roughness
- Logistics Applications
- Automation
- Packaging Applications

**The S3N series features IO-Link connectivity, the key to seamless integration and advanced monitoring.**

- Easy installation - Plug-and-play functionality
- Adjust parameters, remote diagnostics
- Real-time monitoring: Track sensor status and detection data in real time
- Predictive maintenance: Identify potential problems early

IO-Link



E10100BI



E30100EMRA



E40100AM

**E series** industrial limit switches are suitable for most environmental conditions due to their solid construction, IP66 certification and proven reliability over decades of fieldwork.

- Protection degree: IP66
- Rated thermal current: 10A (Ith IEC947-5-1)
- Conformity: EN 50047, UNI EN 1088, EN ISO 12100-1, IEC529
- Contact blocks with positive opening of the NC contact according to IEC/EN 60947-5-1, VDE 0660-200

| type | actuator type | description | contact | price |
|---|---|---|---|---|
| **E100 series - Industrial limit switches** | **IP66** | CENELEC EN50047 | | |
| Body dimensions: | *(H) 77.5 x (W) 30.5 x (D) 33 mm* | fixing hole distance: 20/22 mm | | |
| Cable entry: | 1 x bottom entry - PG13.8 | | | |
| **Thermoplastic body** | (IP66) | | | |
| **E10000AI** | top steel plunger actuator | limit switch | 1NO + 1NC | **373.80** |
| **E10000BI** | top steel roller plunger actuator | limit switch | 1NO + 1NC | **462.00** |
| **E10000CI** | roller lever side action | limit switch | 1NO + 1NC | **429.45** |
| **E10000DI** | roller lever vertical action | limit switch | 1NO + 1NC | **446.25** |
| **E10000EI** | rotary roller arm lever | limit switch | 1NO + 1NC | **456.75** |
| **E10000EI50** | rotary Ø50 mm rubber roller arm lever | limit switch | 1NO + 1NC | **549.15** |
| **E10000II** | offset rotary roller arm lever | limit switch | 1NO + 1NC | **456.75** |
| **E10000FI** | adjustable length rotary roller arm lever | limit switch | 1NO + 1NC | **485.10** |
| **E10000HI** | adjustable rotary Ø6 mm rod lever | limit switch | 1NO + 1NC | **640.50** |
| **E10000LI** | flexible spring rod actuator rod | limit switch | 1NO + 1NC | **597.45** |
| **E10001SCI** | safety switch for hinges | limit switch | 1NO + 1NC | **821.10** |
| **Diecast metal body** | (IP66) | | | |
| **E10000AM** | top steel plunger actuator | limit switch | 1NO + 1NC | **565.95** |
| **E10000BM** | top steel roller plunger actuator | limit switch | 1NO + 1NC | **654.15** |
| **E10000CM** | roller lever side action | limit switch | 1NO + 1NC | **595.35** |
| **E10000DM** | roller lever vertical action | limit switch | 1NO + 1NC | **626.85** |
| **E10000EMRA** | rotary (metal) roller arm lever | limit switch | 1NO + 1NC | **800.10** |
| **E10000IMRA** | offset rotary (metal) roller arm lever | limit switch | 1NO + 1NC | **924.00** |
| **E10000IM50** | rotary Ø50 mm rubber roller arm lever | limit switch | 1NO + 1NC | **714.00** |
| **E10000FM** | adjustable length rotary roller arm lever | limit switch | 1NO + 1NC | **640.50** |
| **E10000HM** | adjustable rotary Ø6 mm rod lever | limit switch | 1NO + 1NC | **847.35** |
| **E10000LM** | flexible spring rod actuator rod | limit switch | 1NO + 1NC | **801.15** |
| **E300 series - Industrial limit switches** | **IP66** | *diecast metal body* | | |
| Body dimensions: | *(H) 89.5 x (W) 52 x (D) 35.5 mm* | fixing hole distance: 40 mm | | |
| Cable entry: | 2 side + 1 x bottom entry - PG13.8 | | | |
| **E30000AM** | top steel plunger actuator | limit switch | 1NO + 1NC | **794.85** |
| **E30000BM** | top steel roller plunger actuator | limit switch | 1NO + 1NC | **801.15** |
| **E30000CM** | roller lever side action | limit switch | 1NO + 1NC | **834.75** |
| **E30000EMRA** | rotary (metal) roller arm lever | limit switch | 1NO + 1NC | **876.75** |
| **E30000FM** | adjustable length rotary roller arm lever | limit switch | 1NO + 1NC | **919.80** |
| **E30000LM** | flexible spring rod actuator rod | limit switch | 1NO + 1NC | **963.90** |
| **E400 series - Industrial limit switches** | **IP66** | diecast metal body - CENELEC EN50041 | | |
| Body dimensions: | *(H) 106.5 x (W) 40 x (D) 36 mm* | fixing hole distance: 2 x 30 mm | | |
| Cable entry: | 1 x bottom entry - PG13.8 | | | |
| **E40000AM** | top steel plunger actuator | limit switch | 1NO + 1NC | **774.90** |
| **E40000BM** | top steel roller plunger actuator | limit switch | 1NO + 1NC | **800.10** |
| **E40000CM** | roller lever side action | limit switch | 1NO + 1NC | **826.35** |
| **E40000DM** | roller lever vertical action | limit switch | 1NO + 1NC | **896.70** |
| **E40000EMRA** | rotary (metal) roller arm lever | limit switch | 1NO + 1NC | **1 396.50** |
| **E40000IM50** | rotary Ø50 mm rubber roller arm lever | limit switch | 1NO + 1NC | **900.90** |
| **E40000FM** | adjustable length rotary roller arm lever | limit switch | 1NO + 1NC | **813.75** |
| **E40000HM** | adjustable rotary Ø6 mm rod lever | limit switch | 1NO + 1NC | **998.55** |
| **E40000LM** | flexible spring rod actuator rod | limit switch | 1NO + 1NC | **905.10** |
| **E40000LSM** | Cats whisker actuator | limit switch | 1NO + 1NC | **911.40** |



Above ZAR prices do not include VAT. E&OE


E40108TBM


E10001SCI


ELEM00


Z5

## Safety limit switches

- Protection degree: IP66
- Body Material: Plastic or Metal body limit switches
- Rated thermal current: 10A Ithe (IEC947-5-1)
- Mechanical life: 20 million operations

| type | actuator type | description | contact | price |
|---|---|---|---|---|
| **Pull wire safety switches** | | | | |
| Pull wire safety switches guarantee the safety of operator who is able to control the immediate stop of machinery at any point in the operating zone. 1) Tension wire until both contacts are in the closed position 2) When wire is pulled one contact (A) opens and switch is latched *(resettable via front button)* 3) If wire breaks, the other contact (B) opens *Both contacts should be wired in series* | | | | |
| **E10108TBI** | latching *(resettable by button)* pull wire | plastic limit switch | 1NO + 1NC | **1 396.50** |
| **E40108TBM** | latching *(resettable by button)* pull wire | metal limit switch | 1NO + 1NC | **1 690.50** |
| **Key actuated switches** 5 way key actuated switches are used on gates, sliding doors and other devices to protect access to dangerous parts of machines. The key is applied to the moving protection barrier and has to be removed from the switch on every opening thus operating a positive opening or the NC contact. | | | | |
| **E10101S5I** | key actuated safety switch | plastic limit switch | 1NO + 1NC | **752.85** |
| **Hinge operated switches** used to guarantee operator safety, applied to machinery fitted with protection barriers with application directly to the hinge of the enclosure. The switches hinged socket accepts an 8 mm shaft. | | | | |
| **E10001SCI** | safety switch for hinges | plastic limit switch | 1NO + 1NC | **821.10** |
| **Spare contact blocks for all limit switches** | | | | |
| **ELEM00** | standard snap action | contact block | 1NO+1NC | **285.60** |
| **ELEM03** | slow action | contact block | 2NO | **310.80** |
| **Accessories for above limit switches** | | | | |
| **Z5** | angled key for key actuated safety limit switches | | | **163.80** |
| **Z52** | adjustable key for key actuated safety limit switches | | | **218.40** |
| *For pull wire switch accessories (see page **K-43...44**)* | | | | |


PDNS11BX10


PDKS11BX10


LK20K13

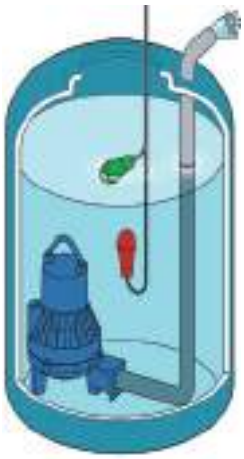
## Industrial foot switches — IP65

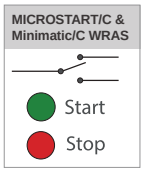
**EMAS** foot operated switches are ideal for all industrial applications. They are supplied as open type or with plastic or diecast foot protection, preventing inadvertent operation.

Internal cams are provided to accommodate up to 3 x contact blocks, two with simultaneous operation and one with delayed switching.

- Mechanical life: 1.000.000 operations
- Electrical life: 100.000 operations min.
- Operating temperature: -5°C...+60°C
- Rated thermal current: 10A Ithe (IEC 947-51)
- Conformity to standards: EN 60947-5-1, VDE0660, UL508

| type | description | protection cover | contact configuration | price |
|---|---|---|---|---|
| **Open type foot switch** | **IP65** | | | |
| **PDNS11BX10** | open type industrial foot switch | no | 1NO + 1NC | **763.35** |
| **Protected foot switches** | **IP65** | | | |
| **PPKS11BX10** | protected type industrial foot switch | thermoplastic | 1NO + 1NC | **1 038.45** |
| **PDKS11BX10** | protected type industrial foot switch | diecast | 1NO + 1NC | **1 533.00** |
| **Contact blocks for above foot switches** | | | | |
| Up to two additional contact blocks can added to foot switches: 1 x simultaneous operation and 1 x with delayed switching for two speed operations. | | | | |
| **LK20K13** | snap action contact block for foot switches | | 1NO + 1NC | **170.10** |






**MATIC** float switches feature a patented inner chamber filled with Polyurethane foam preventing ingress of humidity and water condensation within the switch.

IMQ, ECC, CENELC, VDE, CE approved.

| type | cable length | differential degrees | contact rating | description | dimensions (mm) (H) | (W/Ø) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **MICROSTART/C** | | | | level regulator for clean water | | | | |
| • Can be used for emptying and filling *(SPDT contact)* | | | | | | | | |
| • Counterweight: | | | | Supplied complete with cable fixing | | | | |
| • Protection degree: | | | | IP68 | | | | |
| • Max. water temperature: | | | | 55°C | | | | |
| • Electrical contact: | | | | 10 (4) A 250 VAC *(rated voltage)* | | | | |
| • Max working pressure: | | | | 10 Bar | | | | |
| **ACB05P10** | 5 meter | 30° | 10 (4) A | float switch for clean water | 160 | 70 | 52 | **453.60** |
| **ACB10P10** | 10 meter | 30° | 10 (4) A | float switch for clean water | 160 | 70 | 52 | **712.95** |
| **Minimatic/C WRAS** | | | | WRAS approved for drinking water | | | | |
| • Tested and certified by WRAS | | | | | | | | |
| • Counterweight: | | | | Supplied complete with cable fixing | | | | |
| **AAB05W10** | 5 meter | 30° | 10 A | float switch for drinking water | 172 | 80 | 56 | **869.40** |
| **AAB10W10** | 10 meter | 30° | 10 A | float switch for drinking water | 172 | 80 | 56 | **1 585.50** |



ACB...

**Little Mercury** — submerged float switches for sewer water

For regulation of particularly turbulent industrial waters containing residues of suspended agglomerates or of sewer waters.

- Internal weight fixing the rotation centre *(gravity centre)* close to the cable connection.
- Two switches used: 1 for high level and 1 for low level control
- Protection degree: IP68
- Max. water temperature: 55°C
- Electrical contact: 10 A 250 VAC *(rated voltage)*
- Max working pressure: 10 Bar

**Little Mercury MC** — internal micro switch with self-cleaning contacts

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AEA05P00** | 5 meter | 15° | 10 (4) A | float switch for sewer water | 138 | 76 | – | **1 764.00** |
| **AEA10P00** | 10 meter | 15° | 10 (4) A | float switch for sewer water | 138 | 76 | – | **2 194.50** |




AAB...

**Little EX ATEX** — float switch for use in Diesel oil

For regulation of particularly diesel oil, water and hydrocarbon mixture, motor oils, tools machine oils, etc.

- ATEX Certified: Group and category tool II 1G - Ex ia Group of striking IIC
- Special blue cable for the immersion in hydrocarbons mixture *(3 x 1 NEOPREN)*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AHA05** | 5 meter | 15° | 21.4 mA | float switch for diesel oil | 138 | 76 | – | **2 026.50** |
| **AHA10** | 10 meter | 15° | 21.4 mA | float switch for diesel oil | 138 | 76 | – | **2 730.00** |



AEA...

**Matic V MC** — level regulator for water up to 130°C

Outer casing made in 304 AISI stainless steel and electric with outer SILICON sheath resistant to high temperatures.

- Protection degree: IP68
- Electric contact: Max 0.25 A - 60 V *(rated voltage)*
- Max working pressure: 4 Bar

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AFA05S00** | 5 meter | 10° | 0.25 A | float switch for clean water | – | 75 | – | **3 223.50** |
| **AFA10S00** | 10 meter | 10° | 0.25 A | float switch for clean water | – | 75 | – | **4 032.00** |



AFA...

**Matic P/MC** — float switch for autoclaves and pipings

Due to its small diameter it can be introduced into a tank through a Ø30 mm hole and disposed either horizontally or vertically *(with counterweight).*

- Protection degree: IP68
- Electric contact: Max 0.25 A - 60 V *(rated voltage)*
- Max working pressure: 8 Bar

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AGD05S00** | 5 meter | 5° | 0.25 A | float level switch | 182 | 28.5 | – | **2 457.00** |
| **AGD10S00** | 10 meter | 5° | 0.25 A | float level switch | 182 | 28.5 | – | **3 265.50** |

**Accessories for float switches**

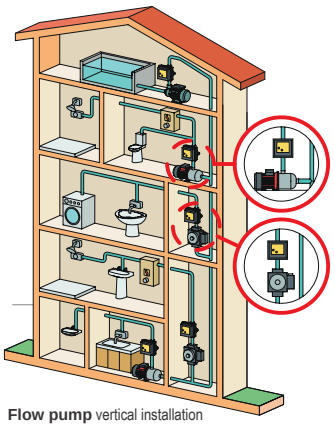
| | | | |
|---|---|---|---|
| **CNTRWT/100** | 100g | standard cable fixing counterweight for float switches | **51.45** |
| **CNTRWT/360** | 360g | stainless steel cable fixing counterweight for float switches | **416.85** |



AGD...



Above ZAR prices do not include VAT. E&OE



**Flow pump** vertical installation



FBA315



EDA

| type | supply voltage | max. pressure | max. temp | description | price |
|---|---|---|---|---|---|
| **FLOW PUMP - Flow switches** | | | | for circulation and centrifugal pumps | |
| **FLOW PUMP** | | | | *in-line flow switch* | |

For the control of electric pumps connected to accumulation tanks to increase flow or pressure. Controls the start-up or switching off of the motor in correspondence to water requirements, assuring a constant flow.

The highly sensitive switch permits control of flow as low as three litres per minute. When a tap is opened and water flows at over three litres per minute, it starts the motor and if flow drops below three litres per minute *(due to closing tap or empty accumulation tank)* it stops the motor.

Manufactured entirely of glass reinforced polyamide with brass threaded input/output joint G1 for vertical in-line connection to liquid piping.

- Incorporated start button
- Minimum flow: 3 litres / min. *(max. 80 litres/min.)*
- Motor load: 10 (4) A 250 VAC
- Start-up delay: 0…10 sec *(adjustable)*

| | | | | | |
|---|---|---|---|---|---|
| **FBA315** | 220 VAC | 8 Bar | 85°C | in-line flow switch 1” inch pipe thread | **1 606.50** |

| | | | | | |
|---|---|---|---|---|---|
| **FLOW MATIC/H10AR** | | | | paddle-type flow switch | |

Designed for the control of fluid movement by circulator or centrifugal electric pumps. The high sensitivity switch permits control of flow as low as 20 litres per minute. They incorporate a brass threaded G1 joint for piping from one inch and over.

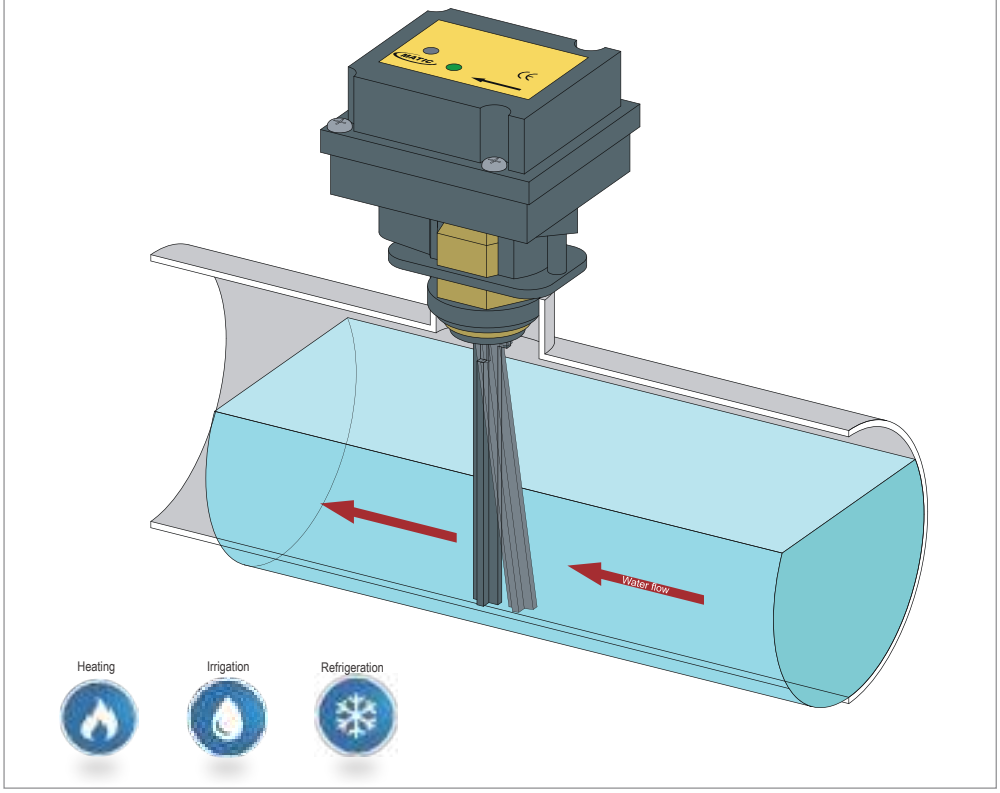
The electric contact is housed externally to the flow switch and is moved by a magnet located on the head of the switch.

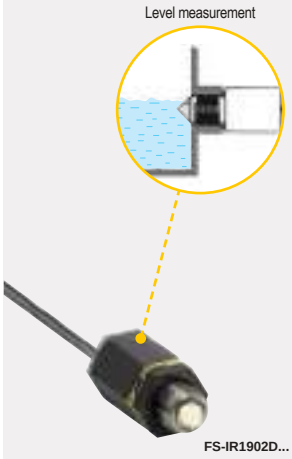
The glass reinforced polyamide paddle can be cut to size in 25 mm segments to the diameter of pipe.

- Incorporated test button
- Minimum flow: 20 litres / min.
- Relay: 10 (4) A 250 VAC NO + NC
- Electric housing: IP54
- Start-up delay: 0…10 sec *(adjustable)*

| | | | | | |
|---|---|---|---|---|---|
| **EDA** | 250 VAC | 10 Bar | 100°C | paddle flow switch 1” screw connection | **2 152.50** |

## **Paddle-type** flow switch






FS-IR1902D...

Optical level sensors emit an internal infrared light beam within a prism then measure the amount of light returned. In dry conditions the LED projects an infrared light beam which is fully reflected back to the receiver by the prism. Conversely, when the prism comes in contact with liquid, the light is dispersed with less light reaching the receiver, triggering the contacts.

Benefits of Optical level sensors are the absence of moving parts, compact dimensions, very slight switching hysteresis ensuring high reliability and repeatability.

- Developed for monitoring the presence (or) absence of transparent liquids and chemicals.
- Extremely accurate for point level detection in high-stress environments in any sized tank
- Using infrared light and no moving parts whatsoever, Immune to electromagnetic interference
- Simply fit and forget

| type | supply voltage | mounting thread | PNP NO | PNP NC | NPN NO | NPN NC | description | price |
|---|---|---|---|---|---|---|---|---|
| **Optical level sensor** | | **IP67** | | | | | | |
| **FS-IR1902D-PNP NO** | 10 - 30 VDC | M12 | • | | | | optical liquid level sensor | **388.50** |
| **FS-IR1902D-PNP NC** | 10 - 30 VDC | M12 | | • | | | optical liquid level sensor | **388.50** |
| **FS-IR1902D-NPN NO** | 10 - 30 VDC | M12 | | | • | | optical liquid level sensor | **388.50** |
| **FS-IR1902D-NPN NC** | 10 - 30 VDC | M12 | | | | • | optical liquid level sensor | **388.50** |

- Simple, compact, and robust, detects high/low levels in any sized container
- Features transient over-voltage, short circuit protection,
- LED Status indication
- Dry run detection

Operating temp: -20ºC…+80ºC
Termination: Cable *(2 meter)*
Body Material: PS *(Polysulfone)*



LS-264

**Magnetic Float switches** *(reed type)*

When the magnetic field (caused by an internal permanent magnet) is moved into the proximity of the sealed reed switch inside the stationary stem, the reed switch contacts close the electrical circuit. The float switches are extremely compact, simple and easy to install and not effected by electrical interference and withstand chemicals.

**Safe - Convenient - Low cost** *N.O. (reversible by reversing float)*

Electrical connection: 300 mm cable
Switch current/voltage: 70 VA
Max voltage: 250 VAC / 200 VDC
Accuracy: ± 2 mm in water



LS-317 LS-064A LS-318-1

| type | mounting | thread size (mm) | pressure withstand | description | price |
|---|---|---|---|---|---|
| **Plastic (top/bottom mount)** | | | | | |
| **Float size:** | | *(H) 24 x (Ø) 20 mm* | | | |
| Operating temperature: | | -10°C...+70°C | | | |
| **Short stem** - float switch 36 mm | | *Internal mounting* | | | |
| **LS-264** | top/bottom | M10 | 8 Bar | vertical mount float switch | **190.05** |
| **Long stem** - float switch 55 mm | | *Internal mounting* | | | |
| **LS-297** | top/bottom | M10 | 8 Bar | vertical mount float switch | **205.80** |
| **Stainless steel - vertically mount float switches** | | | | | |
| Float size: | | *(H) 28 mm (Ø) 28 mm* | | | |
| Operating temperature: | | -30°C...+125°C | | | |
| Material: | | SUS 304 stainless steel | | | |
| **Short stem** - float switch 40 mm | | *Internal mounting* | | | |
| **LS-317** | top/bottom | G1/8" | 20 Bar | vertical mount float switch | **834.75** |
| **Long stem** - float switch 100 mm | | *Internal mounting* | | | |
| **LS-064A** | top/bottom | G1/8" | 20 Bar | vertical mount float switch | **834.75** |
| **Long stem** - float switch 100 mm | | *External mounting* | | | |
| **LS-318-1** | top/bottom | NPT 1" | 20 Bar | vertical mount float switch | **735.00** |
| **Bent stem (90°)** - float switch 75 mm | | *Internal mounting* | | | |
| **LS-052-1** | top/bottom | G1/8" | 20 Bar | vertical mount float switch | **771.75** |



LS-052-1

*Continue on the opposite page...*



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**Electrical connection:** 300 mm cable
**Switch rating:** 0.8A max
**Switch current:** 1.5A
**Switch voltage:** 250 VAC / 200 VDC

**Material:** Plastic
Brass
Stainless

**Liquid medium:** Clean water


FS-100


FS-902


FS-300/402


FS-200/500

| type | for domestic use | | heavy duty | | |
|---|---|---|---|---|---|
| **Model** | **FS-100** | **FS-902** | **FS-300** | **FS-402** | **FS-500** |
| **Fitting** | NPT3/4" | 1/2"NPT for inlet 1/2" NPT for outlet | NPT3/4" | NPT1/2" | NPT1/2" |
| **Flow switches housing** | plastic PPR | plastic PBT | SUS304 | SUS304 | brass - C37700 |
| **Operating pressure** | 120 PSI max | 140 PSI max | 250 PSI max | 250 PSI max | 150 PSI max |
| **Temperature range** | -10ºC...80ºC | -10ºC...105ºC | -20ºC...120ºC | -20ºC...120ºC | -10ºC...120ºC |
| **Medium (liquid)** | clean water | clean water | clean water | clean water | clean water |
| **Contact form** | form A S.P.S.T. | form A S.P.S.T. | form A S.P.S.T. | form A S.P.S.T. | form A S.P.S.T. |
| **Carry current** | 1.5A | 1.0A | 1.5A | 1.5A | 1.5A |
| **Switch current** | 0.8A max | 0.7A max | 0.8A max | 0.8A max | 0.8A max |
| **Switch voltage** | 220 VAC/DC | 220 VAC/DC | 220 VAC/DC | 220 VAC/DC | 220 VAC/DC |
| **Power rating** | 50VA | 50VA | 50VA | 50VA | 50VA |
| **Operating flow rating** | 1.5L/min | 0.75 - 2L/min | 1.0 - 8L/min | 1.2 - 4L/min | 1 - 4L/min |
| **Setting flow value accuracy** | ±10% | ±10% | ±10% | ±10% | ±10% |
| **Maximum flow** | 15L/min (pressure drop is 10 PIS) | 10L/min (pressure drop is 10 PIS) | 10L/min (pressure drop is 10 PIS) | 10L/min (pressure drop is 10 PIS) | 15L/min (pressure drop is 10 PIS) |
| **Mounting shock** | 30g for 11ms duration | 30g for 11m duration | 30g for 11ms duration | 30g for 11ms duration | 30g for 11ms duration |
| **Mounting vibration** | 35 to 500Hz | 35 to 500Hz | 35 to 500Hz | 35 to 500Hz | 35 to 500Hz |
| **Duration of cycle** | 100.000 cycles | 100.000 cycles | 100.000 cycles | 100.000 cycles | 100.000 cycles |
| **Price** | **512.40** | **531.30** | **1 249.50** | **1 281.00** | **1 123.50** |


LS-147

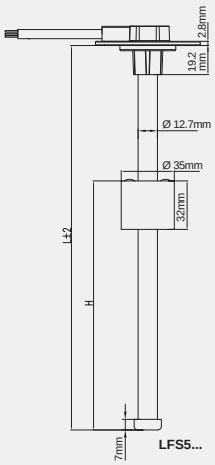

LS-055-1

*... Continued...* **Nylon** *(side mount)* **hinged type**

| type | mounting size (mm) | thread withstand | pressure | mounting | description | price |
|---|---|---|---|---|---|---|
| Can be used for "high" or "low" level detection *(by turning float direction "up" or "down").* | | | | | | |
| Float size: | | | *(L) 47 mm (Ø) 17 mm* | | | |
| Operating temperature: | | | -10°C...+75°C | | | |
| Material: | | | Nylon | | | |
| **LS-147** | side mount | M16 | 8 Bar | internal | horizontal mount float switch | **358.05** |
| **LS-148** | side mount | NPT 1/2" | 8 Bar | external | horizontal mount float switch | **364.35** |

**Stainless steel SUS 304** *(side mount)* **hinged type**

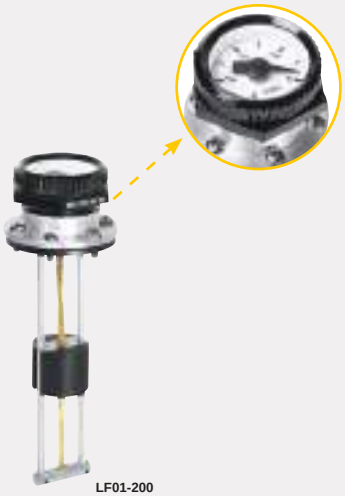
| | | | | | | |
|---|---|---|---|---|---|---|
| Can be used for "high" or "low" level detection *(by turning float direction "up" or "down").* | | | | | | |
| Float size: | | | *(L) 47 mm (Ø) 17 mm* | | | |
| Operating temperature: | | | -30°C...+125°C | | | |
| **LS-154-1** | side mount | M16 | 10 Bar | internal | horizontal mount float switch | **989.10** |
| **LS-055-1** | side mount | NPT 1/2" | 10 Bar | external | horizontal mount float switch | **922.95** |



LFS5...

| | |
|---|---|
| **Red** | Signal (out) |
| **Black** | Common (input) |
| **White** | Low level alarm output |


LFTN-...


LF01-200

## LFS5 series - Fuel level sensor *(IP67)*

S5 series level sensors employ a magnetic field principle to sense the fuel level depth and to operate the low level alarm signal. The sensors feature long life, unaffected by vibration and are anti explosive.

- Low level alarm contact: 500 mA
- Output signal: 0 - 190 Ω or 4-20mA
- Accuracy: 12 mm

Material: Main body made of SU304 stainless steel
Mounting: Standard SAE 5 hole mounting flange *(supplied with M5 screws and NBR gasket)*

| type | sensor length | output signal | supply | description | price |
|---|---|---|---|---|---|
| **0 - 190Ω resistance output** | | | | -40°C ...+85°C | |
| **LFS5-150** | 150 mm | 0 - 190Ω | – | magnetic fuel level sensor | **1 239.00** |
| **LFS5-200** | 200 mm | 0 - 190Ω | – | magnetic fuel level sensor | **1 312.50** |
| **LFS5-250** | 250 mm | 0 - 190Ω | – | magnetic fuel level sensor | **1 417.50** |
| **LFS5-300** | 300 mm | 0 - 190Ω | – | magnetic fuel level sensor | **1 512.00** |
| **LFS5-350** | 350 mm | 0 - 190Ω | – | magnetic fuel level sensor | **1 774.50** |
| **LFS5-400** | 400 mm | 0 - 190Ω | – | magnetic fuel level sensor | **1 869.00** |
| **LFS5-500** | 500 mm | 0 - 190Ω | – | magnetic fuel level sensor | **2 194.50** |
| **LFS5-600** | 600 mm | 0 - 190Ω | – | magnetic fuel level sensor | **2 551.50** |
| **LFS5-800** | 800 mm | 0 - 190Ω | – | magnetic fuel level sensor | **3 412.50** |
| **LFS5-1000** | 1000 mm | 0 - 190Ω | – | magnetic fuel level sensor | **4 189.50** |
| **LFS5-1200** | 1200 mm | 0 - 190Ω | – | magnetic fuel level sensor | **4 998.00** |
| **LFS5-1400** | 1400 mm | 0 - 190Ω | – | magnetic fuel level sensor | **5 743.50** |
| **LFS5-1600** | 1600 mm | 0 - 190Ω | – | magnetic fuel level sensor | **6 940.50** |
| **LFS5-2000** | 2000 mm | 0 - 190Ω | – | magnetic fuel level sensor | **8 578.50** |
| **4 - 20mA output** | | | supply voltage: 24 - 32V | -40°C...+85°C | |
| **LFS5-150/4-20** | 150 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **1 396.50** |
| **LFS5-200/4-20** | 200 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **1 470.00** |
| **LFS5-300/4-20** | 300 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **1 669.50** |
| **LFS5-400/4-20** | 400 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **2 026.50** |
| **LFS5-500/4-20** | 500 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **2 352.00** |
| **LFS5-600/4-20** | 600 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **2 709.00** |
| **LFS5-800/4-20** | 800 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **3 570.00** |
| **LFS5-1000/4-20** | 1000 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **4 347.00** |
| **LFS5-1200/4-20** | 1200 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **5 155.50** |
| **LFS5-1400/4-20** | 1400 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **5 901.00** |
| **LFS5-1600/4-20** | 1600 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **7 182.00** |
| **LFS5-2000/4-20** | 2000 mm | 4 - 20mA | 24 VDC | magnetic fuel level sensor | **9 135.00** |

*Other lengths available on request*

## LFTN series - Fuel tank level sensors IP67

**LFTN** series sensors employ a magnetic field principle to detect fuel level depth and to operate a low level alarm signal. The sensor also incorporates a suction pipe, return pipe and breather pipe into the same mounting flange as the sensor.

| type | sensor length | output signal | fuel pipes *(bulge fitting)* suction | return | breather | description | price |
|---|---|---|---|---|---|---|---|
| **LFTN-150** | 150 mm | 0 - 190Ω | 10 mm | 10 mm | 6 mm | fuel level sensor | **1 564.50** |
| **LFTN-200** | 200 mm | 0 - 190Ω | 10 mm | 10 mm | 6 mm | fuel level sensor | **1 827.00** |
| **LFTN-250** | 250 mm | 0 - 190Ω | 10 mm | 10 mm | 6 mm | fuel level sensor | **2 068.50** |
| **LFTN-300** | 300 mm | 0 - 190Ω | 10 mm | 10 mm | 6 mm | fuel level sensor | **2 257.50** |
| **LFTN-400** | 400 mm | 0 - 190Ω | 10 mm | 10 mm | 6 mm | fuel level sensor | **2 635.50** |
| **LFTN-500** | 500 mm | 0 - 190Ω | 10 mm | 10 mm | 6 mm | fuel level sensor | **3 097.50** |
| **LFTN-600** | 600 mm | 0 - 190Ω | 10 mm | 10 mm | 6 mm | fuel level sensor | **1 470.00** |
| **LFTN-700** | 700 mm | 0 - 190Ω | 10 mm | 10 mm | 6 mm | fuel level sensor | **3 601.50** |

## LF01 series - Mechanical fuel level gauges *(aluminium alloy)* -40°C...+85°C

**LF01** mechanical fuel gauges work on a float connected to a swivel rod which indicates fuel level as the float adjusts to the fuel level.

- Mounting: 6 hole mounting flange *(M45x2 thread to accept gauge)*

| | | | | |
|---|---|---|---|---|
| **LF01-150** | 150 mm | gauge | mechanical fuel level gauge | **817.95** |
| **LF01-200** | 200 mm | gauge | mechanical fuel level gauge | **837.90** |
| **LF01-250** | 250 mm | gauge | mechanical fuel level gauge | **873.60** |
| **LF01-300** | 300 mm | gauge | mechanical fuel level gauge | **893.55** |
| **LF01-400** | 400 mm | gauge | mechanical fuel level gauge | **981.75** |
| **LF01-500** | 500 mm | gauge | mechanical fuel level gauge | **1 060.50** |
| **LF01-600** | 600 mm | gauge | mechanical fuel level gauge | **1 134.00** |
| **LF01-700** | 700 mm | gauge | mechanical fuel level gauge | **1 197.00** |

*Other lengths available on request*



Above ZAR prices do not include VAT. E&OE


EE804A


EE805A


EE820


EE860

New

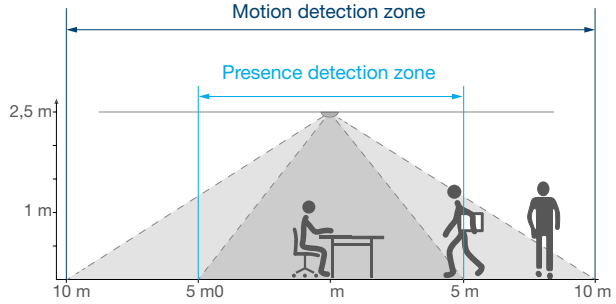

EER503

## Occupancy sensors

- Detect movement
- Measure ambient light
- Automatically switch lights “on” *(if ambient is below pre-set level and movement is detected)*
- Automatically switch lights “off” *(if no movement is detected after a pre-set time delay period)*
- Complies with: IEC 60669-1 and IEC 60669-2-1
  - Supply voltage: 230 VAC 50Hz
  - Switch current: 8/10/16A 230V (AC1)
  - Lux adjustment: 5 - 1000 lux

| type | mounting | | description | rated current | price |
|---|---|---|---|---|---|
| **EE804A / EE805A series - Motion detectors** | | | | | |
| EE804A and EE805A are 360° indoor movement detectors with a built-in light sensitive switching function. Ideal for use in interior circulation areas such as corridors, entrance halls, bathrooms etc. | | | | | |
| - Operating time delay: | | 5s - 15 min | | | |
| - Detection range: | | 6 meter radius *(at 2.5 meters high)* 360° | | | |
| **EE804A** | surface | 105.5 mm dia. | economical motion detector | 8A | **779.10** |
| **EE805A** | flush | 75 mm hole | economical motion detector | 8A | **829.50** |
| **EE820 series - Basic motion detectors** | | | **IP55** | | |
| Wall mounting with numerous mounting possibilities for indoor or outdoor applications. | | | | | |
| - Operating time delay: | | Pulse, 5s -15 min | | | |
| - Detection range: | | 16 meter frontal /8 meter lateral *(at 2.5 meters high)* | | | |
| **EE820** | surface | 140° | wall mnt. basic occupancy sensor | 10A | **1 025.85** |
| **EE860 - Enhanced motion detectors** | | | **IP55** | | |
| Offers vertical and horizontal adjustment and area limitation with shutters suitable for indoor or outdoor applications. Wall, inner/outer corner, ceiling mount. Setting and adjustments made via concealed potentionmeters or remote control. | | | | | |
| - Operating time delay: | | 5s - 15 min | | | |
| - Detection range: | | 16 meter frontal / 10 meter lateral *(at 2.5 meters high)* | | | |
| - Sensitivity adjustment: | | 20%...100% | | | |
| **EE860** | surface | 220° | wall mnt. basic occupancy sensor | 16A | **1 638.00** |
| **Accessories** | | | | | |
| **EE825** | corner mount accessory *(inner/outer)* | | | EE820 | **113.40** |
| **EE827** | ceiling mount accessory | | | EE820 | **148.05** |
| **EE855** | corner mount accessory *(inner/outer)* | | | EE860 | **113.40** |
| **EE806** | IR remote control for enhanced series | | | EE820 | **932.40** |
| **High-performance combined presence and motion detector** | | | | | |
| High-performance presence detectors combine detection of presence and motion in an area. Ideally suited for offices where human presence detection is utilised to maintain lighting conditions. Motion detection enhances the overall detection range of the sensors. | | | | | |
| **Compact flush mount presence detector** | | | | | |
| Compact flush device mounts through a 68 mm hole for very neat installation. Settings and adjustments made via concealed potentiometers or remote control. | | | | | |
| - Operating time delay: | | 5 min - 1 hour | | | |
| - Detection range: | | Presence 10 meter radius *(at 2.5 meters high)* | | | |
| | | Motion 20 meter radius *(at 2.5 meters high)* | | | |
| **EER503** | flush | 68 mm hole | 360° enhanced presence detector | 10A | **1 995.00** |

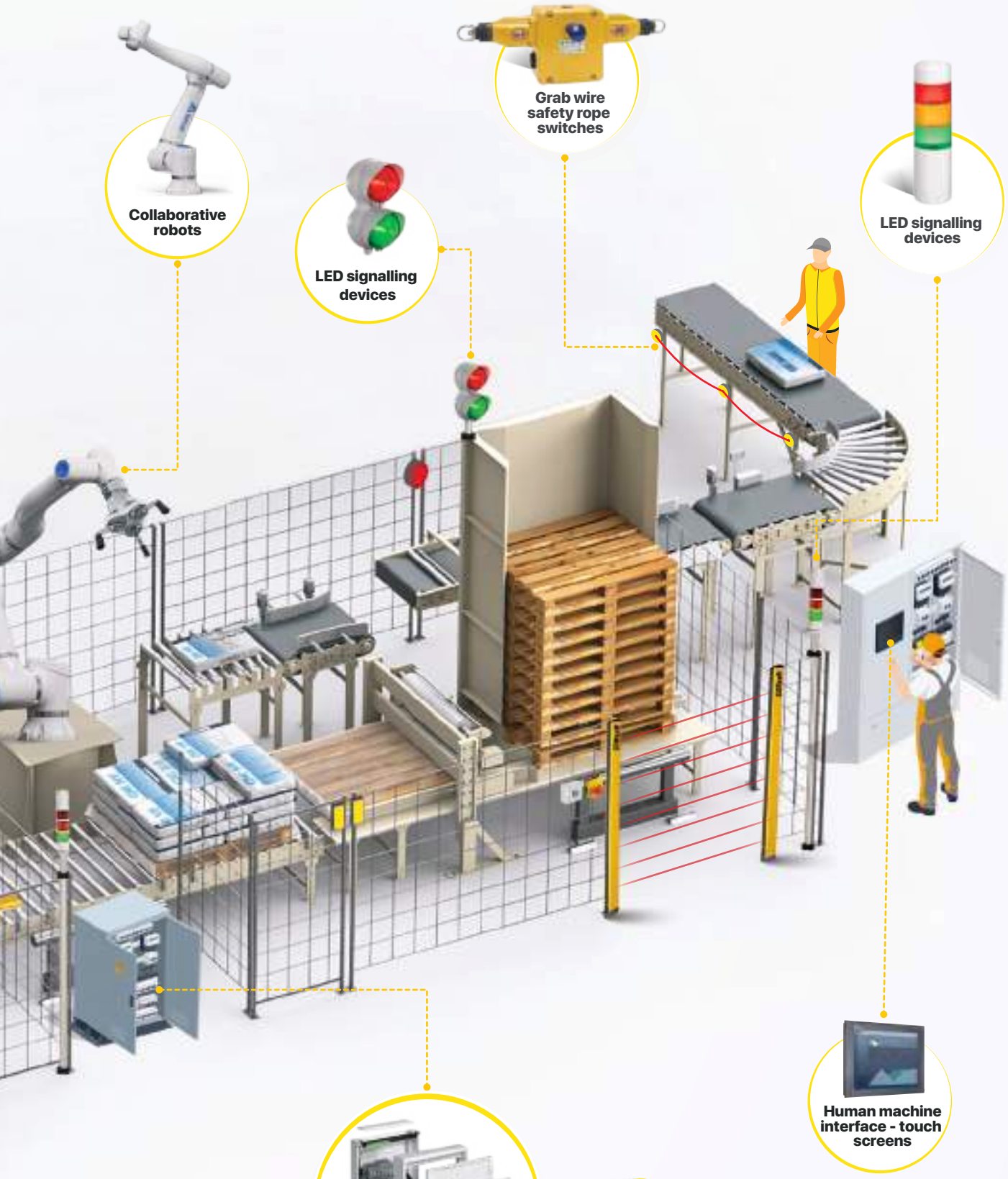
## Motion detection / Presence detection



# Prioritising Safety in Process Automation

In today's fast-paced industrial environments, ensuring the safety of both people and machinery is paramount. A safe workplace not only protects employees but also enhances productivity and reduces downtime. Our comprehensive range of safety products is designed to meet the rigorous demands of a safety-conscious employer. From advanced sensor technology to reliable emergency systems, our solutions are sourced from globally recognised manufacturers, ensuring your process automation environment is secure and efficient.




Collaborative robots
Grab wire safety rope switches
LED signalling devices
LED signalling devices
Human machine interface - touch screens
Configurable safety controllers
Safety Contactor
Surge protection devices
Earth Leakage Protection


Robustness in harsh environmental conditions

## Guardian line series - Safety rope switches

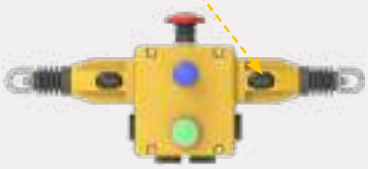
All IDEM safety rope emergency stop switches conform to **ISO13850 (EN418)** and **EN60947-5-5** standards. They provide positive mechanical linkage between switch contacts and the wire rope as per **EN60947-5-1**. Pre-tensioning the rope using a tensioner/gripper device, clamps the rope and hooks onto the switch eyebolt.

Correct tension is observed through the indicator window on the switch, once tensioned, switch contacts can be set to operational condition *(safety contacts closed, auxiliary contacts open)* by pressing the blue reset button on the switch cover.

All Safety rope switches incorporate wire-breakage monitoring, pulling or breakage of the rope, positively opens safety contacts closing auxiliary contacts, mechanically latching the switch which can only be returned to the operational condition by pressing blue reset button as required by ISO13850. ATEX versions available on request.

- Rugged die-cast metal body (painted yellow) or stainless steel 316
- Enclosure protection: IP67, IP69K (stainless steel versions)
- Ambient temperature: -25…+80°C
- Typical operating force: <125N (<300 mm deflection)
- Mechanical life: 1.000 000
- Thermal current (Ith): 10A
- Rated insulation voltage: 500V
- Spare replacement lid: With or without LED (*available on request*)
- Standards: EN60947-5-1/-5-5, EN62061 (*up to SIL3*), UL508, ISO13850, ISO13849-1 *(up to PLe)*


Tension indicator


141029 + 140044

| type | contacts | | mounting position | max. protection length | | LED indication | price |
|---|---|---|---|---|---|---|---|
| | NC | NO | | 1 switch | 2 switches | | |

### GLH series - Heavy duty safety rope switches

Heavy duty safety rope pull switch protect long conveyor lengths. Robust housings survive indoor or outdoor use including washdown *(IP67 rating).* Lengths over 2 km can be achieved with less than 20 switches, shorter rope spans up to 200m can be achieved using just one switch providing a cost effective solution.

Robust housings survive indoor and outdoor use, including washdown to IP67 and IP69K *(on stainless steel versions only).*

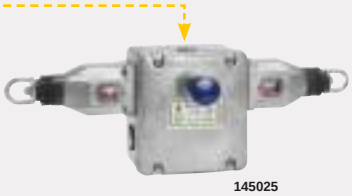
- Rope span (per switch): 100m *(single head)* - 200m *(dual head)*
- Mounting / position: 4 x M5 / any position
- Cable/conduit entry: 4 x M20 cable entries

***Note:*** Optional bi-colour LED indicates switch status from a distance
Indication of rope status: Steady - Green = machine running
Flashing - Red = machine stopped


141054...

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GLH - Die-cast housing** | | | | | | **IP67** | |
| **141041** | 4 | 2 | centre | 200m | 250m | – | **7 612.50** |
| **141029*** | 4 | 2 | centre | 200m | 250m | • | **8 295.00** |
| **141037** | 4 | 2 | left | 100m | 125m | – | **4 284.00** |
| **141053*** | 4 | 2 | left | 100m | 125m | • | **4 966.50** |
| **141038** | 4 | 2 | right | 100m | 125m | – | **4 284.00** |
| **141054*** | 4 | 2 | right | 100m | 125m | • | **4 966.50** |
| **GLH-SS - Stainless Steel 316 housing** | | | | | | **IP69K** | |
| **145025** | 4 | 2 | centre | 200m | 250m | – | **11 445.00** |
| **145029*** | 4 | 2 | centre | 200m | 250m | • | **12 390.00** |
| **145037** | 4 | 2 | left | 100m | 125m | – | **8 893.50** |
| **145053*** | 4 | 2 | left | 100m | 125m | • | **9 912.00** |
| **145038** | 4 | 2 | right | 100m | 125m | – | **8 893.50** |
| **145054*** | 4 | 2 | right | 100m | 125m | • | **9 912.00** |

* *LED indication - provide voltage requirement by adding following to end of part number:*
**A** *= 24 VDC* / **B** *= 110VAC* / **C** *= 230 VAC*


145025

### Accessories - For rope operated switches

**Accessories - Rope tensioner/gripper** *(quick fixing) - for rope operated switches*


140044

| type | description | length (mm) | material | price |
|---|---|---|---|---|
| | Tensioning of the rope is achieved using IDEM's patented tensioner/gripper accessory. Traditional turnbuckle/clamp systems are difficult to tension and adjust, requiring frequent re-tensioning or maintenance, making viewing of the switch tension window difficult. | | | |
| | IDEMs tensioner/gripper accessory offers greater reliability, significantly reducing installation time by offering an eyehook, tensioner thimble and high strength gripper in one assembly, enabling rapid connection to the switch eyebolts with fast accurate tensioning of the rope while in close proximity to the viewing window of the switch. | | | |
| **140020** | rope tensioner/gripper for rope switches | 190...248 | galvanised | **1 407.00** |
| **140019** | rope tensioner/gripper for rope switches | 190...248 | stainless steel | **2 236.50** |
| **140044** | red emergency-stop mushroom pushbutton | | twist release | **596.40** |
| **140140** | red SS emergency-stop mushroom pushbutton | | twist release | **1 522.50** |



Above ZAR prices do not include VAT. E&OE



Robustness in harsh environmental conditions

## GLS series - Standard duty safety rope switches

Guardian Line – General / standard duty safety rope switch is suitable to protect conveyor lengths up to 80m using two switches or 60m using a single switch. An emergency stop button can be fitted on either side, offering a traditional emergency stop function on the switch.

An optional bi-colour LED is also available to indicate the switch status from a distance. Rugged internal sealing and a robust LED lens permits the use of high pressure hosing, suitable for indoor and outdoor use.

- Rope span *(per switch)*: 60m *(single switch)* - 80m *(dual switch)*
- Cable/conduit entry: 3 x M20 cable entries

| type | contacts NC | contacts NO | mounting position | max. protection length 1 switch | max. protection length 2 switches | description | LED indication | price |
|---|---|---|---|---|---|---|---|---|
| **GLS Die-cast housing** | | | | *(IP67)* | | | | |
| **142052** | 2 | 2 | left/right | 60m | 80m | rope switch | – | **3 675.00** |
| **142058*** | 2 | 2 | left/right | 60m | 80m | rope switch | • | **4 357.50** |
| **GLS-SS Stainless steel 316 housing** | | | | *(IP69K)* | | | | |
| **144003** | 2 | 2 | left/right | 60m | 80m | rope switch | – | **7 308.00** |
| **144009*** | 2 | 2 | left/right | 60m | 80m | rope switch | • | **8 316.00** |

* *LED indication - provide voltage requirement by adding following to end of part number:*
**A** *= 24 VDC /* **B** *= 110VAC /* **C** *= 230 VAC*



142052



144009A

## GLM series - Mini duty safety rope switches

Compact, robust die-cast safety rope pull switch to protect short conveyor lengths up to 50m using two switches or 30m using a single switch, providing a reliable, cost-effective safety solution for conveyor systems. An emergency stop button can be fitted to the side of the switch to offering a traditional emergency stop function close to the switch.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **143001** | 2 | 1 | left/right | 30m | 50m | rope switch | – | **2 982.00** |

### Mounting accessories for rope operated switches

| type | description | length (mm) | material | price |
|---|---|---|---|---|
| **140020** | rope tensioner/gripper for rope operated switches | 190...248 | galvanised | **1 407.00** |
| **140019** | rope tensioner/gripper for rope operated switches | 190...248 | stainless steel | **2 236.50** |
| **140021** | universal pulley for rope operated switches | 77 mm | stainless steel | **956.55** |
| **140064** | universal pulley for rope operated switches | 77 mm | galvanised | **625.80** |
| **140045** | standard eyebolt for rope operated switches *(8 pack)* | 84 mm | stainless steel | **983.85** |
| **140046** | standard eyebolt for rope operated switches *(8 pack)* | 84 mm | galvanised | **511.35** |
| **140099** | roller eyebolt with nuts *(non adjusting)* | 71 mm | die cast metal | **931.35** |
| **140048** | roller eyebolt with nuts *(adjustable)* | 107-140 mm | die cast metal | **1 197.00** |
| **140047-S** | pigtail eyebolt *(short)* M10 46 mm thread *(1 /pack)* | 114 mm | stainless steel | **142.80** |
| **140043** | safety spring for rope operated switches` | 220 mm | stainless steel | **656.25** |
| **140165❖** | mounting brackets for rope op. switches *(1 /pack)* | 127 mm | stainless steel | **466.20** |
| **140059** | anti-tamper screwdriver for rope operated switches | T20 | – | **74.55** |

❖ **GLM** *and* **GLS** *series can be mounted using one bracket.* ***GLHD*** *needs two.*




140019



140043



140021



140047-S



140099

### Steel cable *(polypropylene covered)* for rope operated switches

4.0 mm outside diameter. steel inner - polypropylene cover

| | | | | |
|---|---|---|---|---|
| **140037** | insulated steel cable for rope operated switches | 30m | steel/PVC | **1 438.50** |
| **140038** | insulated steel cable for rope operated switches | 50m | steel/PVC | **1 984.50** |
| **140040** | insulated steel cable for rope operated switches | 100m | steel/PVC | **3 444.00** |
| **140068** | insulated steel cable for rope operated switches | 500m | steel/PVC | **11 655.00** |

## Rope kits for rope operated switches

**Rope kits** *Rope kits comprise: tensioner/gripper assembly + allen key, quick link (up to 50m), length rope terminated one end and No. eyebolts required for length of rope*

| type | length | description | No. of eyebolts | tension/ gripper | price |
|---|---|---|---|---|---|
| **140004** | 20m | rope kit for rope operated switches | 9 | 1 + QL | **3 307.50** |
| **140005** | 30m | rope kit for rope operated switches | 12 | 1 + QL | **3 738.00** |
| **140006** | 50m | rope kit for rope operated switches | 20 | 1 + QL | **4 452.00** |
| **140007** | 80m | rope kit for rope operated switches | 30 | 2 | **4 966.50** |
| **140008** | 100m | rope kit for rope operated switches | 37 | 2 | **5 397.00** |
| **140009** | 126m | rope kit for rope operated switches | 45 | 2 | **5 974.50** |



140004



140057

### Contact blocks *(spare) for rope operated switches*

| | | | | | | |
|---|---|---|---|---|---|---|
| **140057** | 2 | 1 | 3 pole | contact block for rope operated switch | end fixing | **537.60** |
| **140061** | 2 | 2 | 4 pole | contact block for rope operated switch | side fixing | **678.30** |
| **140062** | 3 | 1 | 4 pole | contact block for rope operated switch | side fixing | **678.30** |
| **140063** | 4 | – | 4 pole | contact block for rope operated switch | side fixing | **678.30** |



Belt alignment monitoring

## Conveyor belt alignment switches

Conveyor belt alignment switches are mounted on sections of plant conveyors to protect against excessive belt drift due to unintentional movement. Should the belt position drift, the roller arm of the switch will move to a pre-determined position causing activation of a control circuit providing positively opening NC safety contacts (to **EN60947-5-1**) at the point of tripping.

2 internal contact blocks, one to provide a **"WARNING"** signal the other to provide a **"STOP"** signal.

Rugged die-cast metal body *(painted yellow)* or Stainless Steel 316

| | | | |
|---|---|---|---|
| Switching range: | "Warning" signal | 10…18º | (factory setting 14º) |
| | "Stop" signal | 15…35º | (factory setting 25º) |
| Operating torque: | Medium duty | 1.8Nm…2.8Nm | *(factory setting 1.8Nm)* |
| | Heavy duty | 3.0Nm…5.0Nm | *(factory setting 3.0Nm)* |

- Enclosure protection: IP67 - IP69K *(in stainless steel)*
- Ambient temperature: -25…+80ºC
- Vibration resistance: 10-500Hz 0.35 mm
- Shock resistance: 11ms 15g
- Mechanical life: 150.000 operations
- Thermal current (Ith): 10A
- LED indication: Available on request
- Standards: EN60947-5-1, EN620
- Spare replacement lid: With or without LED (*available on request*)



500001



174401



230001



232025A

| type | contacts | | roller dimensions | | factory settings | | | duty | price |
|---|---|---|---|---|---|---|---|---|---|
| | NC | NO | Ø | length | torque | warning | stop | | |
| **Python line series - Conveyor belt alignment switches** | | | | | | | | | |
| • Cable/conduit entry: 4 x M20 cable entries | | | | | | | | | |
| **Die-cast *(painted yellow)* housing** | | | | | | | | | |
| **500001** | 2 | 2 | 35 mm | 120 mm | 1.8Nm | 14º | 25º | medium | **9 156.00** |
| **500005** | 2 | 2 | 35 mm | 230 mm | 3.0Nm | 14º | 25º | heavy | **11 025.00** |
| **Stainless steel 316 housing** | | | | | | | | | |
| **501001** | 2 | 2 | 35 mm | 120 mm | 1.8Nm | 14º | 25º | medium | **14 490.00** |
| **501005** | 2 | 2 | 35 mm | 230 mm | 3.0Nm | 14º | 25º | heavy | **15 960.00** |

**HLM-CBA series - Mini belt alignment switches**

- Heavy duty die cast bodies *(painted red)*
- High mechanical life over 500.000 cycles
- Standards: ISO14119, EN60947-5-1, EN60204-1, ISO13849-1, EN62061, UL508

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **174401** | 2 | 2 | 22 mm | 70 mm | 1.10Nm | plastic roller | **4 347.00** |
| **174451** | 2 | 2 | 22 mm | 70 mm | 1.40Nm | stainless steel roller | **5 334.00** |

**Emergency stop stations**

IDEM's emergency stop switches provide robust emergency stop protection for machines and exposed conveyors. They are suitable for use within all industry sectors.

- Yellow Polyester *(IP67)* or stainless steel 316 body *(IP69K)*
- Safety trip mechanism opens safety contacts if lid removed - extra degree of anti-tamper
- Button protection shroud version with padlock holes to enable "Lock Out"
- 3 and 4 pole contact blocks provide positively operated switch contacts
- ATEX versions available on request

| | |
|---|---|
| Ambient temperature: | -25…+80ºC |
| Mechanical life: | 1.500.000 operations |
| Thermal current (Ith): | 10A |
| Cable/conduit entry: | 2 x M20 *(3-pole)* / 3 x M20 *(4-pole)* |
| Standards: | EN60947-5-1, EN60947-5-5, EN62061 UL508, ISO13850, ISO13849-1 |

| | | | | |
|---|---|---|---|---|
| **Polyester housing** | | | *(IP67)* | |
| **230001** | 2 | 1 | plastic *(polyester)* emergency stop station | **880.95** |
| **230003** | 2 | 1 | plastic *(polyester)* emergency stop station with button shroud | **1 060.50** |
| **Stainless steel housing** | | | *(IP69K)* | |
| **231001** | 2 | 1 | stainless steel E-stop station | **4 011.00** |
| **231005** | 2 | 1 | SS E-stop station with button shroud | **4 252.50** |
| **232019*** | 3 | 1 | SS E-stop station with dual colour LED | **5 334.00** |
| **232023*** | 2 | 2 | SS E-stop station dual colour LED/button shroud | **5 575.50** |
| **232025*** | 3 | 1 | SS E-stop station dual colour LED/button shroud | **5 575.50** |
| **232023-AS** | 2 | 2 | SS E-stop station dual colour LED *(steady)*/button shroud | **5 449.50** |

* *Please provide voltage requirement by adding following to end of part number:*
**A** = *24 VDC* / **B** = *110 VAC* / **C** = *230 VAC*



Above ZAR prices do not include VAT. E&OE




140107


200007-SS


208007


140111


202001-SS


205001


140108


140110

**Tongue-operated switches** *(connects to most safety relays)*

IDEM Tongue-operated safety interlock switches fit to the leading edge of sliding, hinged or lift off machine guards to provide positively operated switching contacts and a tamper resistant *(not easily defeatable)* key mechanism. Used independently to provide positively operated contacts to **EN60947-5-1** or in combination with any dual channel safety monitoring relays to provide up to category **4 PLe ISO13849-1**.

The switch is mounted to the frame of the guard or machine, and the actuator profile is fitted to the moving part *(frame)* of the guard and aligned to match a cam mechanism within the switch entry aperture, providing a positively operated *(not easily defeatable)* interlock switch. Inserting the actuator into the switch closes the safety contacts enabling the machine start circuit. Withdrawing the actuator positively opens the safety contacts.

Positive break contacts to EN60947-5-1 High functional safety to ISO13849-1

- Actuators for switches ordered separately *(see accessories section below)*
- Cable/conduit entry: 3 x M20 cable entries

| type | No. entry positions | contacts NC | contacts NO | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Type KP - Kobra Tongue-operated switches** *(non-locking)* | | | | | | | | |
| KP and K-SS switches provide industry standard fixing points and a rotating head for up to 4 actuator entry positions. The double seal gasket and stainless steel internal screws reduce the likelihood of rust build up inside the switch. IDEMs patented CAM system ensures long term reliability, even under harsh environmental conditions. | | | | | | | | |
| • Enclosure protection: IP67 - rugged polyester body with stainless steel head | | | | | | | | |
| • Ambient temperature: -25…+80ºC | | | | | | | | |
| • Thermal current (Ith): 10A | | | | | | | | |
| • Rated Ins/withstand voltage: 500 VAC/2500 VAC | | | | | | | | |
| • Standards: ISO14119, EN60947-5-1, EN60204-1, ISO13849-1, EN62061, UL508 | | | | | | | | |
| **200007-SS** | 4 | 3 | 1 | Tongue-operated switches | 98 | 58 | 34.5 | **1 690.50** |
| **Type K-SS stainless steel Tongue-operated switches** | | | | | | | | |
| • Enclosure protection: IP69K - rugged stainless steel 316 body | | | | | | | | |
| **208007** | 4 | 3 | 1 | SS Tongue-operated switches | 98 | 58 | 37.5 | **3 864.00** |
| **KLM series - Guard locking switch** *(Metal)* | | | | | | | | |
| **Solenoid locking interlock safety switch featuring Guard Holding up to 3000N** *(300Kg) (F1Max)* | | | | | | | | |
| **KLM** guard locking safety switches have rugged die cast housings with a high holding force of 3000N to keep medium/large guard doors closed until hazards are removed. The slim profile is designed to fit on 50 mm frame sections or where space is restricted. The head rotates providing up to 8 actuator entry positions. 2 independent contact blocks individually monitor lock and door status. | | | | | | | | |
| Internal switch selectable for power feed to LED or as a voltage free auxiliary circuit to indicate lock status. | | | | | | | | |
| • Enclosure protection: IP67 - Rugged polyester body with stainless steel head | | | | | | | | |
| • Soleniod supply voltage: 24 VAC/DC or 230 VAC *(available in 110 VAC on request)* | | | | | | | | |
| • Ambient temperature: -25…+50ºC | | | | | | | | |
| • Thermal current (Ith): 10A | | | | | | | | |
| • Rated Ins/withstand voltage: 500 VAC/2500 VAC | | | | | | | | |
| • Manual release: 1 manual release | | | | | | | | |
| **202001-SS** | 8 | 3 | 1 | locking interlock safety switches | 24 VDC | 176 | 46 | 47 | **6 237.00** |
| **202007-SS** | 8 | 3 | 1 | locking interlock safety switches | 230 VAC | 176 | 46 | 47 | **6 352.50** |
| **KL3-SS series - Stainless steel Tongue-operated switches** | | | | | | | | |
| In accordance with EHEDG *(European Hygienic Engineering & Design Group)* guidelines for hygienic design, mirror-polished surface to Ra10 designed to cope with direct food splash and cleaning in tough applications of food processing industries. | | | | | | | | |
| IP69K enclosure protection permits high pressure hosing with detergent at high temperature. | | | | | | | | |
| • Enclosure protection: IP69K – Mirror polished 316 stainless steel | | | | | | | | |
| **205001** | 8 | 3 | 1 | locking interlock safety switches | 24 VDC | 177 | 48 | 47 | **12 495.00** |
| **205007** | 8 | 3 | 1 | locking interlock safety switches | 230 VAC | 177 | 48 | 47 | **12 705.00** |

**Accessories for above Tongue-operated switches**

| | | | | |
|---|---|---|---|---|
| **140123** | – | manual release key *(front and side)* for | KLM and KL3-SS | **434.70** |
| **140107** | standard | standard actuator only | all tongue switches | **197.40** |
| **140108** | flat | flat actuator only | all tongue switches | **197.40** |
| **140110** | flexible | die-cast heavy duty flexible actuator only | all tongue switches | **707.70** |
| **140111** | flexible | stainless steel heavy duty flexible actuator only | all tongue switches | **1 417.50** |



405104


110004


114004


172007

**RFID coded non-contact safety switches** **24VDC** SIL 3 - SILCL 3 - PLe - Cat. 4

RFID non-contact safety sensors provide highly-reliable, tamper-proof personnel protection for monitoring protective doors, gates and guards, they uniquely identify passive RFID transponders ensuring high coding levels and effective protection.

**Master coded:** The actuator is free and not specifically assigned to the sensor
**Unique coding:** Factory programmed and permanently assigned to sensor during set-up

- Output: 2 NC safety outputs and 1 NO auxiliary output
- Connection type: M12 connector - *(Pigtail M12/8-pin - 250 mm), See sensor connectors and cables page*
- High EMC immunity and IP67/IP69K protection ensure excellent reliability in harsh environments.
- Resistant to aggressive media, e.g. cleaning agents used in the food and packaging industry

| type | model | detection distance | circuits | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **RFID safety switches** *supplied as sensor/actuator combination* | | | | | | | | |
| **SPF -** *universal (22 mm fixing centres)* | | | | | | | | |
| **405104** | SPF | 14 mm | 2NC/1NO | RFID coded safety switch | 50 | 25 | 13 | **3 832.50** |
| **LPF -** *European industry standard fitting (78 mm fixing centres)* | | | | | | | | |
| **404104** | LPF | 14 mm | 2NC/1NO | RFID coded safety switch | 88 | 25 | 13 | **3 895.50** |
| **Coded non contact safety switches** **24 VDC** | | | | | | | | |

IDEM coded non contact safety switches, enable conformance to **EN60947-5-3** to be used as directed by I**SO12100, ISO14121** and **EN60204-1**.

They have coded magnetic detection. Providing a wide detection distance and high tolerance to misalignment. Used in combination with most dual channel safety monitoring relays (up to PLe as per **ISO13849-1**).

- Compact and robust high specification polyester housing
- Visual LED switch status indication *(on coded version only)*
- Coded magnetic operation – Tamper resistant.
- Supplied as sensor/actuator combination

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MPC -** *Miniature industry standard (22 mm fixing centres)* | | | | | | | | |
| **114104** | MPC | 14 mm | 2 NC | compact coded safety switches | 36 | 26 | 13 | **2 656.50** |
| **LPC -** *European industry standard fitting (78 mm fixing centres)* | | | | | | | | |
| **110004** | LPC | 14 mm | 2 NC | rectangular coded safety switches | 88 | 25 | 13 | **2 698.50** |
| **Magnetic non-contact switches** *(non coded)* Up to: PLe ISO13849-1 | | | | | | | | |

IDEM's magnetic non-contact safety interlocks are designed to conform to **IEC 60947-5-3** and be used as directed by **ISO12100, ISO14121** and **ISO14119**. They feature magnet and reed technology, providing a high tolerance to misalignment and extreme temperatures.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MPR -** *Miniature industry standard (22 mm fixing centres)* | | | | | | | | |
| **114004** | MPR | 12 mm | 2 NC | compact magnetic switches | 36 | 26 | 13 | **2 373.00** |
| **LPR -** *European industry standard fitting (78 mm fixing centres)* | | | | | | | | |
| **110012** | LPR | 12 mm | 2 NC | rectangular magnetic switches | 88 | 25 | 13 | **3 160.50** |

*Normally closed (NC) circuits are closed when the actuator is present*

**Safety limit switches** *(die-cast metal body)*

| type | model | detection distance | circuits | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **172007** | LSMM | 12 mm | 2NC/1NO | roller plunger limit switch | 73 | 35 | 16 | **1 165.50** |

## Non contact sensors - Position monitoring





Above ZAR prices do not include VAT. E&OE


PLNU1AT25W


PLN131311


P2L131312


P33032


P33033


P33036


P33034


P33035


KB N1 L11


KX N2


RS11310

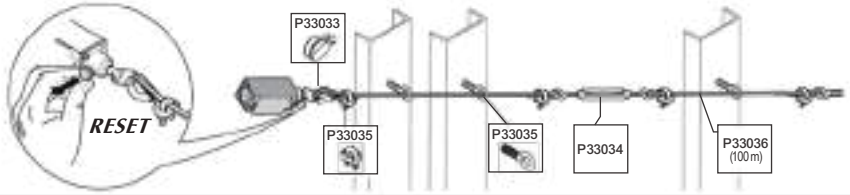

RS131310

**Rope-operated pull lever limit switches** *(IP65)*

- Heavy-duty metal body
- Supplied with cable gland (PG11)

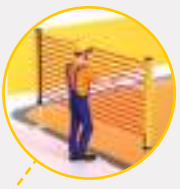
| type | description | | operating force (N) | contacts | price |
|---|---|---|---|---|---|
| **PLNU series - Heavy-duty non-latching rope-operated limit switches** | | | | | |
| • Direct *(positive)* opening action - safety function according to IEC/EN 60947-5-1 | | | | | |
| • Thermal current: | Ith: 10A Ui: 400 VAC | | | | |
| • Dimensions: | *(H) 89 x (W) 84 x (D) 40.5 mm* | | | | |
| **PLNU1AT25W** | rope operated limit switch | *(non-latching)* | 25N | 1NO + 1NC | **1 449.00** |
| **P2LU series - Heavy-duty latching rope-operated limit switches** | | | | | |
| **Latching *(hand reset)* limit switches EN 418 compliant** | | | | | |
| • Latching with push button "Reset" facility on switch | | | | | |
| • Thermal current: | Ith: 6A Ui: 400 VAC | | | | |
| **P2LU series** | *(H) 175 x (W) 85 x (D) 47 mm* | | | | |
| **P2LU1SAT75AG** | rope operated limit switch | *(latching/hand reset)* | 7.5 kg | 1NO + 1NC | **3 076.50** |
| **P2LU1SAT15AG** | rope operated limit switch | *(latching/hand reset)* | 15 kg | 1NO + 1NC | **3 076.50** |
| **Heavy duty rope-operated limit switches with pre-tensioning facility** | | | | EN418 compliant | |
| • 2 NC contacts *(when pre-tensioned)* 1 opens if rope breaks the other opens when rope is pulled | | | | | |
| • Large field of overlap for easier regulation of pre-tensioning | | | | | |
| • Latching with push button "Reset" facility on switch | | | | | |
| • Thermal current: | Ith: 6A Ui: 400 VAC | | | with pre tensioned rope | |
| **PLN series - 60N** | *(H) 82 x (W) 104 x (D) 40.5 mm* | | | | |
| **PLN131311** | rope operated limit switch | *(latching/hand reset)* | 60N - 6kg | 1NO + 1NC | **1 827.00** |
| **P2L series - 120N** | *(H) 161 x (W) 100 x (D) 48.5 mm* | | | | |
| **P2L131312** | rope operated limit switch | *(latching/hand reset)* | 120N - 12kg | 1NO + 1NO | **3 360.00** |
| **Accessories for rope-operated switches** | | | | | |
| **P33032** | adjustable rope terminal clamp Ø 5 mm | | | | **32.03** |
| **P33033** | rope eye of Ø 5 mm *(cable end thimble)* | | | | **10.50** |
| **P33034** | turn buckle M6 x 60 for rope tensioning | | | | **144.90** |
| **P33035** | threaded eye bolt M8 guide for rope | | | | **49.35** |
| **P33036** | steel rope 0.5 mm PVC sheathed *(red insulated)* | | | *(100 meter)* | **6 363.00** |
| **Safety limit switches** *(slow break)* | | | | | |
| Quickly and easily detect the position of moving parts and safely install machinery. | | | | | |
| **KB Q1 L11** | slotted lever actuator | | safety limit switch | 1 NO + 1 NC | **773.85** |
| **KB N1 L11** | key operated *(straight key)* | | safety limit switch | 1 NO + 1 NC | **782.25** |
| **KB N2 L11** | key operated *(angled key)* | | safety limit switch | 1 NO + 1 NC | **782.25** |
| **Spare keys** *for safety limit switches* | | | | | |
| **KX N1** | straight key | | for safety limit switches | – | **118.65** |
| **KX N2** | angled key | | for safety limit switches | – | **121.80** |
| **KX N3** | straight "T" key | | for safety limit switches | – | **90.30** |
| **KX N4** | angled "T" key | | for safety limit switches | – | **90.30** |
| **RS1 series - Rope operated limit switches** (H) 104 x (W) 30.5 x (D) 35 mm | | | | **IP65** | |
| • Double-insulated housing glass fibre-reinforced self extinguishing | | | | | |
| • Self-cleaning silver-alloy contacts, Snap action contacts | | | | | |
| • Thermal current: | Ith:10A Ui: 250 VAC | | | | |
| **Non-latching rope operated limit switches** *(snap action)* | | | | | |
| **RS11310** | rope operated limit switch | *(non latching)* | 25N | 1NO + 1NC | **1 165.50** |
| **Latching** *(hand reset)* **limit switches EN 418 compliant** | | | | | |
| **RS131310** | rope operated limit switch | *(latching/hand reset)* | 25N | 1NO + 1NC | **1 291.50** |

**RS1 series -** Rope operated limit switch



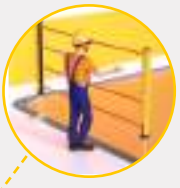
SAFETY LEVEL TYPE 4 SIL 3 - SILCL 3 PL e - Cat. 4

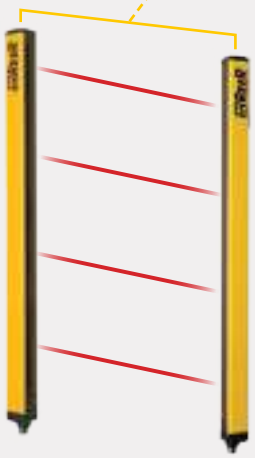
SAFETY LEVEL TYPE 2 SIL 1 - SILCL 1 PL c - Cat. 2





Finger and hand protection EOS...





Body protection and access control EOS...

## EOS series - Safety light curtains

**EOS series** is a compact safety light curtain range with competitive performance and innovative features. Includes models with integrated safety functions such as self-monitoring static outputs, control of external contactors (EDM) and selectable automatic or manual restart. 2 safety PNP static outputs. Easy connection and installation thanks to the M12 connectors and the use of unshielded cables up to 100 meters.

- Power supply: 24 VDC ± 20%
- Dimensions: *(W) 28 x (D) 30 mm*
- Restart: Selectable manual/automatic Start/Restart
- Status display: LEDs for light curtain's status and diagnostic
- Integrated function: Integrated External Device Monitoring (EDM) function
- Mounting: Via back slot with provided standard mounting brackets
- Connection: Emitter: M12 5-pin - Receiver: M12 8-pin *(see pages **K-23...24**)*
- OSSD safety outputs: 2 PNP - 400 mA at 24 VDC with short-circuit, overload, polarity reversal protection

Scan to watch video

| type | resolution | protected height | No. beams | description | overall height | connection type | price |
|---|---|---|---|---|---|---|---|
| **For finger and hand detection -** *Safety light curtains* | | | | | | **IP65/67** | |
| **EOS2 X - Safety light curtain** with built-in control functions - Type 2 | | | | | | | |
| • Detection: Hand detection *(30 mm resolution)* • Maximum range: Selectable 4/12 meter<br>• Safety Level: Type 2, SIL 1/SILCL 1, PL c, Cat. 2 | | | | | | | |
| **1320211** | 30 mm | 310 mm | 16 | safety light curtain | 363 mm | M12 plug | **13 230.00** |
| **1320212** | 30 mm | 460 mm | 23 | safety light curtain | 513 mm | M12 plug | **15 540.00** |
| **1320213** | 30 mm | 610 mm | 31 | safety light curtain | 663 mm | M12 plug | **17 850.00** |
| **1320214** | 30 mm | 760 mm | 38 | safety light curtain | 813 mm | M12 plug | **20 580.00** |
| **1320215** | 30 mm | 910 mm | 46 | safety light curtain | 963 mm | M12 plug | **23 205.00** |
| **1320217** | 30 mm | 1210 mm | 61 | safety light curtain | 1263 mm | M12 plug | **28 350.00** |
| **1320219** | 30 mm | 1510 mm | 76 | safety light curtain | 1563 mm | M12 plug | **33 915.00** |
| **EOS4 X - Safety light curtain** with built-in control functions - Type 4 | | | | | | | |
| • Detection: Finger detection *(14 mm resolution)* • Maximum range: Selectable 3/6 meter<br>• Safety Level: Type 4, SIL 3/SILCL 3, PL e, Cat. 4 | | | | | | | |
| **1310010** | 14 mm | 160 mm | 15 | safety light curtain | 213 mm | M12 plug | **18 900.00** |
| **1310011** | 14 mm | 310 mm | 30 | safety light curtain | 363 mm | M12 plug | **24 570.00** |
| **1310012** | 14 mm | 460 mm | 45 | safety light curtain | 513 mm | M12 plug | **30 135.00** |
| **1310013** | 14 mm | 610 mm | 60 | safety light curtain | 663 mm | M12 plug | **35 595.00** |
| **1310014** | 14 mm | 760 mm | 75 | safety light curtain | 813 mm | M12 plug | **41 265.00** |
| **1310015** | 14 mm | 910 mm | 90 | safety light curtain | 963 mm | M12 plug | **46 830.00** |
| **1310016** | 14 mm | 1060 mm | 105 | safety light curtain | 1113 mm | M12 plug | **52 080.00** |
| **1310017** | 14 mm | 1210 mm | 120 | safety light curtain | 1263 mm | M12 plug | **57 960.00** |
| • Detection: Hand detection (*30 mm resolution)* • Maximum range: Selectable 4/12 meter<br>• Safety Level: Type 4, SIL 3/SILCL 3, PL e, Cat. 4 | | | | | | | |
| **1310211** | 30 mm | 310 mm | 16 | safety light curtain | 363 mm | M12 plug | **15 750.00** |
| **1310212** | 30 mm | 460 mm | 23 | safety light curtain | 513 mm | M12 plug | **18 375.00** |
| **1310213** | 30 mm | 610 mm | 31 | safety light curtain | 663 mm | M12 plug | **21 000.00** |
| **1310214** | 30 mm | 760 mm | 38 | safety light curtain | 813 mm | M12 plug | **24 045.00** |
| **1310215** | 30 mm | 910 mm | 46 | safety light curtain | 963 mm | M12 plug | **27 195.00** |
| **1310217** | 30 mm | 1210 mm | 61 | safety light curtain | 1263 mm | M12 plu g | **33 285.00** |
| **1310219** | 30 mm | 1510 mm | 76 | safety light curtain | 1563 mm | M12 plug | **39 375.00** |
| ***Note:** Heights (from 160 to 2200 mm) and extended range up to 20 meters available on request.* | | | | | | | |
| **For access control / body protection -** *Safety light curtains* | | | | | | **IP65/67** | |
| **EOS2 X - Safety light curtain** with built-in control functions - *Type 2 - Max range: 12 meter* | | | | | | | |
| **1320610** | – | 510 mm | 2 | safety light curtain | 653 mm | M12 plug | **12 390.00** |
| **1320612** | – | 910 mm | 4 | safety light curtain | 1053 mm | M12 plug | **15 750.00** |
| **EOS4 X - Safety light curtain** with built-in control functions - Type 4 - Max range: 12 meter | | | | | | | |
| **1310610** | – | 510 mm | 2 | safety light curtain | 653 mm | M12 plug | **13 650.00** |
| **1310612** | – | 910 mm | 4 | safety light curtain | 1053 mm | M12 plug | **17 955.00** |
| **EOS4 XH - Safety light curtain** with built-in control functions - Type 4 - Max range: 20 meter | | | | | | | |
| **1310660** | – | 510 mm | 2 | safety light curtain | 653 mm | M12 plug | **16 065.00** |
| **1310662** | – | 910 mm | 4 | safety light curtain | 1053 mm | M12 plug | **19 950.00** |
| **Mounting accessories for safety light curtains** *(std L-shaped brackets included with light curtains)* | | | | | | | |
| **1310980** | SFB E180 | brackets | | set of (4) x 180° swivel brackets for | | EOS2/4 | **1 333.50** |
| **1310969** | SFB FAST | brackets | | set of (4) x FAST coupling brackets for | | EOS2/4 | **2 509.50** |
| **1310973** | SAV 8E | dampers | | set of (8) vibration dampers for | | EOS2/4 | **861.00** |
| **1310976** | SFB 4E | brackets | | set of (4) x adjustable brackets for | | EOS2/4 | **500.85** |
| **1310997** | FE 4 | brackets | | set of (4) flat brackets for | | EOS2/4 | **917.70** |



Above ZAR prices do not include VAT. E&OE

SAFETY LEVEL
TYPE 4
SIL 3 - SILCL 3
PL e - Cat. 4



Safegate with MA Arms

Safegate with MZ Muting Brackets


2 x Crossed beams


2 x Parallel beams

**Safegate - Safety light curtains** *(with integrated muting functionality)*

Safety light curtains with integrated Muting function for human material differentiation applications. Safegate guarantees the integration of the muting sensors directly to the safety light curtain.

Programmable models (SMPO) functional parameters configuration can be managed via Safegate Configuration Software (SCS).

**Hardware configuration:** No programming necessary, allows parameterisation and muting logic configuration.

**Software configuration:** Allows configuration of functional parameters, muting *and additional functions (e.g. Filters, delays, partial muting etc).*

**3 Pre-Configured Muting Logic:** Exit-Only (*Parallel or Crossed Beams)*, Entry-Exit *(Parallel Beams),* Entry-Exit *(Crossed Beams).*

**Muting sensors:** MA Muting Arms, MZ Muting Brackets, any dark-on M12 5-pole photocell

**General features:**

- Power supply: 24 VDC ± 20%
- Dimensions: *(W) 50 x (D) 55 mm*
- Restart: Selectable *(manual/automatic)* Start/Restart
- Status display: LEDs for light curtain status and diagnostics
- Integrated function: External Device Monitoring (EDM) function
- Muting: Integrated muting function
- Mounting: Via back slot with provided standard mounting brackets
- Connection: Emitter: M12 5-pin - Receiver: M12 12-pin *(see pages **K-23...24**)*
- OSSD safety outputs: 2 PNP - 400 mA at 24 VDC with short-circuit, overload, polarity reversal protection

Scan to watch video

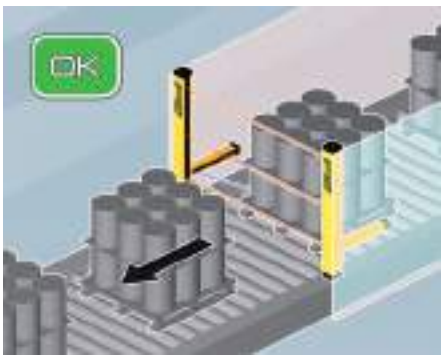
| type | protected height | No. beams | description | overall height | connection type | price |
|---|---|---|---|---|---|---|
| **For access control -** Safety light curtain with integrated muting function | | | | | **IP65/67** | |
| **SAFEGATE SMPO -** Integrated status lamp and programmable functions – Type 4 | | | | | | |
| • Maximum range: | | | 12 meter | | | |
| **1390680** | 510 mm | 2 | safety light curtain | 710 mm | M12 plug | **27 300.00** |
| **1390682** | 910 mm | 4 | safety light curtain | 1110 mm | M12 plug | **33 075.00** |
| **Hand detection** 30 mm resolution | | | | | | |
| **1390283** | 610 mm | 31 | safety light curtain | 720 mm | M12 plug | **35 595.00** |
| **1390285** | 910 mm | 46 | safety light curtain | 1020 mm | M12 plug | **40 845.00** |
| **1390287** | 1210 mm | 61 | safety light curtain | 1320 mm | M12 plug | **46 095.00** |
| **1390905** | – | – | USB to M12 5 pin cable | | *(2 meter)* | **1 318.80** |

| type | muting logic | No. beams | description | maximum range | connection type | price |
|---|---|---|---|---|---|---|
| **MA muting arms -** with integrated photocells | | | | | | |
| **1390800** | exit - only | 2 | crossed beams photocells | 2.5 m | M12 plug | **8 830.50** |
| **1390802** | entry - exit | 2 | crossed beams photocells | 2.5 m | M12 plug | **13 335.00** |
| **1390804** | exit - only | 2 | parallel beams photocells | 3.5 m | M12 plug | **9 040.50** |
| **1390805** | entry - exit | 4 | parallel beams photocells | 3.5 m | M12 plug | **16 695.00** |
| **MZ muting brackets -** with integrated M5 5-beam photocells | | | | | | |
| **1390808** | exit - only | 2 | crossed beams photocells | 3.5 m | M12 plug | **10 321.50** |
| **1390809** | entry - exit | 2 | crossed beams photocells | 3.5 m | M12 plug | **13 965.00** |
| **1390810** | entry - exit | 4 | parallel beams photocells | 3.5 m | M12 plug | **20 265.00** |

## **Human material** differentiation

• Restriction of unauthorised access into dangerous zones







**FREE DESIGNER SOFTWARE** *included with M1\M1S units*

**Mosaic - A unique safety controller: Modular, Expandable, Configurable**

Mosaic is a modular configurable safety controller capable of managing all safety functions of machinery or plants. Made up of a Master unit which can operate as a stand-alone device or control up to 14 expansion units in a system.

Capable of monitoring several safety sensors and signals such as: light curtains - photocells - laser scanners - emergency stops - electromechanical switches - safety door switches - magnetic switches - safety mats and edges - two-hand controls - hand grip switches - encoders and proximities for safety speed control - load cells - pressure switches - temperature, flow and level measurements *(regardless of brand)*.

- Power supply: 24V DC ± 20%
- Safety level: SIL 3, PL e, SILCL 3, Cat. 4
- Connections: Removable *(screw terminal)* blocks
- Mounting: DIN rail mounting according to EN 50022-35 standard
- Dimensions: *(H) 99 x (W) 22.5 x (D) 114 mm*

Scan to watch video

**Advantages**

– Tamper-proof system configuration
– Reduced control panel dimension, design and construction time
– Logic configured via graphic interface, eliminating laborious wiring as with traditional solutions
– **Simulation function** allows to validate system functionality without connecting to a machine

| type | model | digital inputs | Start / Restart inputs | OSSD safety outputs | status outputs | description | price |
|---|---|---|---|---|---|---|---|
| **Mosaic master units** | | | | | | | |
| Master units can operate as stand-alone device or expanded with additional I/O modules. | | | | | | | |
| **M1 - Standard master unit** | | | | | | | |
| - 2 pairs SIL 3 OSSD safety outputs *(PNP 400 mA)* | | | | | | | |
| - 2 inputs for Start/Restart interlock and external device monitoring *(EDM)* | | | | | | | |
| - 2 programmable digital status outputs *(PNP 100 mA)* | | | | | | | |
| - 4 test outputs *(for sensor monitoring)* | | | | | | | |
| **1100000** | M1 | 8 | 2 | 2 pairs | 2 | standard master controller | **9 502.50** |
| **1100005** | MZERO | 16 | 4 | 4 pairs | 4 | standalone safety controller | **13 965.00** |
| **M1S/M1S COM - Enhanced master unit** | | | | | | | |
| - 4 single SIL 3 OSSD or *(2 pairs)* safety outputs *(PNP 400 mA)* | | | | | | | |
| - 4 inputs for Start/Restart interlock and external device monitoring *(EDM)* | | | | | | | |
| - 4 programmable digital status outputs *(PNP 100 mA)* | | | | | | | |
| - 4 test outputs *(for sensor monitoring)* | | | | | | | |
| - Remote monitoring and built-in Ethernet IP, Modbus TCP, EtherCAT and Profinet *(M1S COM only)* | | | | | | | |
| **1100003** | M1S | 8 | 4 | 4 or *(2 pairs)* | 4 | enhanced master controller | **11 970.00** |
| **1100006** | M1S COM | 8 | 4 | 4 or (2 pairs) | 4 | master controller builtin comms | **17 955.00** |
| **Accessories for M1/M1S/COM master units** | | | | | | | |
| **1100060** | MCM | memory card to store or duplicate master unit configuration as a backup | | | | | **1 025.85** |
| **1100061** | MSC | rear bus connector required to connect to any expansion module | | | | | **395.85** |
| **1100039** | USB | USB configuration cable for M1S/M1S COM (Type C, length 1.8 m) | | | | | **677.25** |
| **1100062** | USB | USB configuration cable for M1/MZERO (A–mini B, length 1.8 m) | | | | | **467.25** |
| **Mosaic - Expansion modules** | | | | | | | |
| **Input/output expansion modules** | | *provides additional digital inputs and outputs to the master unit* | | | | | |
| **1100010** | MI8O2 | 2x pairs SIL 3 OSSD safety outputs, 8x digital inputs, 2x status outputs | | | | | **7 843.50** |
| **1100011*** | MI8O4 | 4x single SIL 3 OSSD safety outputs, 8x digital inputs, 4x status outputs | | | | | **9 030.00** |
| **1100021** | MI16 | 16x digital inputs and 4x test outputs *(for sensor monitoring)* | | | | | **7 528.50** |
| **1100025*** | MA4 | 4x 4-20mA (or 0-10V) analogue inputs *(for analogue sensors)* | | | | | **20 685.00** |
| * *Only compatible with M1S and M1SCOM enhanced Master unit.* | | | | | | | |
| **1100031** | MO4 | 4x pairs SIL 3 OSSD safety outputs, 4x status output | | | | | **8 830.50** |
| **1100032** | MO4LHC | 4x single high current SIL 3 OSSD safety outputs (2A), 8x status output | | | | | **9 502.50** |
| **Status outputs** | | *provides additional non-safety outputs to the master unit* | | | | | |
| **1100092** | MOS16 | 16x programmable digital *(non-safety)* signal outputs | | | | | **6 657.00** |
| **Safety relays** | | *provides safety relay outputs with guided contacts* | | | | | |
| **1100041** | MR4 | 4x safety relay outputs with guided contacts *(6A 250 VAC)* | | | | | **5 407.50** |
| **1100043** | MOR4S8 | 4x configurable safety relay outputs with guided contacts | | | | | **9 502.50** |
| **Communication** | | *for connection to the most common industrial Field-bus systems* | | | | | |
| **1100050** | MBP | Profibus DP | module for diagnostics and data communication | | | | **10 605.00** |
| **1100051** | MBD | DeviceNET | module for diagnostics and data communication | | | | **13 335.00** |
| **1100052** | MBC | CANopen | module for diagnostics and data communication | | | | **9 817.50** |
| **1100054** | MBEI | EtherNET IP | module for diagnostics and data communication | | | | **7 780.50** |
| **1100082** | MBMR | Modbus RTU | module for diagnostics and data communication | | | | **12 285.00** |
| **1100133** | MBE COM | Multi-protocol Ethernet IP, Modbus TCP, EtherCAT and Profinet | | | | | **6 163.50** |



1100000



1100005



New

1100006



New

1100043



1100133



Above ZAR prices do not include VAT. E&OE



## Safety interfaces and relays

Allows four different operating modes offering the possibility to connect and control different types of safety devices including: Safety Light Curtains, Solid-State-Output Devices *(i.e. RFID safety switch),* Dual-Channel Emergency Stops, Two-Hand Controls and Type 2 Safety Photocells

- Power supply: 24 VDC ± 20%
- Electrical connection: On terminal block
- Dimensions: Relays - *(H) 101 x (W) 35 x (D) 120 mm*
  Interfaces - *(H) 99 x (W) 22.5 (35 mm - ADSRM) x (D) 114 mm*

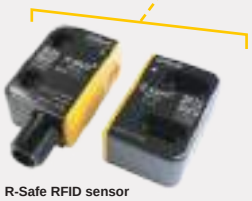


Multifunction safety relay
**1330941**

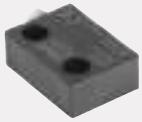


**1330904**
**1330801**





**R-Safe RFID sensor**
Serial connection - Up to 16 sensors with individual status output



**Magnus MG S**
**1291001**



**Magnus MG B**
**1291011**

| type | model | no. of inputs | safety inputs | safety outputs | status outputs | description | price |
|---|---|---|---|---|---|---|---|
| **Multifunction safety Interface** | | | DIN rail mounting | | | PL e - Cat. 4 | |
| **1330941** | SR SELECT | 2 | 2 | 2NO | 1 | multifunction | **4 641.00** |
| **Safety interface for emergency stop buttons and safety switches** | | | | | | PL e - Cat. 4 | |
| **1330913** | ADSRE4 | 1 | 2 of 1 | 3NO+1NC | – | auto / manual start restart | **4 515.00** |
| **1330803** | SR E4 | 1 | 2 | 2NO | – | auto/manual start restart | **3 738.00** |
| **Safety interface for safety light curtains** | | | | | | Type 4 - SIL 3 - SILCL 3 - PL e - Cat. 4 | |
| **1330801** | SR ZERO | – | 2 | 2NO+1NC | 1 | relay module for EOS X | **2 583.00** |
| **1330802** | SR ZERO A | – | 2 | 2NO | 1 | relay module for EOS X | **2 068.50** |
| **1330900** | SR ONE | – | 2 | 2NO | 1 | relay module for EOS X | **3 675.00** |
| **1330904** | SR ONE M | 6 | 4 | 2NO | 2 | muting safety light curtain | **5 019.00** |
| **Safety speed monitoring interface** | *(H) 108 x (W) 22.5 x (D) 114.5 mm* | | | | | SIL 3 - SILCL 3 - PL e - Cat. 4 | |
| **1100078** | SVMRO | 2 | 2 | 2NO | 2 | over/zerospeed detection | **11 550.00** |
| **1100088** | SVMROU | 2 | 2 | 2NO | 2 | underspeed detection | **11 550.00** |
| **Safety interface for two-hand control** | | | | | | PL e - Cat. 4 Type III C (EN574) | |
| **1330805** | SR T | 1 | 2 | 2NO | – | two hand contol | **4 000.50** |
| **RFID safety switches** | | | **24 VDC** | | | SIL 3 - SILCL 3 - PL e - Cat. 4 | |

**R-Safe RFID** non-contact safety sensors ensure reliable, tamper-proof protection by monitoring protective doors, gates, and guards, uniquely identifying passive RFID transponders for high coding levels and effective anti-manipulation. Offers easy installation and integration into safety systems up to PL e/SIL 3, with sensors capable of being individually coded in two ways.

Scan to watch video

**Generic coding:** The actuator is free and not specifically assigned to the sensor *(one actuator can work with multiple sensors)*
**Teach-in coding:** Programmed via teach-in and permanently assigned to sensor during set-up

- Indication: Super bright LED status indicators for immediate diagnostics
- Output: 2 safety inputs and outputs and 1 diagnostic output
- Connection type: M12 Connector, M12 Pigtail, cable
- Mounting: Screw mounting **S** - inter-axis 22 mm
- Can be installed individually or in series with up to 16 units *(accessories required)*
- IP67 and IP69K protection *(cable versions only)* ensure excellent reliability in harsh environments

**BASIC:** Automatic restart / **PLUS:** Selectable Manual/Automatic restart and serial status output

| type | | switching distance (mm) | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|
| **R-Safe RFID** | | *supplied as sensor/actuator combination* | | | | | |
| **1295016** | BASIC C S G C | 12…25 | Generic coding, M12 connector | 28.5 | 57 | 18 | **2 688.00** |
| **1295006** | PLUS C S G C | 12…25 | Generic coding, M12 connector | 28.5 | 57 | 18 | **2 950.50** |
| **1295013** | BASIC C S G P | 12…25 | Generic coding, M12 pigtail | 28.5 | 57 | 18 | **3 034.50** |
| **1295003** | PLUS C S G P | 12…25 | Generic coding, M12 pigtail | 28.5 | 57 | 18 | **3 339.00** |
| **1295010** | BASIC C S G 5 | 12…25 | Generic coding, 5 m cable | 28.5 | 57 | 18 | **2 940.00** |
| **1295000** | PLUS C S G 5 | 12…25 | Generic coding, 5 m cable | 28.5 | 57 | 18 | **3 213.00** |
| **1295007** | PLUS C S T C | 12…25 | Teach-In coding, M12 connector | 28.5 | 57 | 18 | **3 097.50** |
| **1295004** | PLUS C S T P | 12…25 | Teach-In coding, M12 pigtail | 28.5 | 57 | 18 | **3 507.00** |
| **1295001** | PLUS C S T 5 | 12…25 | Teach-In coding, 5 m cable | 28.5 | 57 | 18 | **3 360.00** |
| **Magnetic safety switches** | | **24 VDC** | *(robust thermoplastic enclosure (PBT)* | | | | |
| **1291000** | MGS20 | 3…10 | MGS compact mag. safety switches | 36 | 13 | 26 | **1 228.50** |
| **1291001** | MGSM | 3…10 | MGS mag. unit for above switches | 36 | 13 | 26 | **407.40** |
| **1291010** | MGB20 | 4…16 | MGB rectangular mag. safety switches | 88 | 25 | 14 | **1 155.00** |
| **1291011** | MGBM | 4…16 | MGB mag. unit for above switches | 88 | 25 | 14 | **331.80** |

- Coded magnetic operation – tamper resistant
- Sensor with M8/4pin connector: 2 x NO contacts



BD-K01



BD-K45



BD-D04



BD-G01



BD-P01




*(Excluding lockout hasps, tags etc...)* BD-B102

## Safety lockout hasps

Safety lockout hasps permit multiple padlocks to be used when isolating one energy source. The lockout hasp is placed through the isolating point and closed.

Each person carrying out maintenance or service attaches their unique individually keyed padlock through the lockout hasp, thereby ensuring complete safety during maintenance operations. The hasp can only be removed once all padlocks have been removed.

| type | jaw size Ø | colour | accepts padlocks shackle Ø | accepts padlocks number | description | price |
|---|---|---|---|---|---|---|
| **Lockout hasp (steel PA coated)** | | | | | | |
| • Scissor action hasp with Ø25 mm or 38 mm jaw size<br>• Accepts padlocks with a shackle diameter up to 9 mm *(up to 6 padlocks can be attached)*<br>• Manufactured from high tensile steel, electroplated to prevent rust<br>• Padlock section nylon PA coated *(red)* for improved grip and visibility | | | | | | |
| **BD-K01** | 25 mm | red | 9 mm | 6 | safety lockout hasp | **54.60** |
| **BD-K02** | 38 mm | red | 9 mm | 6 | safety lockout hasp | **68.25** |
| **Nylon lockout hasp** | | *(Ø3 mm shackle)* | | | | |
| • Made from hard nylon /ABS - highly visible<br>• Recommended for electrical panels MCCBs, motor protection circuit breakers | | | | | | |
| **BD-K45** | *(H)* 48 mm | yellow | 9 mm | 4 | nylon slider hasp | **74.55** |
| **Stainless steel butterfly lockout hasp** | | *(316 Stainless steel)* | | | | |
| • Marine grade 316 stainless steel<br>• Fits most switchgear<br>• Sturdy and durable for use in corrosive environments and mines | | | | | | |
| **BD-K33** | *(H)* 48 mm | red | 5 mm | 7 | heavy duty SS hasp | **192.15** |
| **Circuit breaker lockouts** | | | | | | |
| • Fits most existing types of European and Asian circuit breakers<br>• Recommended for use in combination with a padlock for added safety | | | | | | |
| **BD-D01** | pin-out ≤ 12 mm | red | 7 mm | 1 | std MCB lockout | **24.78** |
| **BD-D04** | pin-out ≤ 20 mm | red | 7 mm | 1 | wide MCB lockout | **24.78** |
| **BD-D11** | toggle ≤ 16 mm | red | 7 mm | 1 | MCCB clamp-on lockouts | **61.95** |
| **BD-D12** | toggle ≤ 41 mm | red | 7 mm | 1 | MCCB clamp-on lockouts | **93.45** |
| **Lockout padlocks** *(supplied with two keys per lock)* | | | | | | |
| Maximum security lockout padlocks made for tough environmental situations<br>• Contain "DANGER" standard labels front and back<br>• Stainless steel shackle | | | | | | |
| **BD-G01** | 38 x 20 mm | red | 6.2 mm | medium | shackle safety padlock | **93.45** |
| **BD-G21** | 76 x 20 mm | red | 6.2 mm | long | shackle safety padlock | **112.35** |
| **BD-G22** | 76 x 20 mm | yellow | 6.2 mm | long | shackle safety padlock | **112.35** |
| **BD-G41** | 150 mm | red | 3.2 mm | SS cable | shackle safety padlock | **127.05** |
| **BD-G42** | 150 mm | yellow | 3.2 mm | SS cable | shackle safety padlock | **127.05** |
| *For other colours replace last digit with: **3**= blue, **4**= green, **5**= black, **6**= white, **7**= orange, **8**= purple* | | | | | | |
| **Lockout tags** *use with padlocks to indicate equipment has been locked and should not be operated* | | | | | | |
| • Visible "Danger / Do not operate" warning, also "Name / department / Date" for self marking<br>• Tag resistant to common industrial chemicals, PET coated with 10 mm buttonhole for padlocks | | | | | | |
| **BD-P01** | 145 x 75 mm | red/wht | 10 mm | 1 | danger lockout tags | **6.83** |
| **Integrated lockout stations** *for storing lockout padlocks, hasps and tags* | | | | | | |
| • Made of engineering plastic PC, durable one-piece design | | | | | | |
| **BD-B101** | 5 hook positions each accommodate 2 padlocks or 4 hasps and several tags | | | | | **834.75** |
| **BD-B102** | 14 hook positions each accommodate 2 padlocks or 4 hasps and several tags | | | | | **1 365.00** |

## Electric slider / Heavy Duty hasp



SM1P006 + BD-K45



HMW630JR + BD-K33



Above ZAR prices do not include VAT. E&OE

## Photoelectric smoke detectors


Q01-4


Q05-4


8011-3


QA31-4



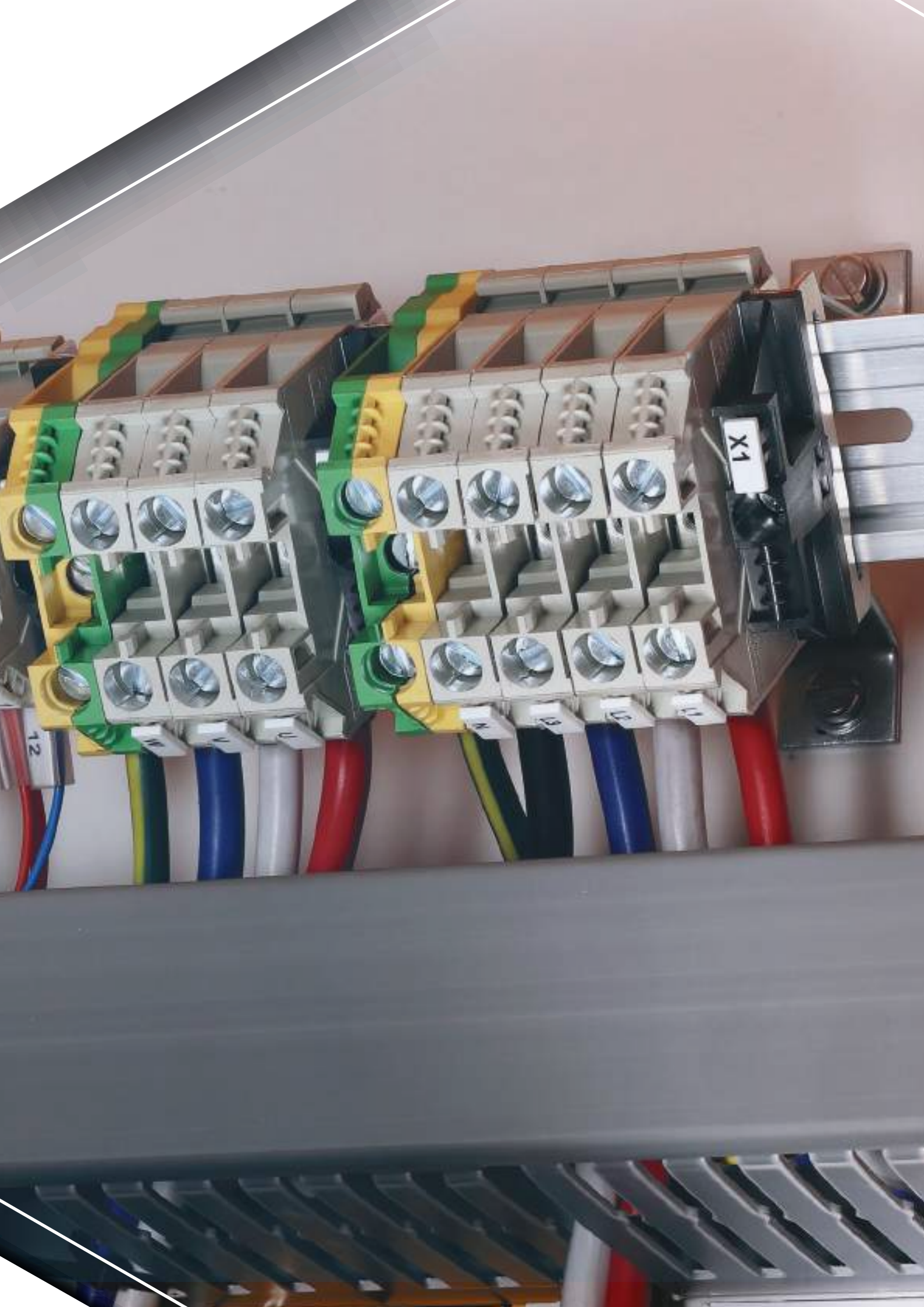
AH-0217

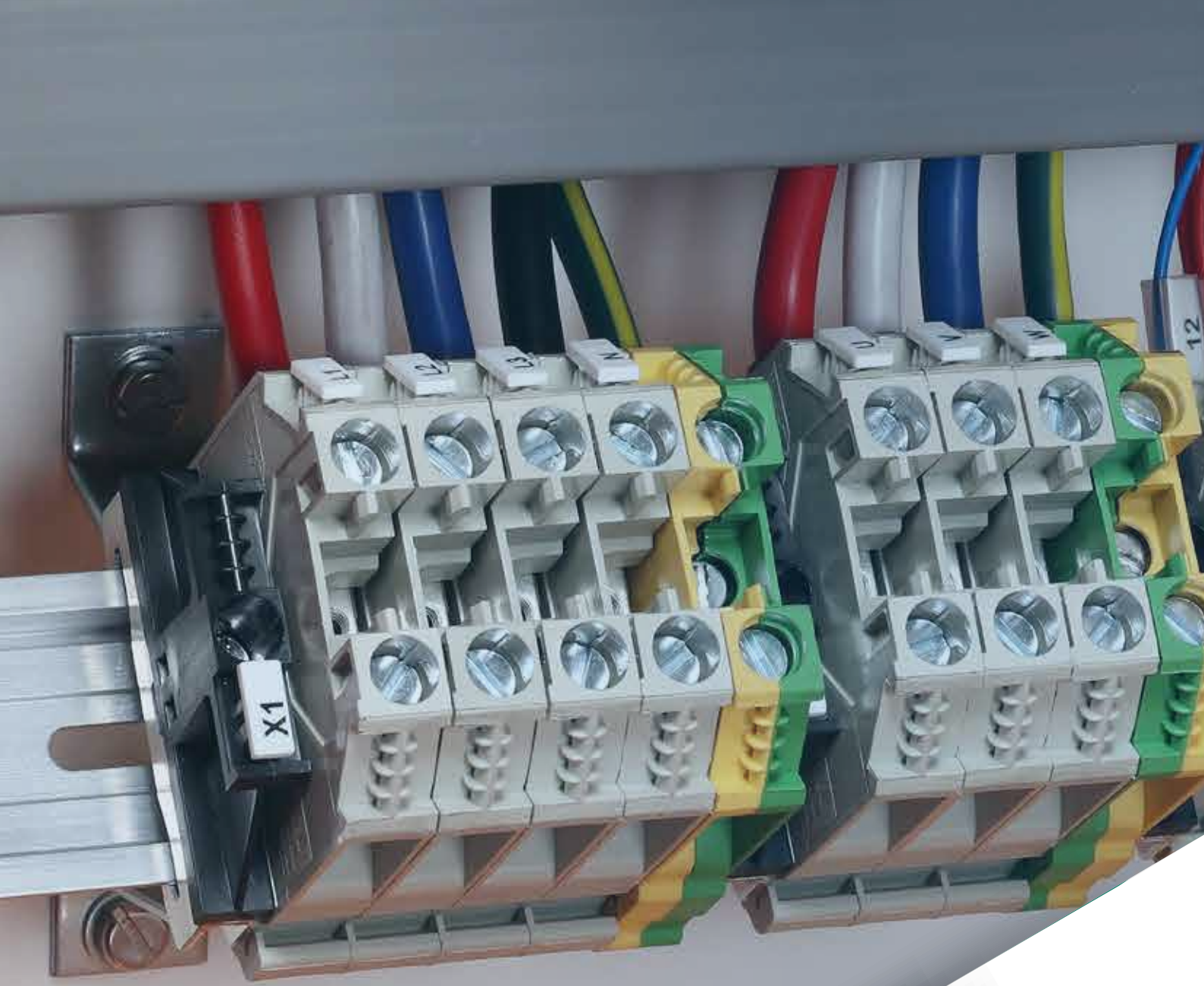

AH-03127-BS


NQ418

| type | supply voltage | standby current | alarm | description | price |
|---|---|---|---|---|---|
| **Q series smoke detectors** | | | | **EN54** compliant | |
| • Dual, bicolour LEDs (green: standby / red: alarm) offer 360º detection<br>• Standard detector *(4 wire)* with relay output 0.8A - 30 VDC / 0.4A - 250 VAC<br>• Made of high endurance, solid and colour-fast fire-proof plastic<br>• Termination base *(with captive screws)* for easy installation<br>• Passed strict EMC tests, illuminating false alarms caused by interference from nearby devices | | | | | |
| **Smoke detector** | | | | (Ø)102 mm x (H) 48 mm | |
| **Q01-4*** | 12 - 30 VDC | 25 - 75µA | 45 mA | photoelectric smoke detector | **687.75** |
| **Combination smoke and heat detector** | | | | (Ø)102 mm x (H) 54 mm | |
| **Q05-4*** | 12 - 30 VDC | 55 - 85µA | 45 mA | combination smoke + heat detector | **808.50** |
| **8011 series smoke detectors** | | | | **EN54** compliant | |
| • Dual LEDs offer 360º detection<br>• Standard detector 2 wire – available in 4 wire *(relay output)* on request<br>• Made of high endurance, solid and colour-fast fire-proof plastic<br>• Termination base *(with captive screws)* for easy installation | | | | | |
| **Smoke detector** | | | | (Ø)102 mm x (H) 47 mm | |
| **8011-3*** | 12 - 30 VDC | 25 - 75µA | 40 mA | photoelectric smoke detector | **526.05** |
| **Accessories for above smoke detectors** | | | | | |
| **06MB** | Flush mount frame | | for sensors | Q01-4, Q05-4, 8011-3 | **121.80** |
| **QA31 series single station smoke detector** | | | | **EN54** compliant | |
| • Advanced photoelectric technology for precise detection<br>• Equipped with 9 VDC battery and 220 VAC power plug<br>• Low-battery warning (flashing LED indicates battery replacement)<br>• Built-in manual test button, buzzer (90dB/meter) and flashing LED<br>• Standard detector *(4 wire)* with relay output 0.8A- 30 VDC / 0.4A - 250 VAC<br>• Independent stand-alone device – can be installed without any wiring | | | | | |
| **Single station smoke detector** | | | | (Ø)105 mm x (H) 40 mm | |
| **QA31-4** | 100 - 220 VAC and/or 9V battery supply | | | photoelectric smoke detector | **727.65** |
| **Manual call point "in case of fire" break-glass devices** | | | | | |
| • Surface mount with plastic film on glass<br>• Test key inserts from bottom<br>• Suitable for majority of conventional fire alarm systems<br>• Operating contact 6A 250 VAC | | | | *(H) 88 x (W) 88 x (D) 52 mm* | |
| **AH-0217*** | emergency "break glass" manual call point enclosure | | | | **331.80** |
| **Audible and visual indicating devices** | | | | | |
| **Audible sounder and beacon** | | | | IP44 | |
| Electronic sounder designed for use with fire alarm, security and industrial signalling systems.<br>• 32 - signal tones selectable by Dip switch<br>• High sound output with low current consumption<br>• Volume control as standard (0 - 20dB adjustable)<br>• Two sets of input and output terminals for easy installation | | | | | |
| **AH-03127-S*** | 24 VDC | 14.5mA | | surface mount (Ø92.5 mm) electronic sounder | **970.20** |
| **AH-03127-BS*** | 24 VDC | 14.5mA | | electronic sounder and illuminated beacon | **1 134.00** |
| **Fire alarm bell** | | | | | |
| • Bell with ABS plastic base for easy mounting and total insulation from electricity<br>• Motor energised, low power consumption, long operating life | | | | | |
| **NQ418*** | 24 VDC | 28mA | | 4" (100 mm) bell 90dB @1meter | **340.20** |
| **NQ618*** | 24 VDC | 28mA | | 6" (152 mm) bell 90dB @1meter | **526.05** |

* *Works in conjunction with fire control systems*

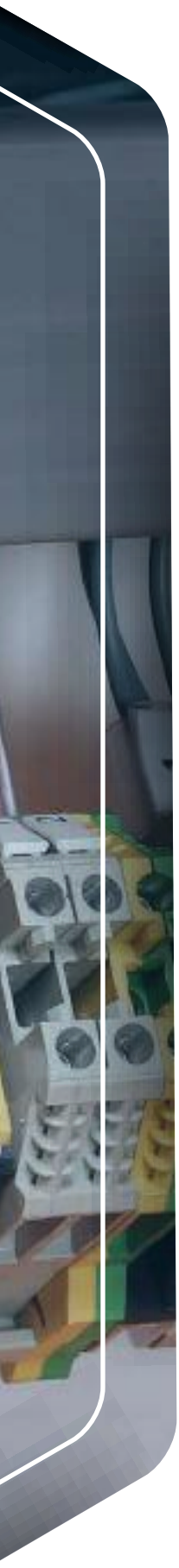

X1
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# L

# Termination & Wiring

Interactive Catalogue



# Termination & Wiring

L




Screw connection rail-mount terminals

L-1/3...6



Push-in rail-mount terminals

L-2/7



Terminal accessories

L-8...9



Slotted cable trunking

L-11



Din mounting rail

L-13



Drag-chain cable carriers

L-14



Cable ties

L-15...16



Ferrules & Terminals

L-17...21



Crimping lugs

L-22...24



Cable glands & Conduit

L-25...27/29...31



Junction boxes

L-28



Heat shrink

L-32



Distribution blocks & Busbar supports

L-33...38/42...46



Flexible copper busbar & Braided links

L-39...41



Thermal transfer printers & Cable identification

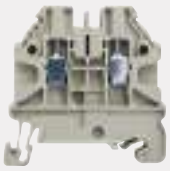
L-10/48...56


Need help navigating the interactive catalogue? Scan the QR code for a short tutorial video.



**WT series - Terminal blocks -** *with screw connection technology*

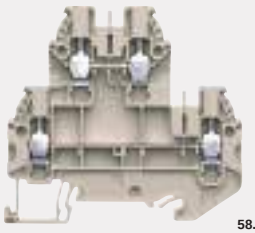
- Universal screw connection system *(one-piece thread for stress free connection and re-connection)*
- Compact dimensions - uniform design - universal marking system
- Double cross connection row accepts pluggable cross connectors *(plug-in bridge bars)*



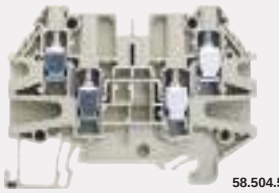
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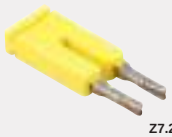
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58.504.7055.0



58.504.5155.0



Z7.284.7027.0

| type | model | colour | wire size mm² | amperage IEC 947-7-1 | term. width | maximum voltage | price |
|---|---|---|---|---|---|---|---|
| **WT through terminals** | | 1000V | | *(universal terminal block)* | | | |
| **58.503.0055.0** | WT2.5 | grey | 0.14...4 | 24A | 5 mm | 1000 V | **12.71** |
| **58.504.0055.0** | WT4 | grey | 0.14...6 | 32A | 6 mm | 1000 V | **13.86** |
| **58.506.0055.0** | WT6 | grey | 0.2...10 | 41A | 8 mm | 1000 V | **28.98** |
| **58.510.0055.0** | WT10 | grey | 0.5...16 | 57A | 10 mm | 1000 V | **33.39** |
| **58.503.0055.6** | WT2.5BL | blue | 0.2...4 | 24A | 5 mm | 1000 V | **25.10** |
| **58.504.0055.6** | WT4BL | blue | 0.5...6 | 32A | 6 mm | 1000 V | **26.99** |
| **58.506.0055.6** | WT6BL | blue | 0.14...10 | 41A | 8 mm | 1000 V | **41.16** |
| **58.510.0055.6** | WT10BL | blue | 0.14...16 | 57A | 10 mm | 1000 V | **48.30** |
| **WT earth terminals** | | *yellow/green screw-less, clip-on earth terminals* | | | | | |
| **58.503.9055.0** | WT2.5PE | yel/grn | 0.14...4 | – | 5 mm | 1000 V | **47.25** |
| **58.504.9055.0** | WT4PE | yel/grn | 0.14...6 | – | 6 mm | 1000 V | **47.25** |
| **58.506.9055.0** | WT6PE | yel/grn | 0.2...10 | – | 8 mm | 1000 V | **66.15** |
| **58.510.9055.0** | WT10PE | yel/grn | 0.5...16 | – | 10 mm | 1000 V | **74.55** |
| **End plates** | | *for above terminals* | | | | | |
| **07.313.2555.0** | APWT2.5-10 | grey | | end plate | for term. | WT2.5/4/6/10 | **8.40** |
| **07.313.2655.0** | TWWT2.5-10 | grey | | partition plate | for term. | WT2.5/4/6/10 | **11.66** |
| **Multi-tier terminal blocks** | | 500V | | | | | |
| **58.504.5055.0** | WT4D1/2 | grey | 0.14...6 | 32A | 6 mm | 500 V | **46.20** |
| **58.504.5155.0** | WT4D2/2 | grey | 0.14...6 | 32A | 6 mm | 500 V | **53.55** |
| **58.504.7055.0** | WT4E | grey | 0.14...6 | 32A | 6 mm | 800 V | **45.15** |
| **07.313.2955.0** | APWT4D1/2 | grey | | end plate | for term. | WT4D1/2 | **11.66** |
| **07.313.3155.0** | APWT4D2/2 | grey | | end plate | for term. | WT4D2/2 | **12.92** |
| **07.313.3355.0** | APWT4E | grey | | end plate for two-tier | for term. | WT4E | **12.92** |
| **07.313.2855.0** | TWWT4E | grey | | partition for two tier | for term. | WT4E | **14.81** |
| **Disconnect terminal block** | | *hinged blade type* | | | | | |
| **58.503.2055.0** | WT2.5TKM | grey | 0.14...4 | 20A | 5 mm | 500 V | **78.75** |
| **58.504.2055.0** | WT4TKM | grey | 0.14...6 | 24A | 6 mm | 500 V | **82.95** |
| **07.313.2955.0** | APWT4D1/2 | grey | | end plate | for term. | WT2.5/4TKM | **11.66** |
| **07.313.2855.0** | TWWT4E | grey | | partition plate | for term. | WT2.5/4TKM | **14.81** |

**Plug-in cross connectors** *(bridging bars)* *for WT and WTP terminal blocks*

WT series terminals feature a two-row, plug-in jumpering channel, permitting variable potential distribution through use of a chain arrangement, providing a vibration-proof connection.

Any number of plug-in jumpers can be connected in succession as necessary.

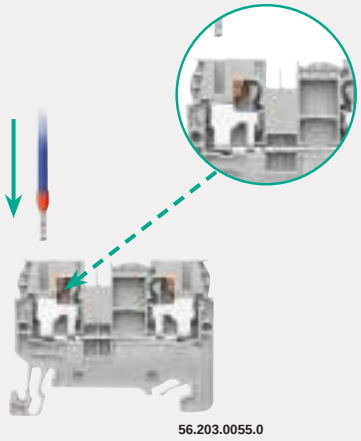
- Robust combination of copper current bar and indestructible steel spring individually fabricated

| | | poles | | | | |
|---|---|---|---|---|---|---|
| **Z7.284.7027.0** | IVBWTP1.5-2 | 2-pole | plug-in bridging bar | for term. | WTP1.5 | **8.00** |
| **Z7.284.7127.0** | IVBWTP1.5-3 | 3-pole | plug-in bridging bar | for term. | WTP1.5 | **14.70** |
| **Z7.284.7227.0** | IVBWTP1.5-4 | 4-pole | plug-in bridging bar | for term. | WTP1.5 | **23.30** |
| **Z7.284.7327.0** | IVBWTP1.5-5 | 5-pole | plug-in bridging bar | for term. | WTP1.5 | **31.20** |
| **Z7.280.6227.0** | IVBWKF2.5-2 | 2-pole | plug-in bridging bar | for term. | WT2.5/P2.5/4 | **9.20** |
| **Z7.280.6327.0** | IVBWKF2.5-3 | 3-pole | plug-in bridging bar | for term. | WT2.5/P2.5/4 | **17.80** |
| **Z7.280.6427.0** | IVBWKF2.5-4 | 4-pole | plug-in bridging bar | for term. | WT2.5/P2.5/4 | **28.35** |
| **Z7.280.6527.0** | IVBWKF2.5-5 | 5-pole | plug-in bridging bar | for term. | WT2.5/P2.5/4 | **37.91** |
| **Z7.280.7027.0** | IVBWKF2.5-10 | 10-pole | plug-in bridging bar | for term. | WT2.5/P2.5/4 | **85.05** |
| **Z7.280.8027.0** | IVBWKF2.5-20 | 20 pole | plug-in bridging bar | for term. | WT2.5/P2.5/4 | **180.60** |
| **Z7.261.1227.0** | IVBWKF4-2 | 2-pole | plug-in bridging bar | for term. | WT4 | **10.29** |
| **Z7.261.1327.0** | IVBWKF4-3 | 3-pole | plug-in bridging bar | for term. | WT4 | **19.95** |
| **Z7.261.1427.0** | IVBWKF4-4 | 4-pole | plug-in bridging bar | for term. | WT4 | **29.61** |
| **Z7.261.1527.0** | IVBWKF4-5 | 5-pole | plug-in bridging bar | for term. | WT4 | **39.90** |
| **Z7.261.2027.0** | IVBWKF4-10 | 10-pole | plug-in bridging bar | for term. | WT4 | **90.30** |
| **Z7.282.5227.0** | IVBWKF6-2 | 2-pole | plug-in bridging bar | for term. | WT6/WTP6/10 | **19.95** |
| **Z7.282.5327.0** | IVBWKF6-3 | 3-pole | plug-in bridging bar | for term. | WT6/WTP6/10 | **30.87** |
| **Z7.282.5427.0** | IVBWKF6-4 | 4-pole | plug-in bridging bar | for term. | WT6/WTP6/10 | **47.25** |
| **Z7.282.5527.0** | IVBWKF6-5 | 5-pole | plug-in bridging bar | for term. | WT6/WTP6/10 | **59.85** |
| **Z7.283.8227.0** | IVBWKF10-2 | 2-pole | plug-in bridging bar | for term. | WT10 | **41.16** |

*See DIN mounting rail*



Above ZAR prices do not include VAT. E&OE



56.203.0055.0

**Fasis WTP series - Terminal blocks -** *with push-in connection technology*

- Terminate wires easily, directly and without tools *(wires simply push-in to terminals)*
- Integrated release lever - no contact with live parts - flat or star screwdriver release button
- Compact dimensions - uniform design - universal marking system
- Double cross connection row on all terminals for pluggable cross connectors *(plug-in bridge bars)*
- Designed for use in machinery and plant engineering, as well as power distribution for buildings
- Connects a control cabinet quickly, reducing installation time and keeps inventory costs to a minimum

| type | model | wire size mm² | amperage IEC 947-7-1 | terminal width | terminal in | terminal out | max. voltage | price |
|---|---|---|---|---|---|---|---|---|
| **Feed-through terminals with push-in connection** | | | | | | | | |
| **56.202.0055.0** | WTP1.5 | 0.14...1.5 | 17.5A | 3.5 mm | 1 | 1 | 500 V | **18.06** |
| **56.203.0055.0** | WTP2.5/4 | 0.2...4 | 30A | 5 mm | 1 | 1 | 800 V | **15.44** |
| **56.203.5055.0** | WTP2.5/4D1/2 | 0.2...4 | 32A | 5 mm | 1 | 2 | 800 V | **24.47** |
| **56.203.5155.0** | WTP2.5/4D2/2 | 0.2...4 | 32A | 5 mm | 2 | 2 | 800 V | **32.13** |
| **56.203.7055.0** | WTP2.5/4E | 0.2...4 | 24A | 5 mm | 2 | 2 | 500 V | **49.35** |
| **56.206.0055.0** | WTP6/10 | 0.2...10 | 57A | 8 mm | 1 | 1 | 1000 V | **41.16** |
| **Feed-through terminals** | *blue push-in terminals* | | | | | | | |
| **56.202.0055.6** | WTP1.5BL | 0.14...1.5 | 17.5A | 3.5 mm | 1 | 1 | 500 V | **18.06** |
| **56.203.0055.6** | WTP2.5/4BL | 0.2...4 | 30A | 5 mm | 1 | 1 | 800 V | **21.21** |
| **56.206.0055.6** | WTP6/10BL | 0.2...10 | 57A | 8 mm | 1 | 1 | 1000 V | **38.54** |



56.203.5055.0

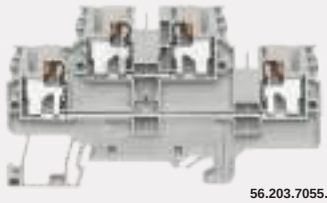
**Earth terminals** *yellow/green*

- screwless, clip-on earth terminals / plug-in bridging bars

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **56.202.9055.0** | WTP1.5PE | 0.14...1.5 | 17.5A | 3.5 mm | 1 | 1 | 500 V | **61.95** |
| **56.203.9055.0** | WTP2.5/4PE | 0.2...4 | 32A | 5 mm | 1 | 1 | 800 V | **48.30** |
| **56.203.9355.0** | WTP2.5/4D1/2PE | 0.2...4 | 32A | 5 mm | 1 | 2 | 800 V | **80.85** |
| **56.206.9055.0** | WTP6/10PE | 0.2...10 | 57A | 8 mm | 1 | 1 | 1000 V | **96.60** |

**End plates/partitions -** *For above WTP terminals*

| | | | |
|---|---|---|---|
| **07.313.4455.0** | APWTP1.5 | terminal insulated end plate for | WTP1.5 | **8.40** |
| **07.312.6755.0** | APFN2.5 | terminal insulated end plate for | WTP2.5/4 | **10.29** |
| **07.312.6955.0** | APFN2.5D1/2 | terminal insulated end plate for | WTP2.5/4D1/2 | **11.66** |
| **07.312.7155.0** | APFN2.5D2/2 | terminal insulated end plate for | WTP2,5/4D2/2 | **12.92** |
| **07.312.7355.0** | APFN2.5E | terminal insulated end plate for | WTP2.5/4 E | **14.18** |
| **07.313.4155.0** | APWTP6/10 | terminal insulated end plate for | WTP6/10 | **13.55** |
| **07.312.6855.0** | TWFN2.5 | terminal insulated partition plate for | WTP2.5/4 | **10.29** |
| **07.312.7055.0** | TWFN2.5D1/2 | terminal insulated partition plate for | WTP2.5/4D1/2 | **11.66** |
| **07.312.7255.0** | TWFN2.5D2/2 | terminal insulated partition plate for | WTP2.5/4D2/2 | **12.92** |
| **07.312.7455.0** | TWFN2.5E | terminal insulated partition plate for | WTP2.5/4E | **14.18** |
| **07.313.4255.0** | TWWTP6/10 | terminal insulated partition plate for | WTP6/10E | **13.55** |



56.203.7055.0

**Accessories for all Wieland terminals**

**End stops for all terminals**

| | | | | |
|---|---|---|---|---|
| **Z5.523.9353.0** | WEF1/35 | "snap-on" | 8 mm | terminal end stop | **17.43** |
| **Z5.523.9453.0** | WEF2/35 | "snap-on" | 5 mm | terminal end stop | **16.91** |
| **Z5.522.8553.0** | 9708/2S35 | "screw-on" | 8 mm | terminal end stop | **12.92** |
| **Z5.523.5753.0** | WE 1/U | "screw-on" | 10 mm | terminal end stop | **52.50** |

**Test terminal**

| | | | | |
|---|---|---|---|---|
| **Z1.299.9753.0** | PSWKC/F | 0.14...4 | plug-in test terminal for | WT/WTP 2.5/4 | **90.30** |
| **07.312.6053.0** | ZP/APPS | – | end plate for above test terminal | PS WKC/F | **43.05** |



56.203.9055.0

**Terminal markers for all Wieland terminals**

- Universal marking system
- Maximum hold to the terminal
- Marking strips ideal for service and maintenance

| | | | | |
|---|---|---|---|---|
| **41490/PS** | 10 x 5 mm | self marking tag for use with Cembre printer | card of 56 pcs | **111.30** |
| **9704A/*B** | numeral marking tags - strip 10 similar markers | *(25 x strips of 10pcs = 250 per pack)* | | **10.92** |
| **9704A/*GB** | alphabetical marking strips 10 similar markers | *(25 x strips of 10pcs = 250 per pack)* | | **10.92** |

* *Replace by:* **1/2/3/4/5/6/7/8/9/0/+/-** (example **9704A/5B**)

❖ **A/B/C/D/E/F/G/H/I/J/K/L/M/N/O/P/Q/R/S/T/U/V/W/X/Y/Z**

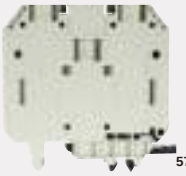
| | | | | |
|---|---|---|---|---|
| **9705A/6** | marker adaptor | *(increases marking area to 6 digits)* | all terminals | **5.88** |

**Bridging bars -** *(plug-in cross connectors, see page **L-1**)*
*See DIN mounting rail*



56.203.9355.0


57.510.0155.0


57.535.0155.0


56.135.1055.0 + 07.431.7053.8


57.504.9055.0


57.910.5055.0


57.904.5355.0


Z5.522.8553.0

**WK series - Terminal blocks** - *with screw connection technology*

- Universal marking system
- Reliable and maintenance-free
- Multi-tier blocks in two- and three-tier designs
- Approvals: SEV / ASEV / RINA / VDE / UL / CSA
- Conformity: IEC60947-7-1 / IEC60685-2-2 / IEC60685-1 / CEI222223-20/21 / VDE0611/ CSA C22.2 / UL1059

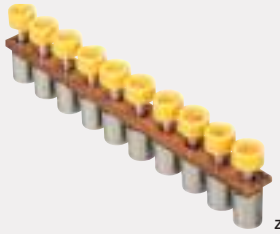
| type | model | wire size mm² | amperage IEC 947-7-1 | terminal width | | maximum voltage | price |
|---|---|---|---|---|---|---|---|
| **Through terminals blocks** | | *universal EN50022 (DIN 35) and EN50035 (G rail)* | | | | | |
| **57.503.0055.0** | WK2.5/U | 0.5...2.5 | 26A | 5 mm | – | 1000 V | **14.81** |
| **57.504.0055.0** | WK4/U | 0.5...4 | 35A | 6 mm | – | 1000 V | **16.07** |
| **57.506.0055.0** | WK6/U | 0.5...6 | 46A | 8 mm | – | 1000 V | **25.73** |
| **57.510.0155.0** | WKN10/U | 2.5...10 | 63A | 10 mm | – | 1000 V | **41.79** |
| **57.516.0155.0** | WKN16/U | 4...16 | 85A | 12 mm | – | 1000 V | **56.70** |
| **57.535.0155.0*** | WKN35/U | 10...35 | 125A | 16 mm | – | 1000 V | **93.45** |
| **57.570.0155.0*** | WKN70/U | 10...70 | 192A | 24 mm | – | 1000 V | **521.85** |
| **Stud terminal blocks** | | *bolt to bolt through terminal* | | | | | |
| **56.135.1055.0** | WRT35/M6 | 2.5…50 | 125A | 27 mm | M6 | 1000 V | **273.00** |
| **56.170.1055.0** | WRT70 | 2.5...95 | 192A | 32 mm | M8 | 1000 V | **379.05** |
| **56.197.1055.0** | WRT120 | 6...150 | 269A | 42 mm | M10 | 1000 V | **465.15** |
| **56.198.1055.0** | WRT185 | 10...240 | 353A | 55 mm | M12 | 1000 V | **673.05** |
| **56.199.1055.0** | WRT300 | 25…240 | 520A | 55 mm | M16 | 1000 V | **803.25** |
| **End plates/partitions -** *for above terminals* | | | | | | | |
| **07.311.0155.0** | AP2.5-4 | terminal end plates | | | for term. | WK2.5/4 | **9.03** |
| **07.311.0255.0** | AP6 | terminal end plates | | | for term. | WK6 | **10.29** |
| **07.311.6655.0** | APN10 | terminal end plates | | | for term. | WK10 | **12.29** |
| **07.311.6755.0** | APN16 | terminal end plates | | | for term. | WK16 | **18.06** |
| **07.431.7053.8** | ADWRT35 | terminal cover *(2 req. per terminal)* | | | for term. | WRT35 | **41.79** |
| **07.431.7153.8** | ADWRT70 | terminal cover *(2 req. per terminal)* | | | for term. | WRT70 | **48.30** |
| **07.431.7253.8** | ADWRT120 | terminal cover *(2 req. per terminal)* | | | for term. | WRT120 | **61.95** |
| **07.431.7353.8** | ADWRT185/300 | terminal cover *(2 req. per terminal)* | | | for term. | WRT185/300 | **85.05** |
| **07.311.1155.0** | TW2.5-4 | terminal end plate/partition | | | for term. | WK2.5/4 | **12.92** |
| **07.311.1255.0** | TW6 | terminal end plate/partition | | | for term. | WK6 | **12.92** |
| **07.311.7655.0** | TWN10 | terminal end plate/partition | | | for term. | WK10 | **14.18** |
| **07.311.7755.0** | TWN16 | terminal end plate/partition | | | for term. | WK16 | **19.95** |
| **Earth terminal blocks** | | *yellow/green screw-on earth terminals* | | | | | |
| **57.504.9055.0*** | WK4SL/U | 0.5...4 | – | 6 mm | – | 1000 V | **69.30** |
| **57.506.9055.0*** | WK6SL/U | 0.5...6 | – | 8 mm | – | 1000 V | **89.25** |
| **57.510.9055.0*** | WKN10SL/U | 2.5...10 | – | 10 mm | – | 1000 V | **127.05** |
| **57.516.9055.0*** | WKN16SL/U | 4...16 | – | 12 mm | – | 1000 V | **151.20** |
| **57.535.9055.0*** | WKN35SL/U | 10...35 | – | 16 mm | – | 1000 V | **275.10** |
| **Multi-tier terminal blocks** | | | | | | | |
| **57.403.7055.0** | WKN2.5E/U | 0.14...2.5 | 24A | 5 mm | 2 tier | 500 V | **76.65** |
| **07.312.1755.0** | APN2.5E | terminal end plate for above | | | for term. | WK2.5E/U | **16.70** |
| **57.503.8855.0*** | WK2.5-3D/U | 0.5...2.5 | 24A | 6 mm | 3 tier | 400 V | **155.40** |
| **57.503.7855.0*** | WK2.5-4KI/U | 0.5...2.5 | 24A | 6 mm | 3 tier *(sensor)* | 250 V | **91.35** |
| **Fuse terminal blocks** | | *accepts 20 x 5 mm fuses (see page **B-45**)* | | | | | |
| • Integrated lever-action fuse block with screw connection for mounting on DIN rai | | | | | | | |
| • The standard block has a storage location for a replacement fuse. | | | | | | | |
| **57.904.5355.0*** | WK4/THSI5/U | 0.5...4 | 6.3A | 8 mm | | 800 V | **93.45** |
| **57.910.5055.0** | WK10/SI/U | 1...10 | 10A | 12 mm | | 500 V | **151.20** |
| **07.311.4155.0** | AP10/SI | terminal end plate for above | | | for term. | WK10/Si/U | **13.55** |
| **End stops for all terminals** | | | | | | | |
| **Z5.523.9353.0** | WEF1/35 | screwless | rail mount | 8 mm | "snap-on" term. end stop | | **17.43** |
| **Z5.523.9453.0** | WEF2/35 | screwless | rail mount | 5 mm | "snap-on" term. end stop | | **16.91** |
| **Z5.522.8553.0** | 9708/2S35 | screw mnt | rail mount | 8 mm | "screw-on" term. end stop | | **12.92** |
| **Z5.523.5753.0** | WE1/U | screw mnt | rail mount | 10 mm | "screw-on" term. end stop | | **52.50** |

* *Fully insulated terminal (no end plate required)*

*See DIN mounting rail*



Above ZAR prices do not include VAT. E&OE



Z7.28...

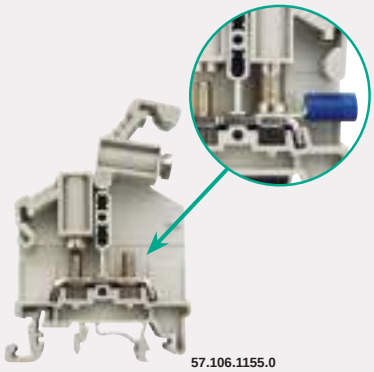


07.201.3327.6

## Bridging bars *screw-in type for WK series terminals*

| type | model | wire size mm² | no. ways | description | for terminal | price |
|---|---|---|---|---|---|---|
| **Z7.280.0027.0** | VBWK2.5M | 2.5 | 80-way | bridging bar for terminal | WK2.5/U | **615.30** |
| **Z7.281.0027.0** | VBWK4M | 4 | 70-way | bridging bar for terminal | WK4/U | **547.05** |
| **Z7.282.0027.0** | VBWK6M | 6 | 40-way | bridging bar for terminal | WK6/U | **506.10** |
| **Z7.283.6027.0** | VBWKN10M | 10 | 40-way | bridging bar for terminal | WKN10/U | **675.15** |
| **Z7.284.2027.0** | VBWKN16M | 16 | 30-way | bridging bar for terminal | WKN16/U | **1 123.50** |
| **Z7.285.2027.0** | VBWKN35M | 35 | 20-way | bridging bar for terminal | WKN35/U | **985.95** |
| **Jumper bars** | *screw-in type for WK series terminals* | | | | | |
| **07.201.1227.6** | VBWRT35-2 | 35 | 2-way | jumper bar for terminal | WRT35 | **61.95** |
| **07.201.1327.6** | VBWRT35-3 | 35 | 3-way | jumper bar for terminal | WRT35 | **82.95** |
| **07.201.3227.6** | VBWRT70-2 | 70 | 2-way | jumper bar for terminal | WRT70 | **88.20** |
| **07.201.3327.6** | VBWRT70-3 | 70 | 3-way | jumper bar for terminal | WRT70 | **113.40** |
| **07.201.5227.6** | VBWRT120-2 | 120 | 2-way | jumper bar for terminal | WRT120 | **179.55** |
| **07.201.5327.6** | VBWRT120-3 | 120 | 3-way | jumper bar for terminal | WRT120 | **223.65** |
| **07.201.7227.6** | VBWRT185-2 | 185 | 2-way | jumper bar for terminal | WRT185 | **256.20** |
| **07.201.7327.6** | VBWRT185-3 | 185 | 3-way | jumper bar for terminal | WRT185 | **358.05** |
| **07.201.9227.6** | VBWRT300-2 | 300 | 2-way | jumper bar for terminal | WRT300 | **295.05** |
| **07.201.9327.6** | VBWRT300-3 | 300 | 3-way | jumper bar for terminal | WRT300 | **475.65** |

## WRT series - Terminal block with screw bolt connection *(accommodates ring lugs)*



57.106.1155.0

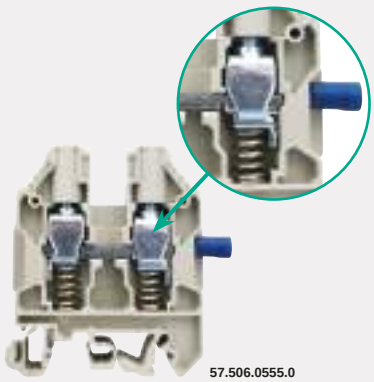
Designed for secure and efficient electrical connections, featuring a standard through terminal with threaded stud termination. The incorporation of a hinged section nut allows for the easy accommodation of ring lugs, providing a secure and safe connection.

This design ensures that cables remain securely connected, even in the event of a loosened screw, thanks to the robust screw bolt system that delivers consistent torque application

- Universal screw bolt - ring lug connection system (M4)
- Hinged terminal screw for easy access of ring lugs
- Universal marking system

| type | model | wire size (stranded) | amperage IEC 947-7-1 | term. width | max. voltage | | price |
|---|---|---|---|---|---|---|---|
| **WRT terminal with stud connection to accept ring lugs** | | | | | | | |
| **57.106.1155.0** | WRT6 | 1.5...6 | 41A | 11 mm | 1000V | | **119.70** |
| **07.300.6955.0** | APRT6 | end plate for above terminal | | | for term. | WRT6 | **18.06** |

## WKN spring supported screw connection terminal block



57.506.0555.0

This terminal features a spring-supported screw connection that is optimized for use with hook blade terminals. The innovative spring mechanism not only ensures a stable and safe connection but also prevents the hook blade lug from exiting the terminal, even in the event of a loosened screw.

With a standard through terminal and threaded stud termination, the WKN model also incorporates a hinged section nut for easy integration with ring lugs

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **57.506.0555.0** | WKN6SF | 0.5...6 | 41A | 8 mm | 800 V | | **88.20** |
| **57.510.0555.0** | WKN10SF | 2.5...10 | 57A | 10 mm | 800 V | | **97.65** |
| **07.313.2355.0** | APN6SF | end plate for above terminal | | | for term. | WKN 6 SF | **10.29** |
| **07.313.2455.0** | APN10SF | end plate for above terminal | | | for term. | WKN 10 SF | **12.92** |

## WAK busbar termination *(earth/neutral)*

**Busbar** *(1 meter length)*

| | | | | |
|---|---|---|---|---|
| **GI06006.1** | 6 x 6 mm | 120A | 1 meter | busbar for WAK terminals | **527.10** |

**Busbar support**

| | | | | |
|---|---|---|---|---|
| **19.230.0040.0** | KSO11/1ZKR | support | busbar support for 6 x 6 mm bars | **66.15** |

**Terminals - slide-on - earth or neutral**

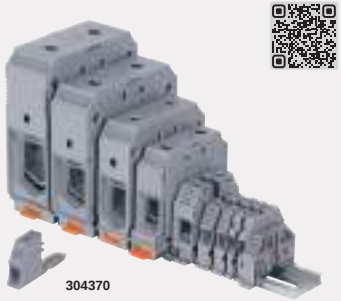
- Steel - zinc plated *(galvanised)*



30.494...

| | | | | | |
|---|---|---|---|---|---|
| **30.494.0010.0** | AK4/1 | 0.5...4 | 41A | clamp terminal for 6 x 6 mm busbar | **12.29** |
| **30.494.1010.0** | AK16/1 | 1...16 | 76A | clamp terminal for 6 x 6 mm busbar | **16.70** |
| **30.494.1110.0** | AK25/3 | 2.5...25 | 41A | clamp terminal for 6 x 6 mm busbar | **34.76** |
| **30.494.2510.0** | AK35/3 | 2.5...35 | 125A | clamp terminal for 6 x 6 mm busbar | **37.91** |

*See DIN mounting rail*


304370


304120


304141


304150





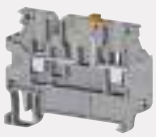

462121


304300


334210


317109


324409


304419

## AVK series - Screw clamp terminals

| type | wire size ($mm^2$) | amperage EN60947-7-1 | terminal width | | description | price |
|---|---|---|---|---|---|---|
| **Standard feed through terminals** | | | | | | |
| **304120** | 2.5 mm | 24A | 5 mm | grey | rail mount screw clamp terminal | **8.61** |
| **304130** | 4 mm | 32A | 6 mm | grey | rail mount screw clamp terminal | **10.29** |
| **304140** | 6 mm | 41A | 8 mm | grey | rail mount screw clamp terminal | **14.81** |
| **304150** | 10 mm | 57A | 10 mm | grey | rail mount screw clamp terminal | **19.64** |
| **304121** | 2.5 mm | 24A | 5 mm | blue | rail mount screw clamp terminal | **9.87** |
| **304131** | 4 mm | 32A | 6 mm | blue | rail mount screw clamp terminal | **11.87** |
| **304141** | 6 mm | 41A | 8 mm | blue | rail mount screw clamp terminal | **14.81** |
| **304151** | 10 mm | 57A | 10 mm | blue | rail mount screw clamp terminal | **19.64** |
| **304240** | 16 mm | 76A | 12 mm | grey | rail mount screw clamp terminal | **34.02** |
| **304290** | 25 mm | 101A | 12 mm | grey | rail mount screw clamp terminal | **56.70** |
| **304250*** | 35 mm | 125A | 16 mm | grey | rail mount screw clamp terminal | **65.10** |
| **304330*** | 50 mm | 150A | 20 mm | grey | rail mount screw clamp terminal | **159.60** |
| **304190*** | 70 mm | 192A | 22 mm | grey | rail mount screw clamp terminal | **283.50** |
| **304340*** | 95 mm | 232A | 25 mm | grey | rail mount screw clamp terminal | **298.20** |
| **304350*** | 150 mm | 309A | 31 mm | grey | rail mount screw clamp terminal | **411.60** |
| **304360*** | 240 mm | 415A | 36 mm | grey | rail mount screw clamp terminal | **554.40** |
| * *Fully insulated (no end plate required)* | | | | | | |
| **304370** | 6 mm | 41A | 8 mm | | plug-in auxiliary term. for 304 340/50/60 | **28.25** |
| **End plates for above terminals** | | | | | | |
| **444120** | end plate | 2.5 - 10 | 1.5 mm | grey | for 2.5-4-6-10 mm terminals | **4.94** |
| **444121** | end plate | 2.5 - 10 | 1.5 mm | blue | for 2.5-4-6-10 mm terminals | **4.94** |
| **444170** | end plate | 16 mm | 1.5 mm | grey | for 16 mm terminals | **7.77** |
| **450250** | end plate | 25 mm | 1.5 mm | grey | for 25 mm terminals | **8.51** |
| **462120** | partition | 2.5 - 10 | 1.5 mm | grey | for 2.5-4-6-10 mm terminals | **5.78** |
| **462121** | partition | 2.5 - 10 | 1.5 mm | blue | for 2.5-4-6-10 mm terminals | **5.78** |
| **462170** | partition | 16 mm | 1.5 mm | grey | for 16 mm terminals | **11.97** |
| **Stud terminals** *(bolt and nut termination top and bottom)* | | | | | | |
| **304300** | 95 mm | 232A | 40 mm | grey | rail mount stud terminal | **253.05** |
| **304310** | 150 mm | 309A | 48 mm | grey | rail mount stud terminal | **392.70** |
| **304320** | 240 mm | 415A | 53 mm | grey | rail mount stud terminal | **560.70** |
| **Covers for above stud terminals** | | | | | | |
| **466100** | cover | – | hinged isolation cover for stud terminal | | 304 300 | **39.27** |
| **466110** | cover | – | hinged isolation cover for stud terminal | | 304 310 | **49.35** |
| **466120** | cover | – | hinged isolation cover for stud terminal | | 304 320 | **59.85** |
| **Earth terminals** - *(fully insulated no end cover required)* | | | | | | |
| **334170** | 2.5 mm | – | 5 mm | grn/yell | rail mount earth terminal | **35.07** |
| **334450** | 4 mm | – | 6 mm | grn/yell | rail mount earth terminal | **46.20** |
| **334460** | 6 mm | – | 8 mm | grn/yell | rail mount earth terminal | **46.20** |
| **334470** | 10 mm | – | 10 mm | grn/yell | rail mount earth terminal | **51.45** |
| **334200** | 16 mm | – | 12 mm | grn/yell | rail mount earth terminal | **124.95** |
| **334210** | 35 mm | – | 16 mm | grn/yell | rail mount earth terminal | **98.70** |
| **334190** | 50 mm | – | 20 mm | grn/yell | rail mount earth terminal | **312.90** |
| **Multi-tier terminals** *(PIK/PUK)* | | | | | | |
| **317109** | 2.5 mm | 24A | 5 mm | two tier | rail mount terminal | **22.16** |
| **319109** | 4 mm | 32A | 6 mm | two tier | rail mount terminal | **29.51** |
| **324109** | 2.5 mm | 24A | 6 mm | three tier | rail mount terminal | **45.15** |
| **324409** | 2.5 mm | 24A | 6 mm | three tier | sensor terminal | **45.15** |
| **449019** | end plate | 2.5/4 mm | 1.5 mm | for 2.5/4 mm 2 tier terminal | 317/9109 | **13.86** |
| **450139** | end plate | 2.5 mm | 1.5 mm | for 2.5 mm 3 tier terminal | 324109 | **7.25** |
| **450169** | end plate | 2.5 mm | 1.5 mm | for 2.5 mm sensor terminal | 324409 | **9.66** |
| **Disconnect terminals** *(AVK)* | | | | | | |
| **304419*** | 2.5 mm | 16A | 5 mm | grey | rail mounting disconnect terminal | **31.19** |
| **304380*** | 4 mm | 20A | 6 mm | grey | rail mounting disconnect terminal | **32.13** |
| **450330** | end plate | 2.5/4 mm | 1.5 mm | for above disconnect terminals | 304419/380 | **7.46** |

* *2.5/4 mm terminals accept plug-in bridge pieces 2/3/4/10 way (see page **L-7**)*

*Terminal accessories, see page **L-8...9***

*See DIN mounting rail*



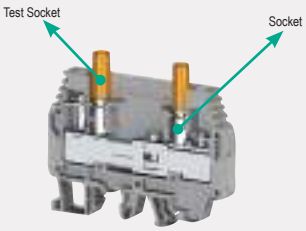
Above ZAR prices do not include VAT. E&OE



353309



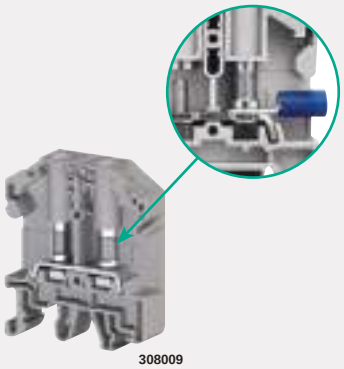
355619



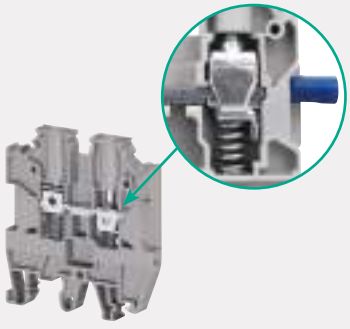

375692



476302



308009



304500

## AVK series - Screw clamp terminals

| type | wire size ($mm^2$) | amperage EN60947-7-1 | terminal width | description | | price |
|---|---|---|---|---|---|---|
| **Fuse terminals (AVK) - accept 5 x 20 mm fuses** | | | | | | |
| **Low profile fused terminal - for** 5 x 20 mm fuses | | | | | | |
| **351109** | 6 mm | 6.3A | 8 mm | low profile fused terminal | – | **27.41** |
| **351229** | 6 mm | 6.3A | 8 mm | fused term. LED indication | 24 VDC | **56.70** |
| **351619** | 6 mm | 6.3A | 8 mm | fused term. LED indication | 220 VAC | **56.70** |
| **450049** | end plate | – | 1.5 mm | for above 351 ... fused terminals | | **9.98** |
| **Fused terminal with pluggable fuse section** *(supports spare fuse)* | | | | | | |
| **355109*** | 4 mm | 10A | 6.2 mm | plug-in fuse terminal | – | **49.35** |
| **355229*** | 4 mm | 10A | 6.2 mm | fused term. LED indication | 24 VDC | **78.75** |
| **355619*** | 4 mm | 10A | 6.2 mm | fused term. LED indication | 220 VAC | **78.75** |
| **450059** | end plate | – | 1.5 mm | for above 355 ... fused terminals | | **9.14** |
| **Two tier 1 x fused and 1 x through terminal (AVK)** *(supports spare fuse)* | | | | | | |
| **353309*** | 4 mm | 6.3A | 8 mm | two tier (*one fused*) | | **74.55** |
| **353329*** | 4 mm | 6.3A | 8 mm | fused term. LED indication | 24 VDC | **123.90** |
| **450209** | end plate | – | 1.5 mm | for above 353 ... fused terminals | | **17.43** |

* *355/353--- terminals accept plug-in bridge pieces (2/3/4/10 way) (see page **L-8**)*

**Comb bridging bars** *(cross-connection)* **for above 355/353 series terminals**

| type | ref. | poles | for term. width | description | | price |
|---|---|---|---|---|---|---|
| **476282** | TKO6/2 | 2-pole | 8 mm | comb bridge for std screw terminal | 304 140 | **15.12** |
| **476283** | TKO6/3 | 3-pole | 8 mm | comb bridge for std screw terminal | 304 140 | **18.48** |

* *355/353--- terminals accept plug-in bridge pieces (2/3/4/10 way)* for more options, see page **L-8**

## Special application terminals

### WGO test / disconnect terminals

Used to perform required tests without disconnecting the system. Usually installed on secondary side of current transformers, permitting observation of testing equipment safe exchange of meters by bridging secondary side of transformer during exchange

| | | | | | | |
|---|---|---|---|---|---|---|
| **375690** | 6 mm | 41A | 8 mm | terminal without test socket | | **79.80** |
| **375691** | 6 mm | 41A | 8 mm | terminal with test socket | | **93.45** |
| **375692** | 6 mm | 41A | 8 mm | terminal with double test socket | | **108.15** |
| **476302** | 2-pole | | | sliding bridge/cross connector | for above test terminals | **8.93** |
| **476303** | 3-pole | | | sliding bridge/cross connector | for above test terminals | **15.75** |
| **476304** | 4-pole | | | sliding bridge/cross connector | for above test terminals | **19.11** |
| **450229** | end plate | – | | for above test terminals | 375690/1/2 | **8.82** |

### 2PB6/NM - Terminal block with screw bolt connection *(accommodates ring lugs)*

Standard through terminal with threaded stud termination, incorporating a hinged section nut to accommodate a ring lug, provides a secure, safe connection preventing cable from disconnection in the event of loosened screw.

- Universal screw bolt - ring lug connection system (M4)
- Hinged terminal cover for easy access for ring lugs

**PB6/NM - Terminal with stud connection to accept ring lugs**

| | | | | | | |
|---|---|---|---|---|---|---|
| **308009** | 0.5...6 | 41A | 11 mm | bolt connection terminal block | | **72.45** |
| **451019** | end plate | – | for above bolt connection terminal | | 308009 | **5.46** |

## AVK Y series - Spring supported screw connection terminal block

Special application terminal with spring supported screw connection for use with hook blade terminals the spring provides a secure, safe connection, simultaneously preventing hook blade lug from exiting the terminal even in the event of a loosened connection.

| | | | | | | |
|---|---|---|---|---|---|---|
| **304500** | 0.2...6 | 32A | 6 mm | spring assisted terminal block | | **29.93** |
| **304510** | 0.5...10 | 41A | 8 mm | spring assisted terminal block | | **31.29** |
| **304520** | 0.5...16 | 57A | 10 mm | spring assisted terminal block | | **32.24** |
| **450300** | end plate | – | for above spring assisted terminal | | 304500/10 | **5.78** |
| **450260** | end plate | – | for above spring assisted terminal | | 304520 | **5.78** |

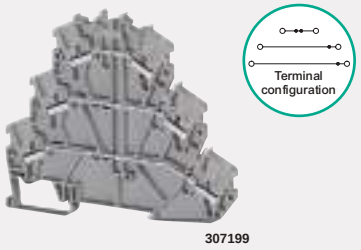
*Terminal accessories, see page **L-8...9***

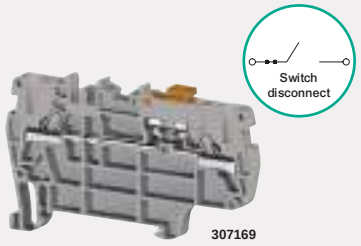
*See DIN mounting rail*

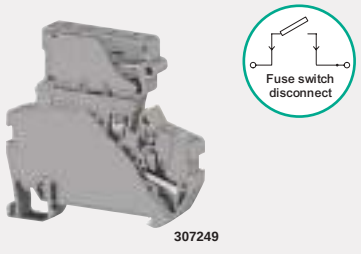


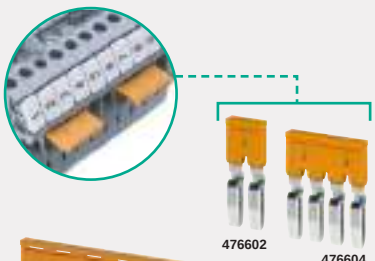


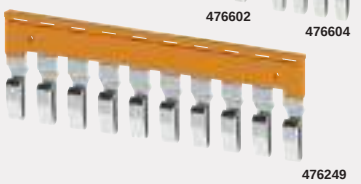





## PYK series - "Push-in" spring clamp terminals

Cable connection is made by simply "pushing" the cable into the terminal without the need for tools. Secure connection is guaranteed in all conditions saving time in terminating. If required, cable can easily be removed with the use of a screwdriver. The easy "push-in" termination together with "plug-in" bridging combs combine to speed up connection of terminals, providing a rapid, secure, safe connection over time.

| type | wire size ($mm^2$) | amperage EN60947-7-1 | terminal width | description | | price |
|---|---|---|---|---|---|---|
| **Feed through terminals (PYK)** | | | | | | |
| **307019** | 1.5 mm | 17.5A | 4.2 mm | rail mount spring clamp terminal | | **13.02** |
| **307109** | 2.5 mm | 24A | 5 mm | rail mount spring clamp terminal | | **12.18** |
| **307119** | 4 mm | 32A | 6 mm | rail mount spring clamp terminal | | **15.02** |
| **307129** | 6 mm | 41A | 8 mm | rail mount spring clamp terminal | | **30.87** |
| **307139** | 10 mm | 57A | 10 mm | rail mount spring clamp terminal | | **43.05** |
| **446639** | end plate | – | 1.2 mm | for 1.5 mm terminal | 307019 | **2.94** |
| **446449** | end plate | – | 1.2 mm | for 2.5 mm terminal | 307109 | **5.25** |
| **446459** | end plate | – | 1.2 mm | for 4.0 mm terminal | 307119 | **5.67** |
| **446469** | end plate | – | 1.2 mm | for 6.0 mm terminal | 307129 | **6.51** |
| **446479** | end plate | – | 1.2 mm | for 10.0 mm terminal | 307139 | **7.77** |
| **Earth terminals** - *yellow/green screw-less, clip-on earth terminals* | | | | | | |
| **336500** | 2.5 mm | 24A | 5 mm | rail mount spring clamp earth terminal | | **37.38** |
| **336510** | 4 mm | 32A | 6 mm | rail mount spring clamp earth terminal | | **50.40** |
| **336520** | 6 mm | 41A | 8 mm | rail mount spring clamp earth terminal | | **66.15** |
| **336530** | 10 mm | 57A | 10 mm | rail mount spring clamp earth terminal | | **108.15** |
| **446442** | end plate | – | 1.2 mm | for 2.5 mm earth terminal | 336500 | **5.25** |
| **446452** | end plate | – | 1.2 mm | for 4.0 mm earth terminal | 336510 | **5.67** |
| **446462** | end plate | – | 1.2 mm | for 6.0 mm earth terminal | 336520 | **6.51** |
| **446472** | end plate | – | 1.2 mm | for 10.0 mm earth terminal | 336530 | **7.77** |
| **Multi-tier terminals** | | | | | | |
| **307179** | 2.5 mm | 24A | 5 mm | two tier | spring clamp terminal | **40.22** |
| **307199** | 2.5 mm | 24A | 5 mm | three tier | spring clamp terminal | **56.70** |
| **446519** | end plate | – | 1.2 mm | for 2.5 mm 2 tier terminal | 307179 | **6.62** |
| **446529** | end plate | – | 1.2 mm | for 2.5 mm 3 tier terminal | 307199 | **7.56** |
| **Disconnect terminals** | | | | | | |
| **307169** | 2.5 mm | 20A | 5 mm | rail mount disconnect terminal | | **47.25** |
| **446509** | end plate | – | 1.2 mm | for disconnect terminal | 307169 | **15.96** |
| **Fuse terminals** - *for 5 x 20 mm fuses* | | | | *fully insulated - no end plate required* | | |
| **307249** | 2.5 mm | 10A | 8 mm | rail mount fused terminal | | **78.75** |
| **307259** | 2.5 mm | 10A | 8 mm | fused term. LED indication | 24 VDC | **150.15** |
| **307269** | 2.5 mm | 10A | 8 mm | fused term. LED indication | 220 VAC | **150.15** |
| **PYK test terminal** *(plug-in)* | | | | *plugs into standard PYK range terminals* | | |
| **498559** | 1.5 mm | plug-in test terminal | | *(provides an additional terminal outlet)* | | **48.30** |
| **Cross connectors** *(plug-in bridging bars)* | | | | | | |
| **476602** | UK1.5/2 | 2-pole | 4.2 mm | plug-in bridge piece for terminals | | **15.65** |
| **476603** | UK1.5/3 | 3-pole | 4.2 mm | plug-in bridge piece for terminals | | **21.00** |
| **476604** | UK1.5/4 | 4-pole | 4.2 mm | plug-in bridge piece for terminals | | **26.04** |
| **476609** | UK1.5/10 | 10-pole | 4.2 mm | plug-in bridge piece for terminals | | **92.40** |
| **476222** | UK2.5/2 | 2-pole | 5 mm | plug-in bridge piece for terminals | | **16.28** |
| **476223** | UK2.5/3 | 3-pole | 5 mm | plug-in bridge piece for terminals | | **18.06** |
| **476224** | UK2.5/4 | 4-pole | 5 mm | plug-in bridge piece for terminals | | **19.22** |
| **476229** | UK2.5/10 | 10-pole | 5 mm | plug-in bridge piece for terminals | | **34.65** |
| **476232** | UK4/2 | 2-pole | 6 mm | plug-in bridge piece for terminals | | **16.91** |
| **476233** | UK4/3 | 3-pole | 6 mm | plug-in bridge piece for terminals | | **19.01** |
| **476234** | UK4/4 | 4-pole | 6 mm | plug-in bridge piece for terminals | | **20.69** |
| **476239** | UK4/10 | 10-pole | 6 mm | plug-in bridge piece for terminals | | **38.43** |
| **476242** | UK6/2 | 2-pole | 8 mm | plug-in bridge piece for terminals | | **18.06** |
| **476243** | UK6/3 | 3-pole | 8 mm | plug-in bridge piece for terminals | | **21.42** |
| **476244** | UK6/4 | 4-pole | 8 mm | plug-in bridge piece for terminals | | **23.94** |
| **476249** | UK6/10 | 10-pole | 8 mm | plug-in bridge piece for terminals | | **44.10** |
| **476252** | UK10/2 | 2-pole | 10 mm | plug-in bridge piece for terminals | | **24.68** |
| **476253** | UK10/3 | 3-pole | 10 mm | plug-in bridge piece for terminals | | **30.66** |
| **476254** | UK10/4 | 4-pole | 10 mm | plug-in bridge piece for terminals | | **35.91** |
| **476259** | UK10/10 | 10-pole | 10 mm | plug-in bridge piece for terminals | | **76.65** |

*See DIN mounting rail*



Above ZAR prices do not include VAT. E&OE

## Bridging bars *(cross-connection)* for screw type through terminals


474122


474142


474164


474179


476262


476274


476294

| type | ref. | poles | for term. width | description | | price |
|---|---|---|---|---|---|---|
| **Screw-in bridging bars** *(internal)* | | | *for 2.5 - 240 mm terminals* | | *AVK series* | |
| **474122** | UK2.5/2 | 2-pole | 5 mm | bridge piece for std + 2 tier terminal | 304 120 | **16.49** |
| **474123** | UK2.5/3 | 3-pole | 5 mm | bridge piece for std + 2 tier terminal | 304 120 | **22.16** |
| **474124** | UK2.5/4 | 4-pole | 5 mm | bridge piece for std + 2 tier terminal | 304 120 | **27.41** |
| **474129** | UK2.5/10 | 10-pole | 5 mm | bridge piece for std + 2 tier terminal | 304 120 | **96.60** |
| **474210** | UK2.5/50 | 50-pole | 5 mm | bridge piece for std + 2 tier terminal | 304 120 | **256.20** |
| **474132** | UK4/2 | 2-pole | 6 mm | bridge piece for std + 2 tier terminal | 304 130 | **15.33** |
| **474133** | UK4/3 | 3-pole | 6 mm | bridge piece for std + 2 tier terminal | 304 130 | **21.74** |
| **474134** | UK4/4 | 4-pole | 6 mm | bridge piece for std + 2 tier terminal | 304 130 | **28.14** |
| **474139** | UK4/10 | 10-pole | 6 mm | bridge piece for std + 2 tier terminal | 304 130 | **70.35** |
| **474190** | UK4/50 | 50-pole | 6 mm | bridge piece for std + 2 tier terminal | 304 130 | **331.80** |
| **480132** | UK2.5/2 | 2-pole | 6 mm | screw-in bridge piece for 3 tier terminal | 324 109 | **22.68** |
| **480133** | UK2.5/3 | 3-pole | 6 mm | screw-in bridge piece for 3 tier terminal | 324 109 | **34.76** |
| **480134** | UK2.5/4 | 4-pole | 6 mm | screw-in bridge piece for 3 tier terminal | 324 109 | **43.05** |
| **480139** | UK2.5/10 | 10-pole | 6 mm | screw-in bridge piece for 3 tier terminal | 324 109 | **108.15** |
| **474142** | UK6/2 | 2-pole | 8 mm | screw-in bridge piece for terminals | 304 140 | **15.96** |
| **474143** | UK6/3 | 3-pole | 8 mm | screw-in bridge piece for terminals | 304 140 | **22.58** |
| **474144** | UK6/4 | 4-pole | 8 mm | screw-in bridge piece for terminals | 304 140 | **29.30** |
| **474149** | UK6/10 | 10-pole | 8 mm | screw-in bridge piece for terminals | 304 140 | **69.30** |
| **474152** | UK10/2 | 2-pole | 10 mm | screw-in bridge piece for terminals | 304 150 | **16.28** |
| **474153** | UK10/3 | 3-pole | 10 mm | screw-in bridge piece for terminals | 304 150 | **23.10** |
| **474154** | UK10/4 | 4-pole | 10 mm | screw-in bridge piece for terminals | 304 150 | **29.93** |
| **474159** | UK10/10 | 10-pole | 10 mm | screw-in bridge piece for terminals | 304 150 | **71.40** |
| **474162** | UK16/2 | 2-pole | 12 mm | screw-in bridge piece for terminals | 304 160 | **21.11** |
| **474163** | UK16/3 | 3-pole | 12 mm | screw-in bridge piece for terminals | 304 160 | **30.45** |
| **474164** | UK16/4 | 4-pole | 12 mm | screw-in bridge piece for terminals | 304 160 | **39.69** |
| **474169** | UK16/10 | 10-pole | 12 mm | screw-in bridge piece for terminals | 304 160 | **95.55** |
| **474172** | UK35/2 | 2-pole | 16 mm | screw-in bridge piece for terminals | 304 240 | **32.13** |
| **474173** | UK35/3 | 3-pole | 16 mm | screw-in bridge piece for terminals | 304 240 | **47.25** |
| **474174** | UK35/4 | 4-pole | 16 mm | screw-in bridge piece for terminals | 304 240 | **61.95** |
| **474179** | UK35/10 | 10-pole | 16 mm | screw-in bridge piece for terminals | 304 240 | **149.10** |
| **478332** | UK50/2 | 2-pole | 20 mm | screw-in bridge piece for terminals | 304 330 | **39.17** |
| **478333** | UK50/3 | 3-pole | 20 mm | screw-in bridge piece for terminals | 304 330 | **59.85** |
| **478334** | UK50/4 | 4-pole | 20 mm | screw-in bridge piece for terminals | 304 330 | **80.85** |
| **478342** | UK95/2 | 2-pole | 25mm | screw-in bridge piece for terminals | 304 340 | **183.75** |
| **478343** | UK95/3 | 3-pole | 25mm | screw-in bridge piece for terminals | 304 340 | **241.50** |
| **478344** | UK95/4 | 4-pole | 25mm | screw-in bridge piece for terminals | 304 340 | **299.25** |
| **478352** | UK150/2 | 2-pole | 31 mm | screw-in bridge piece for terminals | 304 350 | **268.80** |
| **478353** | UK150/3 | 3-pole | 31 mm | screw-in bridge piece for terminals | 304 350 | **389.55** |
| **478354** | UK150/4 | 4-pole | 31 mm | screw-in bridge piece for terminals | 304 350 | **489.30** |
| **478362** | UK240/2 | 2-pole | 36 mm | screw-in bridge piece for terminals | 304 360 | **407.40** |
| **478363** | UK240/3 | 3-pole | 36 mm | screw-in bridge piece for terminals | 304 360 | **599.55** |
| **478364** | UK240/4 | 4-pole | 36 mm | screw-in bridge piece for terminals | 304 360 | **792.75** |
| **Comb type bridge pieces** *(external)* | | | | | | |
| **476262** | TKO2.5/2 | 2-pole | 5 mm | comb bridge for std screw terminal | 304 200 | **15.02** |
| **476263** | TKO2.5/3 | 3-pole | 5 mm | comb bridge for std screw terminal | 304 200 | **15.96** |
| **476264** | TKO2.5/4 | 4-pole | 5 mm | comb bridge for std screw terminal | 304 200 | **16.49** |
| **476269** | TKO2.5/10 | 10-pole | 5 mm | comb bridge for std screw terminal | 304 200 | **28.14** |
| **476272** | TKO4/2 | 2-pole | 6 mm | comb bridge for std screw terminal | 304 210 | **15.44** |
| **476273** | TKO4/3 | 3-pole | 6 mm | comb bridge for std screw terminal | 304 210 | **16.70** |
| **476274** | TKO4/4 | 4-pole | 6 mm | comb bridge for std screw terminal | 304 210 | **17.64** |
| **476279** | TKO4/10 | 10-pole | 6 mm | comb bridge for std screw terminal | 304 210 | **30.56** |
| **476282** | TKO6/2 | 2-pole | 8 mm | comb bridge for std screw terminal | 304 140 | **15.12** |
| **476283** | TKO6/3 | 3-pole | 8 mm | comb bridge for std screw terminal | 304 140 | **18.48** |
| **476284** | TKO6/4 | 4-pole | 8 mm | comb bridge for std screw terminal | 304 140 | **20.27** |
| **476289** | TKO6/10 | 10-pole | 8 mm | comb bridge for std screw terminal | 304 140 | **36.86** |
| **476292** | TKO10/2 | 2-pole | 10 mm | comb bridge for std screw terminal | 304 150 | **18.59** |
| **476293** | TKO10/3 | 3-pole | 10 mm | comb bridge for std screw terminal | 304 150 | **21.42** |
| **476294** | TKO10/4 | 4-pole | 10 mm | comb bridge for std screw terminal | 304 150 | **23.84** |
| **476299** | TKO10/10 | 10-pole | 10 mm | comb bridge for std screw terminal | 304 150 | **47.25** |



495049



495099



49613A + 495059



525362



525372



525382

| type | wire size ($mm^2$) | amperage EN60947-7-1 | term. width | description | price |
|---|---|---|---|---|---|
| **End stops for all terminals** | | | | | |
| **495049** | end stop | screw type | 7.5 mm | economical screw type terminal rail end stop | **5.99** |
| **495059*** | end stop | screwless | 7.5 mm | clamp-on terminal rail end stop | **8.40** |
| **495219*** | end stop | screw type | 7.5 mm | heavy duty screw type terminal rail end stop | **16.17** |
| **495099*** | end stop | screw type | 7.5 mm | large HD 50 - 240 mm terminal rail end stop | **19.01** |
| * *Accepts group marking support* **49613A** *(below) ratchet type for height adjustment* | | | | | |
| **Modular group marking** | | | | | |
| • Screw-type end bracket mounted 7.5 mm DIN-rail | | | | | |
| • Can be used together with screw connection feed-through one level terminals | | | | | |
| **49613A** | support | | | group marking support for all * terminal end stops (W) 6 mm | **13.34** |
| **496300** | support | | | group marking support for terminal end stop ***495219*** (W) 7 mm | **6.93** |
| **496310** | support | | | DIN rail mounting group marking support (W) 7 mm | **7.67** |

**Clamping yokes** *(slide onto 10 x 3 mm busbar)*

Clamping yokes can be slid onto a 10 x 3 mm flat busbar to make up any size earth or neutral bar with terminals to accommodate 4/10/35 $mm^2$ cables

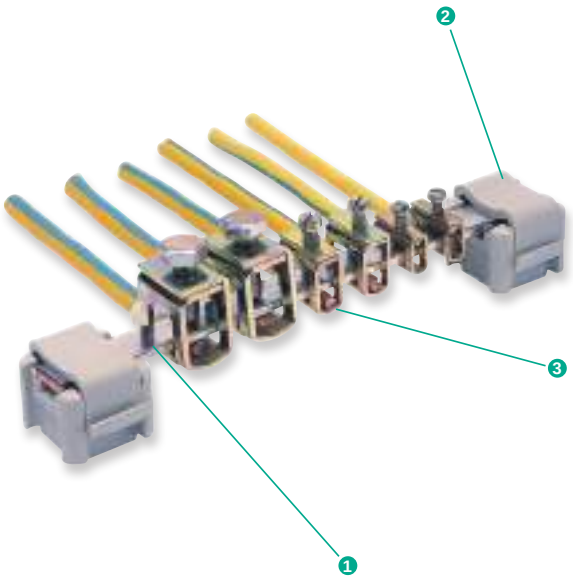
- Cross section: 4 ...35 $mm^2$
- Busbar size: 10 x 3 mm
- Fixing screw: **M3** (0.5 - 4 $mm^2$)
  **M4** (2.5 - 10 $mm^2$)
  **M5** (16 - 35 $mm^2$)

| type | cable size $mm^2$ | | insulation | description | | price |
|---|---|---|---|---|---|---|
| **525361** | 0.5 - 4 | clamp | none | bar mount clamping yoke | BK4 | **3.47** |
| **525362** | 2.5 - 10 | clamp | none | bar mount clamping yoke | BK10 | **5.99** |
| **525363** | 16 - 35 | clamp | none | bar mount clamping yoke | BK35 | **16.38** |
| **525371** | 0.5 - 4 | clamp | blue (neut.) | bar mount clamping yoke | IBK4 | **3.99** |
| **525372** | 2.5 - 10 | clamp | blue (neut.) | bar mount clamping yoke | IBK10 | **7.46** |
| **525373** | 16 - 35 | clamp | blue (neut.) | bar mount clamping yoke | IBK35 | **18.06** |
| **525381** | 0.5 - 4 | clamp | grn/yel (E) | bar mount clamping yoke | IBK4 | **3.99** |
| **525382** | 2.5 - 10 | clamp | grn/yel (E) | bar mount clamping yoke | IBK10 | **7.46** |
| **525383** | 16 - 35 | clamp | grn/yel (E) | bar mount clamping yoke | IBK35 | **18.06** |
| **Accessories for above clamping yokes** | | | | | | |
| **GI03010.1** | 10 x 3 mm | | | Cu flat copper bar for above clamping yokes | 1 meter | **466.20** |
| **528110** | screw | | | universal support for single bars | *(10 x 3/6 x 6/15 x 3 mm)* | **12.29** |
| **495109** | rail mnt | | | DIN universal support for up to three bars | *(10 x 3/6 x 6 mm)* | **23.21** |

*The above clamping yokes can be slid onto the 10 x 3 busbar up to 50 $mm^2$ and the entire wiring matched to the installation.*

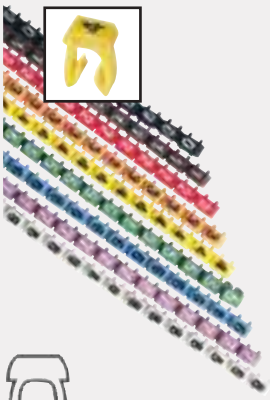
## Clamping yokes and accessories

Below example of a complete clamping yoke.
**1. GI03010.1**
**2. 528110**
**3. 52536...**






Above ZAR prices do not include VAT. E&OE





0.75 .....1.5 mm²

0
1
2
3
4
5
6
7
8
9

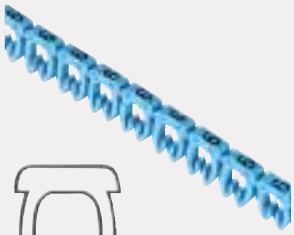
All other symbols





WM.....

1.50 .....2.5 mm²



519006



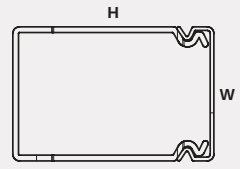
4 .....6 mm²

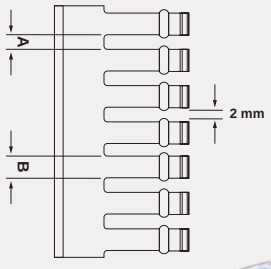
## Wire markers (*0.5 mm² - 6 mm²*)

- Clip-on wire markers simply clip directly onto already installed cables *(no need to remove wire from terminals to mark them)*
- Markers incorporate small guide pins, ensuring perfect alignment of markers when mounted on cables
- Mounted markers provide firm secure mounting onto wires *(not easily removable)*
- Made of polymide 6.6 *(ambient temperature -30ºC...+70ºC)*
- Supplied in packs of all one numerical, alphabetical, symbol : Alphabet 200 pcs per pack
  : Numerical 500 pcs per pack

| type | character | colour | wire size mm² | description | qty per pack | price per pack |
|---|---|---|---|---|---|---|
| **WM01 marker for cables** | | | | | | |
| • Cross-section: 0.5 mm² - 1.5 mm² | | | | | | |
| **517000** | "0" | black | 0.5 - 1.5 | clip-on cable marker | 500 | **148.05** |
| **517001** | "1" | brown | 0.5 - 1.5 | clip-on cable marker | 500 | **148.05** |
| **517002** | "2" | red | 0.5 - 1.5 | clip-on cable marker | 500 | **148.05** |
| **517003** | "3" | orange | 0.5 - 1.5 | clip-on cable marker | 500 | **148.05** |
| **517004** | "4" | yellow | 0.5 - 1.5 | clip-on cable marker | 500 | **148.05** |
| **517005** | "5" | green | 0.5 - 1.5 | clip-on cable marker | 500 | **148.05** |
| **517006** | "6" | blue | 0.5 - 1.5 | clip-on cable marker | 500 | **148.05** |
| **517007** | "7" | purple | 0.5 - 1.5 | clip-on cable marker | 500 | **148.05** |
| **517008** | "8" | grey | 0.5 - 1.5 | clip-on cable marker | 500 | **148.05** |
| **517009** | "9" | white | 0.5 - 1.5 | clip-on cable marker | 500 | **148.05** |
| **519514/_*** | **/_*** | yellow | 0.5 - 1.5 | clip-on cable marker | 200 | **57.00** |
| */_* Insert marking requirement A,B,C...Z/+/-/■/•/ or other) Example* **519514/A** | | | | | | |
| **WM02 marker for cables** | | | | | | |
| • Cross-section 1.5 mm² - 2.5 mm² | | | | | | |
| **518000** | "0" | black | 1.5 - 2.5 | clip-on cable marker | 500 | **173.25** |
| **518001** | "1" | brown | 1.5 - 2.5 | clip-on cable marker | 500 | **173.25** |
| **518002** | "2" | red | 1.5 - 2.5 | clip-on cable marker | 500 | **173.25** |
| **518003** | "3" | orange | 1.5 - 2.5 | clip-on cable marker | 500 | **173.25** |
| **518004** | "4" | yellow | 1.5 - 2.5 | clip-on cable marker | 500 | **173.25** |
| **518005** | "5" | green | 1.5 - 2.5 | clip-on cable marker | 500 | **173.25** |
| **518006** | "6" | blue | 1.5 - 2.5 | clip-on cable marker | 500 | **173.25** |
| **518007** | "7" | purple | 1.5 - 2.5 | clip-on cable marker | 500 | **173.25** |
| **518008** | "8" | grey | 1.5 - 2.5 | clip-on cable marker | 500 | **173.25** |
| **518009** | "9" | white | 1.5 - 2.5 | clip-on cable marker | 500 | **173.25** |
| **519524/_*** | **/_*** | yellow | 1.5 - 2.5 | clip-on cable marker | 200 | **66.00** |
| */_* Insert marking requirement A,B,C...Z/+/-/■/•/ or other) Example* **519524/Z** | | | | | | |
| **WM03 marker for cables** | | | | | | |
| • Cross-section 4 mm² - 6 mm² | | | | | | |
| **519000** | "0" | black | 4.0…6.0 | clip-on cable marker | 500 | **195.30** |
| **519001** | "1" | brown | 4.0…6.0 | clip-on cable marker | 500 | **195.30** |
| **519002** | "2" | red | 4.0…6.0 | clip-on cable marker | 500 | **195.30** |
| **519003** | "3" | orange | 4.0…6.0 | clip-on cable marker | 500 | **195.30** |
| **519004** | "4" | yellow | 4.0…6.0 | clip-on cable marker | 500 | **195.30** |
| **519005** | "5" | green | 4.0…6.0 | clip-on cable marker | 500 | **195.30** |
| **519006** | "6" | blue | 4.0…6.0 | clip-on cable marker | 500 | **195.30** |
| **519007** | "7" | purple | 4.0…6.0 | clip-on cable marker | 500 | **195.30** |
| **519008** | "8" | grey | 4.0…6.0 | clip-on cable marker | 500 | **195.30** |
| **519009** | "9" | white | 4.0…6.0 | clip-on cable marker | 500 | **195.30** |
| **519534/_*** | **/_*** | yellow | 4.0…6.0 | clip-on cable marker | 200 | **75.00** |
| */_* Insert marking requirement A,B,C...Z/+/-/■/•/ or other) Example* **519534/+** | | | | | | |

| Open Type | | | | | |
|---|---|---|---|---|---|
| Numbers | WM01 | WM02 | WM03 | Qty. | Colour |
| 0 | | | | 500 | Black |
| 1 | | | | 500 | Brown |
| 2 | | | | 500 | Red |
| 3 | | | | 500 | Orange |
| 4 | | | | 500 | Yellow |
| 5 | | | | 500 | Green |
| 6 | | | | 500 | Blue |
| 7 | | | | 500 | Purple |
| 8 | | | | 500 | Grey |
| 9 | | | | 500 | White |




15% OFF CARTON QUANTITIES


TSL025060N


TSL040060W


VTC125

## Slotted trunking

**Ezi Canal** slotted cable ducting features an improved cover design for ease of opening and closing, permitting easy access to wiring in control panels. Meets maximum wire capacity requirements and space constraints *(from small control panels to large integrated systems)* to provide effective support for demanding wire management solutions.

Manufactured from high-impact, self-extinguishing, warp-proof rigid PVC material providing a shock proof insulated protection solution resistant to acids, oils and grease. Used for general purpose control panel wiring to provide improved aesthetics and a neater wire management solution in high density control panels.

- Simple open/close cover design for easy access to wiring in control panel
- Double score-line permits finger/slot or complete sidewall removal
- Coining process for burr-free edges to protect hands and wiring from abrasion
- Restricted slot design retains wire within slot for fast, easy wire installation or removal
- Duct and cover form a flush sidewall to provide increased capacity and improved appearance
- UL94 flammability rating V-0 for excellent flame retardation

Standard colour: Grey - others available on request *(volume dependant)*
Standard length: Supplied in two meter lengths, complete with covers

***15% off list price:*** *For full carton quantities of **TSL** trunking*
*Add **/B** to end of part number (e.g **TSL025040N/B**)*

| type | dimensions (mm) (W) | (H) | colour | description | slot A (mm) | finger B (mm) | carton qty (L - 2 m) | price each |
|---|---|---|---|---|---|---|---|---|
| **Narrow slotted trunking** | | | Finger: 6 mm / Slot - 4 mm | | (10 mm pitch) | | | |
| • Narrow slot/finger design to closely fit spacing of high density terminal blocks and I/O modules | | | | | | | | |
| **KKC1518** | 15 | 18 | grey | PVC slotted cable trunking | 5 | 7.5 | 112 | **71.40** |
| **TSL025025N** | 25 | 25 | grey | PVC slotted cable trunking | 4 | 6 | 48 | **89.25** |
| **TSL025040N** | 25 | 40 | grey | PVC slotted cable trunking | 4 | 6 | 40 | **120.75** |
| **TSL040040N** | 40 | 40 | grey | PVC slotted cable trunking | 4 | 6 | 24 | **155.40** |
| **TSL060040N** | 60 | 40 | grey | PVC slotted cable trunking | 4 | 6 | 24 | **199.50** |
| **TSL080040N** | 80 | 40 | grey | PVC slotted cable trunking | 4 | 6 | 18 | **233.10** |
| **TSL025060N** | 25 | 60 | grey | PVC slotted cable trunking | 4 | 6 | 30 | **160.65** |
| **TSL040060N** | 40 | 60 | grey | PVC slotted cable trunking | 4 | 6 | 28 | **185.85** |
| **TSL060060N** | 60 | 60 | grey | PVC slotted cable trunking | 4 | 6 | 18 | **228.90** |
| **TSL080060N** | 80 | 60 | grey | PVC slotted cable trunking | 4 | 6 | 14 | **294.00** |
| **TSL100060N** | 100 | 60 | grey | PVC slotted cable trunking | 4 | 6 | 12 | **343.35** |
| **TSL025080N** | 25 | 80 | grey | PVC slotted cable trunking | 4 | 6 | 28 | **198.45** |
| **TSL040080N** | 40 | 80 | grey | PVC slotted cable trunking | 4 | 6 | 20 | **227.85** |
| **TSL060080N** | 60 | 80 | grey | PVC slotted cable trunking | 4 | 6 | 12 | **284.55** |
| **TSL080080N** | 80 | 80 | grey | PVC slotted cable trunking | 4 | 6 | 8 | **331.80** |
| **TSL100080N** | 100 | 80 | grey | PVC slotted cable trunking | 4 | 6 | 8 | **387.45** |
| **TSL040100N** | 40 | 100 | grey | PVC slotted cable trunking | 4 | 6 | 16 | **322.35** |
| **TSL060100N** | 60 | 100 | grey | PVC slotted cable trunking | 4 | 6 | 12 | **338.10** |
| **TSL080100N** | 80 | 100 | grey | PVC slotted cable trunking | 4 | 6 | 8 | **393.75** |
| **TSL100100N** | 100 | 100 | grey | PVC slotted cable trunking | 4 | 6 | 8 | **434.70** |
| **Wide slotted trunking** | | | Finger: 12 mm / Slot - 8 mm | | (20 mm pitch) | | | |
| **TSL040060W** | 40 | 60 | grey | PVC slotted cable trunking | 8 | 12 | 28 | **185.85** |
| **TSL060060W** | 60 | 60 | grey | PVC slotted cable trunking | 8 | 12 | 18 | **228.90** |
| **TSL080060W** | 80 | 60 | grey | PVC slotted cable trunking | 8 | 12 | 14 | **297.15** |
| **TSL100060W** | 100 | 60 | grey | PVC slotted cable trunking | 8 | 12 | 12 | **343.35** |
| **TSL040080W** | 40 | 80 | grey | PVC slotted cable trunking | 8 | 12 | 20 | **226.80** |
| **TSL060080W** | 60 | 80 | grey | PVC slotted cable trunking | 8 | 12 | 12 | **281.40** |
| **TSL080080W** | 80 | 80 | grey | PVC slotted cable trunking | 8 | 12 | 8 | **331.80** |
| **TSL100080W** | 100 | 80 | grey | PVC slotted cable trunking | 8 | 12 | 8 | **387.45** |
| **TSL040100W** | 40 | 100 | grey | PVC slotted cable trunking | 8 | 12 | 16 | **322.35** |
| **TSL060100W** | 60 | 100 | grey | PVC slotted cable trunking | 8 | 12 | 12 | **338.10** |
| **TSL080100W** | 80 | 100 | grey | PVC slotted cable trunking | 8 | 12 | 8 | **393.75** |
| **TSL100100W** | 100 | 100 | grey | PVC slotted cable trunking | 8 | 12 | 8 | **434.70** |
| **Spare covers for above narrow and wide slotted trunking** | | | | | | | | |
| **TSM025** | 25 | – | grey | spare PVC trunking covers | – | – | 80 | **30.98** |
| **TSM040** | 40 | – | grey | spare PVC trunking covers | – | – | 80 | **37.17** |
| **TSM060** | 60 | – | grey | spare PVC trunking covers | – | – | 80 | **55.65** |
| **TSM080** | 80 | – | grey | spare PVC trunking covers | – | – | 80 | **74.55** |
| **TSM100** | 100 | – | grey | spare PVC trunking covers | – | – | 68 | **96.60** |
| **Trunking accessories** | | | | | | | | |
| **553415** | 84 | 14 | grey | sectionable cable retainer clip | | | *(10 pcs)* | **89.25** |

*For **VTC125 - wiring duct cutter,** see **M-Cable & Testing Tools***



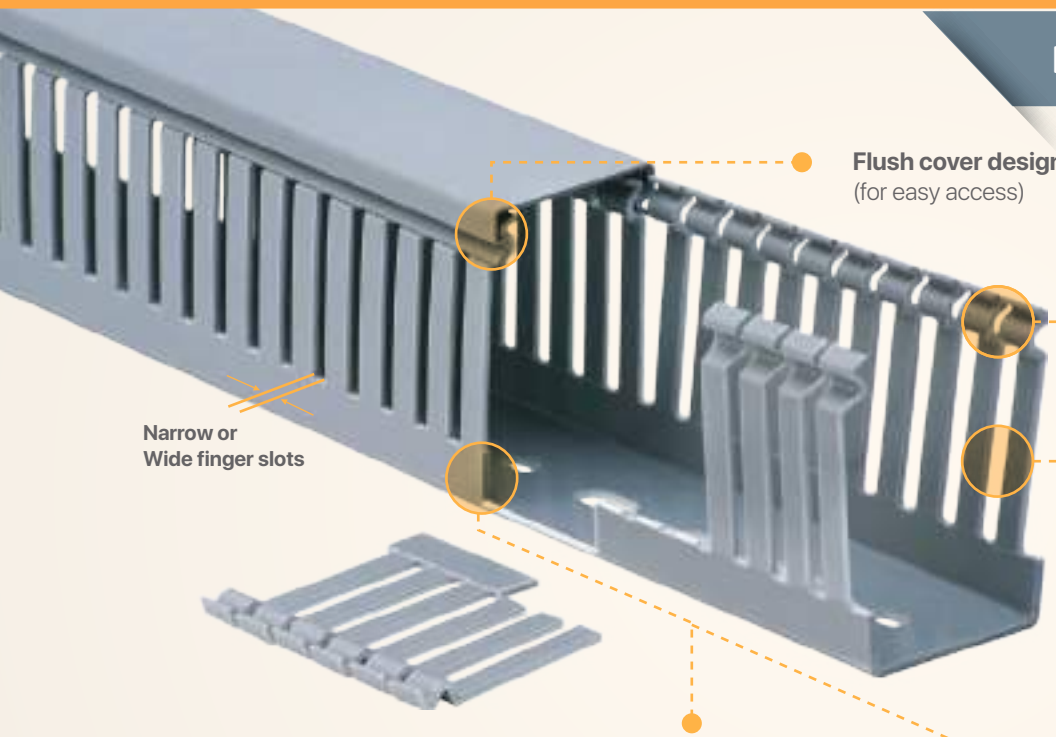
Above ZAR prices do not include VAT. E&OE

EZI CANAL
electrical cable ducting

# Narrow & Wide Slotted Trunking

## High impact, self-extinguishing, warp-proof rigid PVC

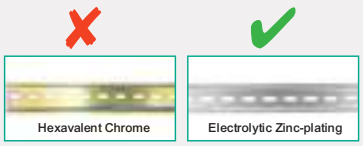
Keep it together the EZI way



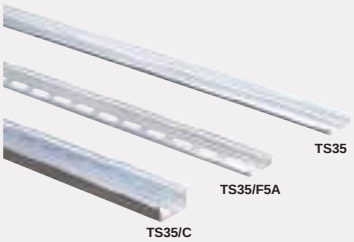

| Quick and easy to install | Enhances aesthetics and clarity | Provides complete electrical insulation |
|---|---|---|
| Simple open/close design for easy access to wiring. | Duct and cover form a flush sidewall to provide increased capacity. | UL94 flammability rating for excellent flame retardation. |

**15%**
OFF CARTON QUANTITIES

**15% off list price** for full carton quantities of TSL trunking.
**Add /B** to end of part number (e.g **TSL025040N/B**).



Other DIN rail | EM DIN rail
















## DIN mounting rail

Passivation process for Electro DIN rail does not contain hazardous substances and complies fully with RoHS directives 2002/95/EC. New **Electrolytic zinc-plating** treatment is far superior and fully replaces previous **Hexavalent chrome** treatment which contains Lead *(usually a "yellowish" finish)* now banned in most countries.

| type | rail | depth | description | | length | price |
|---|---|---|---|---|---|---|
| **Steel mounting rail** | EN 60715 | | | | | |
| • High quality, galvanic zinc plating - white passivation | | | "Cr VI free" fully **RoHS** compliant | | | |
| **Standard mounting rail** | | | 1 mm thick | | | |
| **TS35** | DIN 35 | 7.5 mm | standard DIN mounting rail | plain | 2 meter | **117.60** |
| **TS35/F5A*** | DIN 35 | 7.5 mm | standard DIN mounting rail | perforated | 2 meter | **115.50** |
| **TS35/SF6*** | DIN 35 | 10 mm | standard DIN mounting rail | perforated | 2 meter | **173.25** |
| **Heavy duty mounting rail** | | | 1.5 mm steel | | | |
| **TS35/C** | DIN 35 | 15 mm | HD standard DIN mounting rail | plain | 2 meter | **204.75** |
| **TS35/CF5A*** | DIN 35 | 15 mm | HD standard DIN mounting rail | perforated | 2 meter | **199.50** |
| * *Perforated - slot **F5A** = 18 x 5.2 mm / **F6** = 18 x 6.3 mm (25 mm between centres)* | | | | | | |
| **Stainless steel mounting rail (INOX)** | | | 1 mm thick | | | |
| • Perforated slot - 18 x 6.3 mm *(25 mm between centres)* | | | | | | |
| **TS35/F6 INOX** | DIN 35 | 7.5 mm | stainless steel DIN mounting rail | perforated | 2 meter | **527.10** |
| **Aluminium mounting rail** | | | 1.1 mm thick | | | |
| • Perforated slot - 20 x 4.8 mm *(35 mm between centres)* | | | | | | |
| **ADR1200/F5A** | DIN 35 | 7.5 mm | aluminium DIN mounting rail | perforated | 2 meter | **110.25** |
| **CUT-ADR** | DIN 35 | 7.5 mm | aluminium DIN rail cutter | *(for aluminium rail only)* | | **5 386.50** |

## Accessories for DIN rail

| type | rail | high | description | mounting hole | price |
|---|---|---|---|---|---|
| **TS-S M5** | bracket | 48 mm | angled stand-off DIN rail support bracket | M5 | **13.44** |
| **TST20** | bracket | 20 mm | steel support brackets for raising DIN rail | M6 | **17.54** |
| **TST30** | bracket | 30 mm | steel support brackets for raising DIN rail | M6 | **20.16** |
| **TST40** | bracket | 40 mm | steel support brackets for raising DIN rail | M6 | **23.31** |
| **TST50** | bracket | 50 mm | steel support brackets for raising DIN rail | M6 | **25.52** |
| **TST70** | bracket | 70 mm | steel support brackets for raising DIN rail | M6 | **33.71** |
| **FIX KLIP M4** | DIN 35 | – | M4 DIN rail mounting clip for components | M4 | **14.70** |
| **FIX KLIP M5** | DIN 35 | – | M5 DIN rail mounting clip for components | M5 | **14.70** |

**Category-M**

Made in Germany GLW Crimping Technology

## DIN rail cutter *(for steel mounting rail only)*

DIN rail is often cut by saw or angle grinder creating dust, noise, and a considerable risk of injury. **The RC200** is a high quality, professional DIN rail cutter designed for high output, offering "burr-free" precision cut and trim of standard DIN rails.

- Incorporates two cut profiles *(7.5 x 35 and 15 x 35 mm)* DIN rails
- Precision "burr-free" cut and trim of DIN rail to length without waste
- Increased work safety and quiet operation

| type | rail | for depth | description | | price |
|---|---|---|---|---|---|
| **RC200 DIN rail cutter** | | *for DIN 35 rail 7.5 and 15 mm deep* | | | |
| **008328** | cutter | 7.5 + 15 mm | DIN rail cutter *(2 profiles)* for 7.5/15 mm high x 35 mm rail | | *see **Cat M** for pricing.* |
| **Accessories for above RC200 DIN rail cutter** | | | | | |
| **009465** | scale | | metric scale plate and length stop for above DIN rail cutter | RC200 | |
| **009102** | clamp | | table clamp for above DIN rail cutter | RC200 | |

## Wiring duct cutter (professional) *with 1 meter graduated dimension rule + length stop*

For fast, accurate cutting of wiring ducts to length without burrs and with very little force

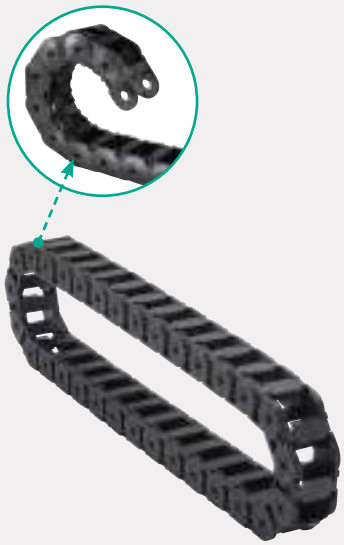
**VTC 125 wiring duct cutter** *(made in Italy)*

- Burr-free cut edges - No noise, no chips or dust
- Quick and easy cutting - ducts cut precisely to the millimetre

| | | | | |
|---|---|---|---|---|
| **VTC125** | trunking | 125 mm | precision slotted wiring duct *(trunking)* cutter | *all sizes* |



Above ZAR prices do not include VAT. E&OE



## HKP series - Cable carriers

Also known as *"drag chains, cable carriers, energy chains or cable tracks"*, are designed to surround and guide flexible cables connected to moving automated machinery - keeps cables neatly out of the way.

They reduce wear and stress on cables and hoses, prevent entanglement and improve operator safety. These chains move either in (*linear*): moving in a straight line or circular (*rotary*): moving in circular arcs.

Designed with an ideal bend radius, allows for smooth movement which assists to eliminates excessive wear and tear, reduces the need for cable replacements, and decreases the potential dangers of exposed wiring.

Supplied in **1 meter lengths** which can be connected to one another by internal/external connectors to make up any length requirement i.e. 1 meter can be connected and made longer by joining 2 x 1 meter lengths to make a 2 meters etc

**General features:**

- Open type
- Low noise
- High load resistance
- Chemical, water and temperature resistant
- Operating temperature: -25 / + 80 °C
- Supplied in 1 meter lengths *(extendable with connectors)*
- Multi-axis movement *(freely rotating between links)*
- Speed and acceleration *(specific speed, acceleration, as the case may be running)*
- Easy assembly and disassembly without threading, to the cable, tubing, pipe, pipe, etc.
- Corrosion resistance, ability or easily form into complex shapes, self-lubrication, and lower cost

**Typical applications:**

- Port cranes
- Machine tools
- Data centres
- Robotics
- Textile industries
- Green energy systems
- Process and automation equipment
- Vehicle transporters and washing systems



HKP015015R1A



HKP...ZDA



HKP020025R3A



HKP015015ZEA



HKP040060R5A



HKP020025ZEA



HKP040060ZKA

| type | internal dimensions height | width | bending radius | material | description | price |
|---|---|---|---|---|---|---|
| **15 x 15 mm cable carrier** | | | *1 meter length (extendable)* | | | |
| **HKP015015R1A** | 15 mm | 15 mm | 25 mm | plastic | open type cable carrier | **743.40** |
| **Mounting accessories** (for 15 x 15 cable carrier) | | | | | | |
| **HKP015015ZDA** | 15 mm | 15 mm | – | plastic | internal connection | **15.33** |
| **HKP015015ZEA** | 15 mm | 15 mm | – | plastic | external connection | **15.33** |
| **HKP015015ZKA** | 15 mm | 15 mm | – | plastic | upper cable retainer/cover | **7.67** |
| **20 x 25 mm cable carrier** | | | *1 meter length (extendable)* | | | |
| **HKP020025R3A** | 20 mm | 25 mm | 40 mm | plastic | open type cable carrier | **599.55** |
| **Mounting accessories** (for 20 x 25 cable carrier) | | | | | | |
| **HKP020025ZDA** | 20 mm | 25 mm | – | plastic | internal connection | **22.05** |
| **HKP020025ZEA** | 20 mm | 25 mm | – | plastic | external connection | **22.05** |
| **HKP020025ZKA** | 20 mm | 25 mm | – | plastic | upper cable retainer/cover | **8.51** |
| **40 x 60 mm cable carrier** | | | *1 meter length (extendable)* | | | |
| **HKP040060R5A** | 40 mm | 60 mm | 100 mm | plastic | open type cable carrier | **890.40** |
| **Mounting accessories** (for 40 x 60 cable carrier) | | | | | | |
| **HKP040060ZDA** | 40 mm | 60 mm | – | plastic | internal connection | **48.30** |
| **HKP040060ZEA** | 40 mm | 60 mm | – | plastic | external connection | **48.30** |
| **HKP040060ZKA** | 40 mm | 60 mm | – | plastic | upper cable retainer/cover | **11.03** |
| **HKP040060Z5A** | 40 mm | – | – | plastic | internal cable separator | **17.00** |



LH-M...


LH-M...



6453XE


LH-MP-12/3MB


LH-SC-M5B


5406C

## Cable ties *(standard)*

Standard cable ties are produced exclusively in Polyamide 6.6 (Halogen-free)

Installation temperature: -10°...+85°C  Flammability rating: UL 94 class V2

Approvals: UL62275 (E258930), TUV EN62275:2015, Reach, RoHS, PAHs compliance

| type | dimensions (mm) length | dimensions (mm) width | colour | bundle Ø max. (mm) | tensile strength | description | pack qty | price *(per pack)* |
|---|---|---|---|---|---|---|---|---|
| **Standard cable ties** *(black)* | | | | | | | | |
| Black cable ties have additional carbon black providing a UV resistance for outdoor applications. | | | | | | | | |
| **LH-M-100B** | 100 | 2.5 | black | 21 mm | 80 N | standard cable tie | 100 | **13.86** |
| **LH-M-150B** | 150 | 2.5 | black | 36 mm | 80 N | standard cable tie | 100 | **21.21** |
| **LH-I-150B** | 150 | 3.6 | black | 36 mm | 180 N | standard cable tie | 100 | **33.39** |
| **LH-I-250B** | 250 | 3.6 | black | 68 mm | 180 N | standard cable tie | 100 | **56.70** |
| **LH-I-370B** | 370 | 3.6 | black | 106 mm | 180 N | standard cable tie | 100 | **82.95** |
| **LH-S-200B** | 200 | 4.8 | black | 50 mm | 230 N | standard cable tie | 100 | **57.75** |
| **LH-S-300B** | 300 | 4.8 | black | 81 mm | 230 N | standard cable tie | 100 | **91.35** |
| **LH-S-390B** | 390 | 4.8 | black | 110 mm | 230 N | standard cable tie | 100 | **127.05** |
| **LH-HD-380B** | 380 | 7.6 | black | 108 mm | 540 N | standard cable tie | 100 | **229.95** |
| **LH-HD-550B** | 550 | 7.6 | black | 162 mm | 540 N | standard cable tie | 100 | **367.50** |
| **LH-HSD-530B** | 530 | 12.4 | black | 156 mm | 1200 N | standard cable tie | 100 | **681.45** |
| **Standard cable ties natural colour** *(white)* | | | | | | | | |
| **LH-M-100N** | 100 | 2.5 | natural | 21 mm | 80 N | standard cable tie | 100 | **13.86** |
| **LH-I-150N** | 150 | 3.6 | natural | 36 mm | 180 N | standard cable tie | 100 | **33.39** |
| **LH-I-250N** | 250 | 3.6 | natural | 80 mm | 180 N | standard cable tie | 100 | **56.70** |
| **LH-S-390N** | 390 | 4.8 | natural | 110 mm | 230 N | standard cable tie | 100 | **127.05** |
| **UV resistant cable ties** *made with special additives ensuring extra resistance to UV rays* | | | | | | | | |
| • Excellent resistance to UV rays • Suitable for PV photovoltaic installations | | | | | | | | |
| **LH-M-100UV** | 100 | 2.5 | black | 21 mm | 80 N | UVE cable tie | 100 | **16.28** |
| **LH-I-150UV** | 150 | 3.6 | black | 35 mm | 180 N | UVE cable tie | 100 | **39.90** |
| **LH-S-200UV** | 200 | 4.8 | black | 50 mm | 230 N | UVE cable tie | 100 | **71.40** |
| **LH-S-300UV** | 300 | 4.8 | black | 79 mm | 230 N | UVE cable tie | 100 | **112.35** |
| **LH-HD-380UV** | 380 | 7.6 | black | 100 mm | 540 N | UVE cable tie | 100 | **278.25** |
| **Belturing plus heavy duty cable ties** Halogen-free Ideal for photovoltaic installations | | | | | | | | |
| • Highly resistant to climatic conditions *(including sea areas)* Excellent resistance to UV rays Produced with special techno-polymer providing exceptional UV resistance according to norm CEI EN 62275 (ISO 4892-2). Recommended for outdoor applications and prolonged UV exposure. | | | | | | | | |
| **6450XE** | 180 | 6 | black | 45 mm | 280 N | single head lock | 100 | **248.85** |
| **6454XE** | 360 | 6 | black | 100 mm | 280 N | single head lock | 100 | **661.50** |
| **LH-E-HD-265B** | 265 | 9 | black | 62 mm | 540 N | double head lock | 100 | **364.35** |
| **LH-E-HD-360B** | 360 | 9 | black | 93 mm | 540 N | double head lock | 100 | **469.35** |

## Cable tie supports

| type | max. tie width | hole Ø (mm) | colour | tensile strength | dimensions (mm) (H) | (W) | (D) | pack qty | price *(per pack)* |
|---|---|---|---|---|---|---|---|---|---|
| **Adhesive tie mounts** *(fixing with self-adhesive backing or screw)* | | | | | | | | | |
| **LH-MP-12/3MB** | 3.6 mm | M3 | black | 88 kg | 12.5 | 12.5 | 5.0 | 100 | **51.45** |
| **LH-MP-20/3MB** | 3.6 mm | M4 | black | 88 kg | 19 | 19 | 5.0 | 100 | **73.50** |
| **LH-MP-30/3MB** | 4.8 mm | M4 | black | 110 kg | 28 | 28 | 6.5 | 100 | **140.70** |
| **LH-MP-40/3MB** | 9.0 mm | M5 | black | 380 kg | 40 | 40 | 8.5 | 100 | **300.30** |
| **LH-MP-20/3MN** | 3.6 mm | M4 | natural | 88 kg | 19 | 19 | 5.0 | 100 | **73.50** |
| **LH-MP-30/3MN** | 4.8 mm | M4 | natural | 110 kg | 28 | 28 | 6.5 | 100 | **140.70** |

***Note:*** *for correct application of the self-adhesive mount, surfaces must be thoroughly cleaned and degreased with solvent (alcohol or similar cleaning product)*

**Cradles** *(screw down)* ideal for fixing cables and pipes in civil and industrial applications

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **LH-SC-M3SB** | 3.6 mm | M3 | black | 88 kg | 15 | 9.6 | 6.85 | 100 | **54.60** |
| **LH-SC-M3B** | 4.8 mm | M4 | black | 110 kg | 17.8 | 12.7 | 8.15 | 100 | **57.75** |
| **LH-SC-M4B** | 7.6 mm | M4 | black | 260 kg | 22.3 | 16 | 9.65 | 100 | **97.65** |
| **LH-SC-M5B** | 9.0 mm | M5 | black | 380 kg | 25.4 | 16 | 10.8 | 100 | **127.05** |

## Tensioning tools for cable ties

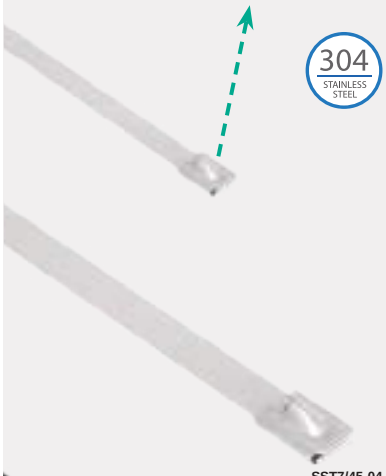
• Metal tool for tensioning cable ties with incorporated cable tie cutting device.

| | | | | |
|---|---|---|---|---|
| **5406C** | 3.5 - 12.5 | metal tensioning and cutting tool for cable ties | 1 | **380.10** |



Above ZAR prices do not include VAT. E&OE





SST7/45-04



SSTP7/40-16


SSM1089-04


SSM1089-16



SSM1089-04/PS


HS-600

**Cable ties** *(stainless steel)*

For use in critical applications where strength, corrosion, radiation, vibration and temperature extremes are a factor. Unique ball locking mechanism permits simple, rapid installation and secure locking in any position. High tensile strength, non flammability, UV-resistant, high resistance to acids and corrosion for a strong durable solution to bundling and mechanical fastening in harsh environments.

- Self-locking head design speeds installation and locks at any length along the tie body
- Smooth surface, rounded edges assure cable protection and worker safety

| type | length (mm) | wide (mm) | thick (mm) | AISI | bundle Ø max. | description | price per (100) |
|---|---|---|---|---|---|---|---|
| **AISI 304 stainless steel** | | | | | | for general purpose applications | |
| Working temperature: | | -60°C – +550°C | | | | | |
| **Metallic band and buckle** | | | | | | | |
| **SST4/15-04** | 150 | 4.6 | 0.25 | 304 | 37 mm | stainless steel cable ties | **232.05** |
| **SST4/25-04** | 250 | 4.6 | 0.25 | 304 | 63 mm | stainless steel cable ties | **254.10** |
| **SST4/35-04** | 350 | 4.6 | 0.25 | 304 | 89 mm | stainless steel cable ties | **306.60** |
| **SST4/45-04** | 450 | 4.6 | 0.25 | 304 | 115 mm | stainless steel cable ties | **336.00** |
| **SST4/55-04** | 550 | 4.6 | 0.25 | 304 | 141 mm | stainless steel cable ties | **410.55** |
| **SST7/25-04** | 250 | 7.9 | 0.25 | 304 | 63 mm | stainless steel cable ties | **350.70** |
| **SST7/45-04** | 450 | 7.9 | 0.25 | 304 | 115 mm | stainless steel cable ties | **470.40** |
| **SST7/60-04** | 600 | 7.9 | 0.25 | 304 | 154 mm | stainless steel cable ties | **597.45** |
| **SST7/80-04** | 800 | 7.9 | 0.25 | 304 | 193 mm | stainless steel cable ties | **723.45** |
| **AISI 316 stainless steel - Epoxy coated** | | | | | | for extra corrosive environments | |
| • Black band with metallic buckle<br>• Coated band with non-toxic, Halogen free polyester coating<br>• Provides additional edge protection, prevents corrosion between dissimilar materials | | | | | | | |
| **SSTP4/20-16** | 200 | 4.6 | 0.36 | 316 | 50 mm | stainless steel cable ties | **417.90** |
| **SSTP4/30-16** | 300 | 4.6 | 0.36 | 316 | 76 mm | stainless steel cable ties | **507.15** |
| **SSTP4/40-16** | 400 | 4.6 | 0.36 | 316 | 102 mm | stainless steel cable ties | **634.20** |
| **SSTP4/50-16** | 500 | 4.6 | 0.36 | 316 | 128 mm | stainless steel cable ties | **731.85** |
| **SSTP7/30-16** | 300 | 7.9 | 0.36 | 316 | 76 mm | stainless steel cable ties | **657.30** |
| **SSTP7/40-16** | 400 | 7.9 | 0.36 | 316 | 102 mm | stainless steel cable ties | **806.40** |
| **SSTP7/60-16** | 600 | 7.9 | 0.36 | 316 | 154 mm | stainless steel cable ties | **1 113.00** |
| **SSTP7/80-16** | 800 | 7.9 | 0.36 | 316 | 193 mm | stainless steel cable ties | **1 407.00** |
| **Marking tags - Stainless steel** | | | | | | *(cable tie max. width 4.6 mm)* | |
| Stainless steel tie-on tags for permanent identification of cables, conduits, pipes in arduous applications where high resistance to aggressive environments is essential. | | | | | | | *(per 100)* |
| **AISI 304 stainless steel** | | | | | | | |
| **SSM1089-04** | 89 | 9.5 | 0.40 | 304 | – | stainless steel marking tags | **164.85** |
| **SSM1989-04** | 89 | 19 | 0.40 | 304 | – | stainless steel marking tags | **239.40** |
| **AISI 316 stainless steel** | | | | | | | |
| **SSM1089-16** | 89 | 9.5 | 0.40 | 316 | – | stainless steel marking tags | **186.90** |
| **SSM1989-16** | 89 | 19 | 0.40 | 316 | – | stainless steel marking tags | **290.85** |

**Custom laser engraved stainless steel tags**

Custom laser marking of tags and cable ties. Upper/lower case characters, detailed marking, text and graphics, high quality, crisp, clean and permanent.

- Once laser engraved the inscription remains with the product for life

| | | | | | | |
|---|---|---|---|---|---|---|
| **SSM1089-04/PS*** | 89 | 9.5 | 0.40 | 304 | price per tag | **21.00** |
| **SSM1989-04/PS❖** | 89 | 19 | 0.40 | 304 | | **21.00** |
| **SSM1089-16/PS*** | 89 | 9.5 | 0.40 | 316 | | **21.00** |
| **SSM1989-16/PS❖** | 89 | 19 | 0.40 | 316 | | **21.00** |

*(each)*

* ***Print area:*** *L:79 x W:8.5* – ❖***Print area:*** *L:79 x W:18*

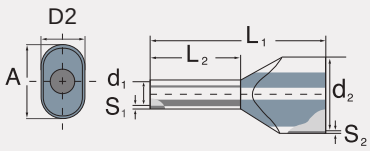
*Please provide detailed information on required laser engraving of tags when ordering.*

**Accessories** *(cable tie gun)*

- Tensioning tool *(with auto cut)* for all above stainless steel cable ties
- Adjustable tension value - *(4 settings)*

*(each)*

**HS-600** tensioning and cutting tool for 4.6 and 7.9 mm SS cable ties **3 958.50**




## Ferrules / Wire end sleeves *(Insulated)*

- Material: Tin-plated copper *(min.thickness 3µ)* / polypropylene collar
- CSA certified (certificate 2110332)
- DIN 46228 part 4, CSA C22.2 No. 65-93, 188-M1983

### Wire end sleeves with insulating collar


Crimped ferrule



- Supplied in mini bags on a strip *(10 x 100 pcs)*. bags can be torn from strip individually

| type | wire size mm² | colour | dimensions (mm) L1 | L2[1)] | D1 | S1 | D2 | D3 | S2 | pack qty | price per pack |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **005606** | 0.50 | white | 14.0 | 8.0 | 1.1 | 0.15 | 2.4 | – | 0.30 | 100 | **26.88** |
| **005644** | 0.75 | blue | 14.0 | 8.0 | 1.3 | 0.15 | 2.7 | – | 0.30 | 100 | **27.20** |
| **005718*** | 1.0 | red | 14.0 | 8.0 | 1.5 | 0.15 | 3.3 | – | 0.30 | 100 | **27.62** |
| **005738*** | 1.0 | red | 16.0 | 10.0 | 1.5 | 0.15 | 3.3 | – | 0.30 | 100 | **39.59** |
| **005765*** | 1.5 | black | 14.0 | 8.0 | 1.8 | 0.15 | 3.7 | – | 0.30 | 100 | **27.93** |
| **005791*** | 1.5 | black | 16.0 | 10.0 | 1.8 | 0.15 | 3.7 | – | 0.30 | 100 | **41.37** |
| **005808** | 2.5 | grey | 15.0 | 8.0 | 2.3 | 0.15 | 4.1 | – | 0.30 | 100 | **39.17** |
| **005829** | 2.5 | grey | 17.0 | 10.0 | 2.3 | 0.15 | 4.1 | – | 0.30 | 100 | **54.60** |
| **005831*** | 2.5 | grey | 18.0 | 10.0 | 2.3 | 0.15 | 4.7 | – | 0.30 | 100 | **55.65** |
| **005851** | 4.0 | orange | 18.0 | 10.0 | 2.9 | 0.20 | 4.7 | – | 0.30 | 100 | **57.75** |
| **007739*** | 4.0 | grey | 18.0 | 10.0 | 2.9 | 0.20 | 6.1 | – | 0.30 | 100 | **57.75** |
| **005871** | 6.0 | green | 20.0 | 12.0 | 3.6 | 0.20 | 6.1 | – | 0.30 | 100 | **79.80** |
| **005896** | 10.0 | brown | 21.0 | 12.0 | 4.6 | 0.20 | 7.4 | – | 0.40 | 100 | **99.75** |
| **005917** | 16.0 | white | 23.0 | 12.0 | 6.0 | 0.20 | 8.6 | – | 0.50 | 100 | **142.80** |
| **005950** | 25.0 | black | 29.0 | 16.0 | 7.5 | 0.20 | 10.9 | – | 0.50 | 50 | **147.00** |
| **005968** | 35.0 | red | 30.0 | 16.0 | 8.5 | 0.20 | 12.3 | – | 0.50 | 50 | **164.85** |
| **005980** | 50.0 | blue | 36.0 | 20.0 | 10.5 | 0.30 | 14.8 | – | 0.60 | 50 | **366.45** |
| **005988** | 70.0 | yellow | 37.0 | 20.0 | 12.7 | 0.40 | 15.8 | – | 0.60 | 25 | **262.50** |
| **005990** | 95.0 | red | 44.0 | 25.0 | 14.7 | 0.40 | 17.7 | – | 0.60 | 25 | **490.35** |
| **005915** | 120.0 | blue | 48.0 | 27.0 | 16.7 | 0.50 | 20.7 | – | 0.70 | 25 | **598.50** |
| **005916** | 150.0 | yellow | 58.0 | 32.0 | 18.7 | 0.50 | 22.6 | – | 1.00 | 25 | **700.35** |

* *Broader collar to accommodate wires with thicker insulation*

### Twin wire end sleeves with insulating collar *(accepts two cables)*



- Accepts two wires into one insulated end sleeve
- Supplied in mini bags on a strip *(10 x 100 pcs)*. bags can be torn from strip individually

| type | wire size (mm²) | colour | dimensions (mm) L1 | L2[1)] | D1 | S1 | D2 | A | S2 | pack qty | price per pack |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **005613** | 2 x 0.5 | white | 15.0 | 8.0 | 1.5 | 0.15 | 2.4 | 4.6 | 0.30 | 100 | **47.25** |
| **005653** | 2 x 0.75 | blue | 15.0 | 8.0 | 1.8 | 0.15 | 2.7 | 5.4 | 0.30 | 100 | **50.40** |
| **005722** | 2 x 1.0 | red | 15.0 | 8.0 | 2.1 | 0.15 | 3.3 | 5.3 | 0.30 | 100 | **60.90** |
| **005740** | 2 x 1.0 | red | 17.0 | 10.0 | 2.1 | 0.15 | 3.3 | 5.3 | 0.30 | 100 | **84.00** |
| **005770** | 2 x 1.5 | black | 16.0 | 8.0 | 2.3 | 0.15 | 3.5 | 6.5 | 0.30 | 100 | **63.00** |
| **005794** | 2 x 1.5 | black | 20.0 | 12.0 | 2.3 | 0.15 | 3.5 | 6.5 | 0.30 | 100 | **81.90** |
| **005816** | 2 x 2.5 | grey | 19.0 | 10.0 | 2.9 | 0.20 | 4.1 | 7.7 | 0.40 | 100 | **87.15** |
| **005853** | 2 x 4.0 | orange | 23.0 | 12.0 | 3.8 | 0.20 | 4.9 | 8.7 | 0.40 | 100 | **177.45** |
| **005873** | 2 x 6.0 | green | 25.0 | 14.0 | 4.9 | 0.20 | 6.1 | 9.9 | 0.40 | 100 | **224.70** |
| **005898** | 2 x 10.0 | brown | 26.0 | 14.0 | 6.5 | 0.20 | 7.1 | 12.9 | 0.50 | 100 | **322.35** |
| **005921** | 2 x 16.0 | white | 31.0 | 16.0 | 8.5 | 0.20 | 9.8 | 16.8 | 0.60 | 50 | **236.25** |

### Wire end sleeves with insulating collar supplied in belt strips

Wire end sleeves in belt form *(K reels)*, for use in automatic cable preparation machines *(see page* **M-4***)*
Reel/cassette simply clips onto machines *(500/1000 terminals per reel)*


MC 25


005649

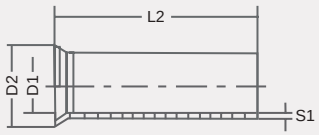
- Tape mounted supplied in type K box dispenser (box size = 150 x 150 x 18 mm)
- **MC 25** - Wire stripping and crimping done in one operation using belt strip ferrules in type K box dispensers,controlled by a sophisticated cam mechanism achieving a stable working process.

| type | wire size (mm²) | colour | dimensions (mm) L1 | L2[1)] | D1 | S1 | D2 | centre | S2 | reel qty | price per reel |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **005611** | 0.50 | white | 14.5 | 8.0 | 1.1 | 0.15 | 2.6 | 3.5 | 0.25 | 1000 | **498.75** |
| **005649** | 0.75 | blue | 14.5 | 8.0 | 1.3 | 0.15 | 2.7 | 3.6 | 0.25 | 1000 | **505.05** |
| **005720** | 1.0 | red | 14.5 | 8.0 | 1.5 | 0.15 | 3.0 | 3.9 | 0.30 | 1000 | **508.20** |
| **005767** | 1.5 | black | 14.5 | 8.0 | 1.8 | 0.15 | 3.2 | 4.2 | 0.30 | 1000 | **513.45** |
| **005813** | 2.5 | grey | 14.5 | 8.0 | 2.3 | 0.15 | 4.1 | 5.0 | 0.30 | 500 | **313.95** |

[1)] *Other lengths available on request*



Above ZAR prices do not include VAT. E&OE




## Ferrules / Wire end sleeves *(uninsulated)*

Uninsulated ferrule prevents wire strands from fraying and breaking and is extremely cost-effective. Its shorter length and uninsulated body offer advantages when making terminations in printed circuit board terminal blocks and in other terminal blocks with smaller clamps or narrow widths.

**General features:**

- Material: Tin-plated copper (*min.thickness 3µ*)
- CSA certified (*certificate 2110332*)
- DIN 46228 part 4, CSA C22.2 No. 65-93, 188-M1983
- Supplied in standard bulk pack quantity *(size dependant)*



| type | wire size (mm²) | | dimensions (mm) L2[1] | D1 | D2 | S1 | description | pack qty | price per pack |
|---|---|---|---|---|---|---|---|---|---|
| **Uninsulated wire end sleeve** *(cord end / bootlace terminals)* | | | | | | | | | |
| **006010** | 0.50 | – | 10.0 | 1.0 | 2.1 | 0.15 | uninsulated ferrules | 1000 | **215.25** |
| **006015** | 0.75 | – | 10.0 | 1.2 | 2.3 | 0.15 | uninsulated ferrules | 1000 | **221.55** |
| **006022** | 1.0 | – | 10.0 | 1.4 | 2.5 | 0.15 | uninsulated ferrules | 1000 | **225.75** |
| **006031** | 1.5 | – | 10.0 | 1.7 | 2.8 | 0.15 | uninsulated ferrules | 1000 | **244.65** |
| **006045** | 2.5 | – | 12.0 | 2.2 | 3.4 | 0.15 | uninsulated ferrules | 1000 | **340.20** |
| **006053** | 4.0 | – | 12.0 | 2.8 | 4.0 | 0.2 | uninsulated ferrules | 1000 | **458.85** |
| **006060** | 6.0 | – | 12.0 | 3.5 | 4.7 | 0.2 | uninsulated ferrules | 1000 | **448.35** |
| **006068** | 10.0 | – | 12.0 | 4.5 | 5.8 | 0.2 | uninsulated ferrules | 500 | **340.20** |
| **006079** | 16.0 | – | 12.0 | 5.8 | 7.5 | 0.2 | uninsulated ferrules | 250 | **190.05** |
| **006091** | 25.0 | – | 15.0 | 7.3 | 9.5 | 0.2 | uninsulated ferrules | 100 | **149.10** |
| **006098** | 35.0 | – | 18.0 | 8.3 | 11.0 | 0.2 | uninsulated ferrules | 100 | **200.55** |
| **006102** | 50.0 | – | 18.0 | 10.3 | 13.0 | 0.3 | uninsulated ferrules | 100 | **374.85** |
| **006107** | 70.0 | – | 25.0 | 12.5 | 15.0 | 0.4 | uninsulated ferrules | 100 | **819.00** |
| **006109** | 95.0 | – | 25.0 | 14.5 | 17.0 | 0.4 | uninsulated ferrules | 50 | **532.35** |
| **006075** | 120.0 | – | 32.0 | 16.5 | 19.0 | 0.5 | uninsulated ferrules | 50 | **741.30** |

*Available in smaller (from 0.25 mm²) and larger wire sizes (up to 240 mm²)*

[1] *Other lengths available on request*

**Category-M**

made in Sweden **pressmaster**



4300-4661

### Crimping tools for wire end sleeves

| type | for terminals | conductor (mm²) | cable entry | description | price |
|---|---|---|---|---|---|
| **Pressmaster - Professional self-adjusting crimping tool** | | | | | |

- High precision die geometry for a clearly defined square crimp shape of the ferrule
- Automatic self-adjustment to required wire size

| | | | | | |
|---|---|---|---|---|---|
| **4300-4661** | ferrules | 0.14…10 | side | professional self-adjusting crimping tool | |

**Mobile frame system - with interchangeable dies for various terminals**

Lightweight, compact ratchet crimp tool designed for most types of mechanical, electrical and electronic connectors. Easily interchangeable crimp dies are kept together with a special pin to simplify handling.

- Reliable crimping performance consistent and accurate with a parallel action stroke.
- Easy-access release for fast, simple exchange of crimp dies *(no special tools required)*

| | | | | | |
|---|---|---|---|---|---|
| **4300-3149** | die dependant | | side | MCT frame only for interchangeable dies | *see **Cat M** for pricing.* |



4300-3129

4300-3149

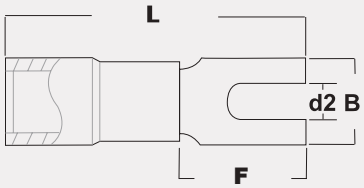
**Interchangeable die sets for above tool frame**

- A wide range of crimp dies to cover all applications in just one tool frame.
- Dies are kept in pairs and delivered in a modular reusable box.

| | | | | |
|---|---|---|---|---|
| **4300-3129** | insulated | 0.5 to 4 | side | red/blue insulated terminal crimping die set |
| **4300-3128** | insulated | 4 to 6 | side | yellow insulated terminal crimping die set |
| **4300-3137** | uninsulated | 0.75 to 2.5 | side | cable lug crimping die set |
| **4300-3139** | uninsulated | 4 to 10 | side | cable lug crimping die set |
| **4300-3127** | end sleeves | 0.25 to 10 | side | wire end sleeve crimping die set |
| **4300-3153** | end sleeves | 16 to 25 | side | wire end sleeve crimping die set |
| **4300-3154** | end sleeves | 35 to 50 | side | wire end sleeve crimping die set |
| **4300-3146** | open barrel | 0.5 to 6 | side | open barrel connector crimping die set |
| **4300-3136** | coaxial | RG58/59/62/71 | side | coaxial connector crimping die set |

*Consult the category **M-Tools** section of our catalogue for hydraulic crimpers and die sets*

## Pre-insulated terminals





R1...


R2...


R5...


S1...


S2...


S5...


PT...


BB...

- Maximum electrical rating: 600V
- Operating temperature: 105°C
- Material: Terminal: Copper *(tin plated)*
  Insulation: Vinyl (PVC)

| type | colour | wire size mm² | description | dimensions (mm) d2 | B | L | pack qty | price |
|---|---|---|---|---|---|---|---|---|
| **Ring terminals** | | | | | | | | |
| **R1-3V** | red | 0.5 - 1.5 | insulated ring lug | 3.2 | 5.5 | 16.7 | 100 | **88.20** |
| **R1-3.5MV** | red | 0.5 - 1.5 | insulated ring lug | 3.7 | 5.5 | 16.7 | 100 | **102.90** |
| **R1-4SV** | red | 0.5 - 1.5 | insulated ring lug | 4.3 | 6.6 | 19.6 | 100 | **100.80** |
| **R1-4LV** | red | 0.5 - 1.5 | insulated ring lug | 4.3 | 8.0 | 21.0 | 100 | **113.40** |
| **R1-5V** | red | 0.5 - 1.5 | insulated ring lug | 5.3 | 8.0 | 21.0 | 100 | **103.95** |
| **R1-6V** | red | 0.5 - 1.5 | insulated ring lug | 6.5 | 11.6 | 26.8 | 100 | **159.60** |
| **R1-8V** | red | 0.5 - 1.5 | insulated ring lug | 8.4 | 11.6 | 26.8 | 100 | **159.60** |
| **R1-10V** | red | 0.5 - 1.5 | insulated ring lug | 10.5 | 13.6 | 30.7 | 100 | **171.15** |
| **R1-12V** | red | 0.5 - 1.5 | insulated ring lug | 13 | 19.2 | 35.6 | 100 | **297.15** |
| **R2-3V** | blue | 1.5 - 2.5 | insulated ring lug | 3.2 | 6.4 | 17.5 | 100 | **107.10** |
| **R2-3.5MV** | blue | 1.5 - 2.5 | insulated ring lug | 3.7 | 6.4 | 17.5 | 100 | **116.55** |
| **R2-4SV** | blue | 1.5 - 2.5 | insulated ring lug | 4.3 | 6.6 | 19.5 | 100 | **108.15** |
| **R2-4LV** | blue | 1.5 - 2.5 | insulated ring lug | 4.3 | 8.5 | 22.0 | 100 | **147.00** |
| **R2-5SV** | blue | 1.5 - 2.5 | insulated ring lug | 5.3 | 8.5 | 22.0 | 100 | **129.15** |
| **R2-6V** | blue | 1.5 - 2.5 | insulated ring lug | 6.5 | 12.0 | 27.0 | 100 | **187.95** |
| **R2-8V** | blue | 1.5 - 2.5 | insulated ring lug | 8.4 | 12.0 | 27.0 | 100 | **185.85** |
| **R2-10V** | blue | 1.5 - 2.5 | insulated ring lug | 10.5 | 13.6 | 30.7 | 100 | **199.50** |
| **R2-12V** | blue | 1.5 - 2.5 | insulated ring lug | 13 | 19.2 | 35.6 | 100 | **308.70** |
| **R5-3V** | yellow | 4.0 - 6.0 | insulated ring lug | 3.2 | 7.2 | 22.0 | 100 | **198.45** |
| **R5-3.5SV** | yellow | 4.0 - 6.0 | insulated ring lug | 3.7 | 7.2 | 22.0 | 100 | **198.45** |
| **R5-4SV** | yellow | 4.0 - 6.0 | insulated ring lug | 4.3 | 7.2 | 25.5 | 100 | **192.15** |
| **R5-4LV** | yellow | 4.0 - 6.0 | insulated ring lug | 4.3 | 9.5 | 25.5 | 100 | **248.85** |
| **R5-5V** | yellow | 4.0 - 6.0 | insulated ring lug | 5.3 | 9.5 | 25.5 | 100 | **232.05** |
| **R5-6V** | yellow | 4.0 - 6.0 | insulated ring lug | 6.5 | 12.0 | 29.0 | 100 | **277.20** |
| **R5-8V** | yellow | 4.0 - 6.0 | insulated ring lug | 8.4 | 15.0 | 33.7 | 100 | **342.30** |
| **R5-10V** | yellow | 4.0 - 6.0 | insulated ring lug | 10.5 | 15.0 | 33.7 | 100 | **342.30** |
| **R5-12V** | yellow | 4.0 - 6.0 | insulated ring lug | 13.0 | 9.2 | 38.1 | 100 | **423.15** |
| **Fork / Spade terminals** | | | | | | | | |
| **S1-3V** | red | 0.5 - 1.5 | insulated fork lug | 3.2 | 5.8 | 21.0 | 100 | **97.65** |
| **S1-3.5SV** | red | 0.5 - 1.5 | insulated fork lug | 3.7 | 5.8 | 21.0 | 100 | **95.55** |
| **S1-3.5MV** | red | 0.5 - 1.5 | insulated fork lug | 3.7 | 6.4 | 20.6 | 100 | **98.70** |
| **S1-4SV** | red | 0.5 - 1.5 | insulated fork lug | 4.3 | 6.4 | 20.6 | 100 | **95.55** |
| **S1-4MV** | red | 0.5 - 1.5 | insulated fork lug | 4.3 | 7.2 | 21.0 | 100 | **105.00** |
| **S1-5SV** | red | 0.5 - 1.5 | insulated fork lug | 5.3 | 8.0 | 21.0 | 100 | **112.35** |
| **S1-6SV** | red | 0.5 - 1.5 | insulated fork lug | 6.5 | 9.5 | 21.0 | 100 | **117.60** |
| **S2-3V** | blue | 1.5 - 2.5 | insulated fork lug | 3.2 | 5.8 | 21.0 | 100 | **116.55** |
| **S2-3.5SV** | blue | 1.5 - 2.5 | insulated fork lug | 3.7 | 5.8 | 21.0 | 100 | **115.50** |
| **S2-3.5MV** | blue | 1.5 - 2.5 | insulated fork lug | 3.7 | 6.4 | 21.0 | 100 | **116.55** |
| **S2-4SV** | blue | 1.5 - 2.5 | insulated fork lug | 4.3 | 6.4 | 21.0 | 100 | **113.40** |
| **S2-4LV** | blue | 1.5 - 2.5 | insulated fork lug | 4.3 | 8.5 | 22.0 | 100 | **138.60** |
| **S2-5SV** | blue | 1.5 - 2.5 | insulated fork lug | 5.3 | 8.5 | 22.0 | 100 | **133.35** |
| **S2-6SV** | blue | 1.5 - 2.5 | insulated fork lug | 6.5 | 9.5 | 22.0 | 100 | **137.55** |
| **S5-4SV** | yellow | 4.0 - 6.0 | insulated fork lug | 4.3 | 8.5 | 25.2 | 100 | **220.50** |
| **S5-5V** | yellow | 4.0 - 6.0 | insulated fork lug | 5.3 | 9.5 | 25.2 | 100 | **220.50** |
| **S5-6SV** | yellow | 4.0 - 6.0 | insulated fork lug | 6.5 | 9.5 | 25.2 | 100 | **210.00** |
| **Pin terminals** | | | | | | | | |
| **PT1-10V** | red | 0.5 - 1.5 | insulated pin lug | 1.9 | 10.5 | 20.5 | 100 | **111.30** |
| **PT2-10V** | blue | 1.5 - 2.5 | insulated pin lug | 1.9 | 10.5 | 20.5 | 100 | **124.95** |
| **PT2-12V** | blue | 1.5 - 2.5 | insulated pin lug | 1.9 | 12.5 | 22.5 | 100 | **139.65** |
| **PT5-13V** | yellow | 4.0 - 6.0 | insulated pin lug | 2.8 | 13.7 | 26.2 | 100 | **265.65** |
| **Ferrule / butt connector** | | | | | | | | |
| **BB1V** | red | 0.5 - 1.5 | insulated ferrule | 1.7 | – | 26.0 | 100 | **97.65** |
| **BB2V** | blue | 1.5 - 2.5 | insulated ferrule | 2.3 | – | 26.0 | 100 | **114.45** |
| **BB5V** | yellow | 4.0 - 6.0 | insulated ferrule | 2.3 | – | 26.0 | 100 | **197.40** |



Above ZAR prices do not include VAT. E&OE


BT...

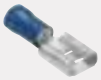



LB...




F1-...


F1-6.4VQD


F2-...


F2-6.4VQD


F5-...


F5-6.4VQD


M1...


M2...


M5...

| type | colour | wire size mm² | description | dimensions (mm) d2 | B | L | pack qty | price |
|---|---|---|---|---|---|---|---|---|
| **Flat-blade terminal** | | | | | | | | |
| **BT1-10V** | red | 0.5 - 1.5 | insulated flat blade lug | 2.4 | 10.7 | 20.7 | 100 | **96.60** |
| **BT1-14V** | red | 0.5 - 1.5 | insulated flat blade lug | 3 | 14 | 24 | 100 | **110.25** |
| **BT1-18V** | red | 0.5 - 1.5 | insulated flat blade lug | 2.4 | 18 | 28 | 100 | **112.35** |
| **BT2-10V** | blue | 1.5 - 2.5 | insulated flat blade lug | 2.4 | 10.7 | 20.7 | 100 | **109.20** |
| **BT2-13V** | blue | 1.5 - 2.5 | insulated flat blade lug | 2.4 | 13 | 23 | 100 | **113.40** |
| **BT2-18V** | blue | 1.5 - 2.5 | insulated flat blade lug | 2.4 | 18 | 28 | 100 | **124.95** |
| **BT5-10V** | yellow | 4.0 - 6.0 | insulated flat blade lug | 2.8 | 10 | 22.5 | 100 | **200.55** |
| **BT5-18V** | yellow | 4.0 - 6.0 | insulated flat blade lug | 3 | 18 | 30.5 | 100 | **221.55** |
| **Hook-blade terminal** | | | | | | | | |
| **LB1-3V** | red | 0.5 - 1.5 | insulated hook blade lug | 3.0 | 18.0 | 28.0 | 100 | **134.40** |
| **LB1-4.6V** | red | 0.5 - 1.5 | insulated hook blade lug | 4.6 | 18.0 | 28.0 | 100 | **154.35** |
| **LB2-3V** | blue | 1.5 - 2.5 | insulated hook blade lug | 3.0 | 18.0 | 28.0 | 100 | **152.25** |
| **LB2-4.6V** | blue | 1.5 - 2.5 | insulated hook blade lug | 4.6 | 18.0 | 28.0 | 100 | **174.30** |
| **LB5-3V** | yellow | 4.0 - 6.0 | insulated hook blade lug | 3.0 | 17.5 | 30.0 | 100 | **216.30** |
| **LB5-4.6V** | yellow | 4.0 - 6.0 | insulated hook blade lug | 4.6 | 17.5 | 30.0 | 100 | **243.60** |
| **Female disconnect terminals "push-on"** | | | | | | | | |
| **F1-2.8V/5** | red | 0.5 - 1.5 | female disconnect | 2.8 | 3.2 | 18.5 | 100 | **67.20** |
| **F1-2.8VD/5*** | red | 0.5 - 1.5 | female disconnect | 2.8 | 3.2 | 18.5 | 100 | **126.00** |
| **F1-4.8V/5** | red | 0.5 - 1.5 | female disconnect | 4.8 | 5.0 | 19.0 | 100 | **80.85** |
| **F1-4.8VD/5*** | red | 0.5 - 1.5 | female disconnect | 4.8 | 5.0 | 19.0 | 100 | **148.05** |
| **F1-6.4V** | red | 0.5 - 1.5 | female disconnect | 6.4 | 6.6 | 21.0 | 100 | **105.00** |
| **F1-6.4VF** | red | 0.5 - 1.5 | fully insulated disconnect | 6.4 | 6.6 | 22.0 | 100 | **121.80** |
| **F1-6.4VD*** | red | 0.5 - 1.5 | female disconnect | 6.4 | 6.6 | 21.0 | 100 | **161.70** |
| **F1-6.4VQD*** ■ | red | 0.5 - 1.5 | fully insulated disconnect | 6.4 | 6.6 | 21.5 | 100 | **200.55** |
| **F2-2.8VD/5*** | blue | 1.5 - 2.5 | female disconnect | 2.8 | 3.2 | 18.5 | 100 | **135.45** |
| **F2-4.8V/5** | blue | 1.5 - 2.5 | female disconnect | 4.8 | 5.0 | 19.0 | 100 | **88.20** |
| **F2-4.8VD/5*** | blue | 1.5 - 2.5 | female disconnect | 4.8 | 5.0 | 19.0 | 100 | **158.55** |
| **F2-6.4V** | blue | 1.5 - 2.5 | female disconnect | 6.4 | 6.6 | 21.0 | 100 | **110.25** |
| **F2-6.4VF** | blue | 1.5 - 2.5 | fully insulated disconnect | 6.4 | 6.6 | 22.0 | 100 | **126.00** |
| **F2-6.4VD*** | blue | 1.5 - 2.5 | female disconnect | 6.4 | 6.6 | 21.0 | 100 | **171.15** |
| **F2-6.4VQD*** ■ | blue | 1.5 - 2.5 | fully insulated disconnect | 6.4 | 6.6 | 21.5 | 100 | **212.10** |
| **F2-8V** | blue | 1.5 - 2.5 | female disconnect | 8.0 | 8.4 | 24.0 | 100 | **157.50** |
| **F2-8VD*** | blue | 1.5 - 2.5 | female disconnect | 8.0 | 8.4 | 24.0 | 100 | **226.80** |
| **F5-6.4V** | yellow | 4.0 - 6.0 | female disconnect | 6.4 | 6.6 | 23.5 | 100 | **123.90** |
| **F5-6.4VD*** | yellow | 4.0 - 6.0 | female disconnect | 6.4 | 6.6 | 23.5 | 100 | **242.55** |
| **F5-6.4VQD*** ■ | yellow | 4.0 - 6.0 | fully insulated disconnect | 6.4 | 6.6 | 24.5 | 100 | **294.00** |
| **F5-9.5V** | yellow | 4.0 - 6.0 | female disconnect | 9.5 | 9.9 | 28.5 | 100 | **247.80** |
| **F5-9.5VD*** | yellow | 4.0 - 6.0 | female disconnect | 9.5 | 9.9 | 28.5 | 100 | **394.80** |
| **Male disconnect terminals "push-on"** | | | | | | | | |
| **M1-2.8V/5** | red | 0.5 - 1.5 | male disconnect | – | 2.8 | 19.2 | 100 | **82.95** |
| **M1-2.8VD/5*** | red | 0.5 - 1.5 | male disconnect | – | 2.8 | 19.2 | 100 | **144.90** |
| **M1-4.8V/5** | red | 0.5 - 1.5 | male disconnect | – | 4.8 | 19.2 | 100 | **82.95** |
| **M1-4.8VD/5*** | red | 0.5 - 1.5 | male disconnect | – | 4.8 | 19.2 | 100 | **148.05** |
| **M1-6.4V** | red | 0.5 - 1.5 | male disconnect | – | 6.4 | 21.2 | 100 | **92.40** |
| **M1-6.4VD*** | red | 0.5 - 1.5 | male disconnect | – | 6.4 | 21.2 | 100 | **148.05** |
| **M2-2.8V/5** | blue | 1.5 - 2.5 | male disconnect | – | 2.8 | 19.2 | 100 | **87.15** |
| **M2-2.8VD/5*** | blue | 1.5 - 2.5 | male disconnect | – | 2.8 | 19.2 | 100 | **170.10** |
| **M2-4.8V/5** | blue | 1.5 - 2.5 | male disconnect | – | 4.8 | 19.2 | 100 | **88.20** |
| **M2-4.8VD/5*** | blue | 1.5 - 2.5 | male disconnect | – | 4.8 | 19.2 | 100 | **175.35** |
| **M2-6.4V** | blue | 1.5 - 2.5 | male disconnect | – | 4.8 | 21.2 | 100 | **96.60** |
| **M2-6.4VD*** | blue | 1.5 - 2.5 | male disconnect | – | 4.8 | 21.2 | 100 | **170.10** |
| **M5-6.4V** | yellow | 4.0 - 6.0 | male disconnect | – | 6.4 | 23.2 | 100 | **112.35** |
| **M5-6.4VD*** | yellow | 4.0 - 6.0 | male disconnect | – | 6.4 | 23.7 | 100 | **248.85** |

* Twin-grip crimp

■ Square entry / twin-grip / fully insulated

* *Twin-grip crimp*

## Pre-insulated terminals


PB1...


PB2...


BD1...

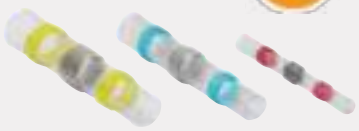

BD5...


RE2...


RE3...


SP...




HP-SST...


JSL 1305-1

| type | colour | wire size mm² | description | dimensions (mm) d2 | B | L | pack qty | price |
|---|---|---|---|---|---|---|---|---|
| **Piggy back disconnect terminals "push-on"** | | | | | | | | |
| **PB1-6.4V** | red | 0.5 - 1.5 | piggy-back disconnect | 6.4 | 6.6 | 21.0 | 100 | **176.40** |
| **PB1-6.4VD*** | red | 0.5 - 1.5 | piggy-back disconnect | 6.4 | 6.6 | 21.0 | 100 | **231.00** |
| **PB2-6.4V** | blue | 1.5 - 2.5 | piggy-back disconnect | 6.4 | 6.6 | 21.0 | 100 | **180.60** |
| **PB2-6.4VD*** | blue | 1.5 - 2.5 | piggy-back disconnect | 6.4 | 6.6 | 21.0 | 100 | **240.45** |
| **PB5-6.4V** | yellow | 4.0 - 6.0 | piggy-back disconnect | 6.4 | 6.6 | 23.5 | 100 | **194.25** |
| **PB5-6.4VD*** | yellow | 4.0 - 6.0 | piggy-back disconnect | 6.4 | 6.6 | 23.5 | 100 | **312.90** |
| * *Twin-grip crimp* | | | | | | | | |
| **Male bullet disconnector** | | | | | | | | |
| **BD1-4V** | red | 0.5 - 1.5 | male bullet disconnect | – | 4.0 | 21.0 | 100 | **96.60** |
| **BD1-4VD*** | red | 0.5 - 1.5 | male bullet disconnect | – | 4.0 | 21.0 | 100 | **168.00** |
| **BD2-5V** | blue | 1.5 - 2.5 | male bullet disconnect | – | 5.0 | 21.0 | 100 | **111.30** |
| **BD2-5VD*** | blue | 1.5 - 2.5 | male bullet disconnect | – | 5.0 | 21.0 | 100 | **194.25** |
| **BD5-5V** | yellow | 4.0 - 6.0 | male bullet disconnect | – | 5.0 | 23.0 | 100 | **137.55** |
| **BD5-5VD*** | yellow | 4.0 - 6.0 | male bullet disconnect | – | 5.0 | 23.0 | 100 | **284.55** |
| * *Twin-grip crimp* | | | | | | | | |
| **Female bullet disconnector** | | | | | | | | |
| **RE1-4VF** | red | 0.5 - 1.5 | female bullet disconnect | – | 4.0 | 22.0 | 100 | **118.65** |
| **RE1-4VFD*** | red | 0.5 - 1.5 | female bullet disconnect | – | 4.0 | 22.5 | 100 | **195.30** |
| **RE2-5VF** | blue | 1.5 - 2.5 | female bullet disconnect | – | 5.0 | 23.5 | 100 | **144.90** |
| **RE2-5VFD*** | blue | 1.5 - 2.5 | female bullet disconnect | – | 5.0 | 23.5 | 100 | **223.65** |
| **RE5-5VF** | yellow | 4.0 - 6.0 | female bullet disconnect | – | 5.0 | 25.5 | 100 | **155.40** |
| **RE5-5VFD*** | yellow | 4.0 - 6.0 | female bullet disconnect | – | 5.0 | 25.0 | 100 | **305.55** |
| * *Twin-grip crimp* | | | | | | | | |
| **Quick-splice connectors** | | | | | | | | |
| **SP1** | red | 0.5 - 1.5 | quick-splice connector | – | 20.0 | 26.8 | 100 | **122.85** |
| **SP2** | blue | 1.5 - 2.5 | quick-splice connector | – | 20.0 | 26.8 | 100 | **111.30** |
| **SP5** | yellow | 4.0 - 6.0 | quick-splice connector | – | 20.0 | 35.0 | 100 | **215.25** |
| **Insulated cord-end (boot lace) terminals** | | | | | | | | |
| **CE007508F** | blue | 0.75 | cord-end terminal | 1.2 | 14.0 | 8.0 | 500 | **170.10** |
| **CE010010F** | red | 1.0 | cord-end terminal | 1.4 | 16.0 | 10.0 | 500 | **191.10** |
| **CE015010F** | black | 1.5 | cord-end terminal | 1.7 | 16.0 | 10.0 | 500 | **191.10** |
| **CE025012F** | grey | 2.5 | cord-end terminal | 2.2 | 18.0 | 12.0 | 500 | **252.00** |
| **CE040012F** | orange | 4.0 | cord-end terminal | 2.8 | 20.0 | 12.0 | 500 | **387.45** |
| **CE060012F** | green | 6.0 | cord-end terminal | 3.5 | 20.0 | 12.0 | 500 | **445.20** |
| **CE100012F** | brown | 10.0 | cord-end terminal | 4.5 | 22.0 | 12.0 | 500 | **547.05** |
| **CE160012F** | ivory | 16.0 | cord-end terminal | 5.8 | 24.0 | 12.0 | 500 | **769.65** |
| **CE250016F** | black | 25.0 | cord-end terminal | 7.3 | 30.0 | 16.0 | 500 | **1 239.00** |

### Shrink solder seal sleeves — IP67

New

Transparent heat shrinkable insulation sleeve provides encapsulation, inspection, strain relief and insulation. One piece design, consists of transparent heat shrinkable sleeve with coloured hot-melt glue on either side of tube with internal fast melting fluxed solder providing a insulated very convenient connection of wires.

- Waterproof, heat shrinkable, transparent sleeve provides precise inspection
- Colored hot-melt adhesive for easy Identification and improved strain relief
- Polyolefin heat shrink butt connectors - shrink ratio 2:1

Operating temperature: -55°C ~ +125°C *(Min. shrink temp. 60°C)*
Voltage resistant: >600V
Volume Resistivity (Ω cm): ≥10 15
Dielectric Strength (KV/mm): ≥25

| type | colour | wire size mm² | description | dimensions (mm) L | Ø max. | Ø min. | price per (100) |
|---|---|---|---|---|---|---|---|
| **HP-SST-200-02** | red | 0.5...1 | shrink seal solder sleeve | 40 | 2.7 | 1.3 | **685.65** |
| **HP-SST-200-03** | blue | 1.5...2.5 | shrink seal solder sleeve | 40 | 4.5 | 1.8 | **783.30** |
| **HP-SST-200-04** | yellow | 4.4-6.0 | shrink seal solder sleeve | 40 | 6.0 | 2.8 | **1 001.70** |

### Crimping tools for pre-insulated terminals

- Crimping profiles for different wire cross-sections *(red/blue/yellow)*

**JSL 1305-1** universal crimping tool for: red / blue / yellow pre-insulated terminals

*see **Cat M** for pricing.*



Above ZAR prices do not include VAT. E&OE

## Insulated crimping lugs for copper conductors

ANE-M series lugs manufactured from electrolytic copper tube annealed and tin plated, designed to obtain the most efficient electrical conductivity and mechanical strength to resist vibration and pull out.

- Material: Electrolytic Copper - Insulated sleeve: PA6.6 (-20 to 115°C)
- Conformity: UNI EN 13600:2003

**General features**

- ANE-M lugs are annealed to guarantee optimum ductility which is an absolute necessity for connectors which will have to withstand the severe deformation arising when compressed and any bending of the palm during installation.
- The interior of the PA6.6 insulation sleeve is funnel shaped so as to ensure complete and easy introduction of the conductor strands.
- The PA6.6 insulated sleeve eliminates the need to insulate the terminal by either taping or using heat shrinkable tubes. Furthermore the PA6.6 sleeve avoids the possibility of conductor breakage at the barrel entrance.



ANE3-M8



ANE3-U5



ANE7-P20

| type | cable (mm²) | Ø stud (mm) | palm width (mm) | description | std pack qty | price per pack |
|---|---|---|---|---|---|---|
| **ANE-M series - Insulated crimping lugs** | | | | | | |
| **ANE2-M4** | 10 | 4.3 | 10 | heavy duty ins. ring lug | 100 | **1 795.50** |
| **ANE2-M5** | 10 | 5.3 | 10 | heavy duty ins. ring lug | 100 | **1 743.00** |
| **ANE2-M6** | 10 | 6.4 | 11 | heavy duty ins. ring lug | 100 | **336.00** |
| **ANE2-M8** | 10 | 8.4 | 15 | heavy duty ins. ring lug | 100 | **354.38** |
| **ANE3-M4** | 16 | 4.3 | 11.5 | heavy duty ins. ring lug | 100 | **1 890.00** |
| **ANE3-M5** | 16 | 5.3 | 11.5 | heavy duty ins. ring lug | 100 | **1 890.00** |
| **ANE3-M6** | 16 | 6.4 | 11.5 | heavy duty ins. ring lug | 100 | **354.38** |
| **ANE3-M8** | 16 | 8.4 | 15 | heavy duty ins. ring lug | 100 | **1 921.50** |
| **ANE5-M5** | 25 | 5.3 | 14 | heavy duty ins. ring lug | 100 | **2 604.00** |
| **ANE5-M6** | 25 | 6.4 | 14 | heavy duty ins. ring lug | 100 | **2 604.00** |
| **ANE5-M8** | 25 | 8.4 | 15 | heavy duty ins. ring lug | 100 | **2 646.00** |
| **ANE5-M10** | 25 | 10.5 | 18 | heavy duty ins. ring lug | 100 | **2 782.50** |
| **ANE7-M6** | 35 | 6.4 | 17 | heavy duty ins. ring lug | 50 | **1 785.00** |
| **ANE7-M8** | 35 | 8.4 | 17 | heavy duty ins. ring lug | 50 | **1 795.50** |
| **ANE7-M10** | 35 | 10.5 | 19 | heavy duty ins. ring lug | 50 | **1 921.50** |
| **ANE7-M12** | 35 | 13.2 | 21 | heavy duty ins. ring lug | 50 | **2 394.00** |
| **ANE10-M6** | 50 | 6.4 | 19 | heavy duty ins. ring lug | 50 | **2 289.00** |
| **ANE10-M8** | 50 | 8.4 | 19 | heavy duty ins. ring lug | 50 | **2 404.50** |
| **ANE10-M10** | 50 | 10.5 | 20 | heavy duty ins. ring lug | 50 | **2 541.00** |
| **ANE10-M12** | 50 | 13.2 | 21 | heavy duty ins. ring lug | 50 | **2 562.00** |
| **ANE-U series - Insulated fork lugs** | | | | | | |
| **ANE2-U4** | 10 | 4.3 | 9.8 | heavy ins. duty fork lug | 100 | **1 743.00** |
| **ANE2-U5** | 10 | 5.3 | 11.5 | heavy ins. duty fork lug | 100 | **1 795.50** |
| **ANE3-U4** | 16 | 4.3 | 10.0 | heavy ins. duty fork lug | 100 | **1 921.50** |
| **ANE3-U5** | 16 | 5.3 | 11.5 | heavy ins. duty fork lug | 100 | **1 921.50** |
| **ANE-P series - Insulated pin lugs** | | | | | | |
| **ANE2-P12** | 10 | L-14.5 | 4.3 | heavy duty pin lug | 100 | **1 795.50** |
| **ANE3-P14** | 16 | L-18.0 | 5.5 | heavy duty pin lug | 100 | **1 417.50** |
| **ANE5-P16** | 25 | L-20.3 | 7.0 | heavy duty pin lug | 100 | **3 045.00** |
| **ANE7-P20** | 35 | L-25.3 | 8.0 | heavy duty pin lug | 50 | **2 278.50** |

**Category-M**

## Cembre - Crimpstar range - Ratchet crimping tools

HNN ratchet controlled tools in the Crimpstar range, are compact, lightweight and easy to use.

**General features:**

- High precision investment cast jaws
- Toggle action leverage to reduce operator effort
- Ergonomically designed non-slip moulded plastic grips
- Ratchet controlled to ensure precise and consistent crimping
- Emergency release lever (releases jaws before completion of crimp)
- Factory-set ratchet for crimping control (automatic release on completion of crimping operation)

*see **Cat M** for pricing.*



HNN4

| type | for terminals | conductor (mm²) | cable entry | description | price |
|---|---|---|---|---|---|
| **HNN3** | insulated | 1.5 to 10 | side | manual indent ratchet crimping tool | |
| **HNN4** | insulated | 10 to 16 | side | manual indent ratchet crimping tool | |




## Crimping lugs for copper conductors

The copper lugs in the A-M range are crafted from high-purity electrolytic copper, ensuring superior electrical conductivity and mechanical strength.

Designed to withstand rigorous conditions, including vibration and pull-out resistance, these lugs are annealed to optimize ductility, which is crucial during crimping and installation.

The lugs are also tin-plated to prevent oxidation, further enhancing their durability in various applications

- Material: Electrolytic Copper - annealed and Tin plated

Cu

c UL us File no. E125401

ANNEALED



A06-M8

New



A5-M12



A24-M16

| type | cable ($mm^2$) | Ø stud (mm) | palm width (mm) | description | std pack qty | price per pack |
|---|---|---|---|---|---|---|
| **A03-M4** | 1.5 | 4.3 | 6.5 | heavy duty crimping lug | 100 | **274.05** |
| **A03-M5** | 1.5 | 5.3 | 7.5 | heavy duty crimping lug | 100 | **274.05** |
| **A03-M6** | 1.5 | 6.4 | 9.0 | heavy duty crimping lug | 100 | **274.05** |
| **A06-M4** | 2.5 | 4.3 | 7.5 | heavy duty crimping lug | 100 | **295.05** |
| **A06-M5** | 2.5 | 5.3 | 8.5 | heavy duty crimping lug | 100 | **295.05** |
| **A06-M6** | 2.5 | 6.4 | 9.0 | heavy duty crimping lug | 100 | **295.05** |
| **A06-M8** | 2.5 | 6.4 | 9.0 | heavy duty crimping lug | 100 | **323.40** |
| **A1-M4** | 4-6 | 4.3 | 8.0 | heavy duty crimping lug | 100 | **371.70** |
| **A1-M5** | 4-6 | 5.3 | 9.0 | heavy duty crimping lug | 100 | **383.25** |
| **A1-M6** | 4-6 | 6.4 | 11.0 | heavy duty crimping lug | 100 | **383.25** |
| **A1-M8** | 4-6 | 6.4 | 11.0 | heavy duty crimping lug | 100 | **432.60** |
| **A1-M10** | 4-6 | 6.4 | 11.0 | heavy duty crimping lug | 100 | **480.90** |
| **A2-M4** | 10 | 4.3 | 10 | heavy duty crimping lug | 100 | **548.10** |
| **A2-M5** | 10 | 5.3 | 10 | heavy duty crimping lug | 100 | **548.10** |
| **A2-M6** | 10 | 6.4 | 11 | heavy duty crimping lug | 100 | **548.10** |
| **A2-M8** | 10 | 8.4 | 15 | heavy duty crimping lug | 100 | **676.20** |
| **A2-M10** | 10 | 8.4 | 15 | heavy duty crimping lug | 100 | **724.50** |
| **A3-M4** | 16 | 4.3 | 11.5 | heavy duty crimping lug | 100 | **676.20** |
| **A3-M5** | 16 | 5.3 | 11.5 | heavy duty crimping lug | 100 | **676.20** |
| **A3-M6** | 16 | 6.4 | 11.5 | heavy duty crimping lug | 100 | **676.20** |
| **A3-M8** | 16 | 8.4 | 15 | heavy duty crimping lug | 100 | **724.50** |
| **A3-M10** | 16 | 8.4 | 15 | heavy duty crimping lug | 100 | **772.80** |
| **A3-M12** | 16 | 8.4 | 15 | heavy duty crimping lug | 100 | **931.35** |
| **A5-M6** | 25 | 6.4 | 14 | heavy duty crimping lug | 100 | **1 113.00** |
| **A5-M8** | 25 | 8.4 | 15 | heavy duty crimping lug | 100 | **1 113.00** |
| **A5-M10** | 25 | 10.5 | 18 | heavy duty crimping lug | 100 | **1 176.00** |
| **A5-M12** | 25 | 13.2 | 21 | heavy duty crimping lug | 100 | **1 407.00** |
| **A7-M6** | 35 | 6.4 | 17 | heavy duty crimping lug | 100 | **1 638.00** |
| **A7-M8** | 35 | 8.4 | 17 | heavy duty crimping lug | 100 | **1 638.00** |
| **A7-M10** | 35 | 10.5 | 19 | heavy duty crimping lug | 100 | **1 638.00** |
| **A7-M12** | 35 | 13.2 | 21 | heavy duty crimping lug | 50 | **931.35** |
| **A10-M6** | 50 | 6.4 | 19 | heavy duty crimping lug | 50 | **1 081.50** |
| **A10-M8** | 50 | 8.4 | 19 | heavy duty crimping lug | 50 | **1 081.50** |
| **A10-M10** | 50 | 10.5 | 20 | heavy duty crimping lug | 50 | **1 081.50** |
| **A10-M12** | 50 | 13.2 | 21 | heavy duty crimping lug | 50 | **1 260.00** |
| **A10-M16** | 50 | 13.2 | 21 | heavy duty crimping lug | 50 | **1 386.00** |
| **A14-M8** | 70 | 8.4 | 21 | heavy duty crimping lug | 50 | **1 522.50** |
| **A14-M10** | 70 | 10.5 | 21 | heavy duty crimping lug | 50 | **1 659.00** |
| **A14-M12** | 70 | 13.2 | 22 | heavy duty crimping lug | 50 | **1 806.00** |
| **A14-M16** | 70 | 17.0 | 26 | heavy duty crimping lug | 50 | **1 963.50** |
| **A19-M10** | 95 | 10.5 | 25 | heavy duty crimping lug | 25 | **1 228.50** |
| **A19-M12** | 95 | 13.2 | 25 | heavy duty crimping lug | 25 | **1 218.00** |
| **A19-M16** | 95 | 17.0 | 27 | heavy duty crimping lug | 25 | **1 449.00** |
| **A24-M8** | 120 | 10.5 | 28.5 | heavy duty crimping lug | 25 | **1 680.00** |
| **A24-M10** | 120 | 10.5 | 28.5 | heavy duty crimping lug | 25 | **1 564.50** |
| **A24-M12** | 120 | 13.2 | 28.5 | heavy duty crimping lug | 25 | **1 690.50** |
| **A24-M16** | 120 | 17.0 | 28.5 | heavy duty crimping lug | 25 | **2 016.00** |
| **A30-M10** | 150 | 10.5 | 31.5 | heavy duty crimping lug | 25 | **2 446.50** |
| **A30-M12** | 150 | 13.2 | 31.5 | heavy duty crimping lug | 25 | **2 257.50** |
| **A30-M16** | 150 | 17.0 | 31.5 | heavy duty crimping lug | 25 | **2 562.00** |
| **A37-M10** | 185 | 10.5 | 35.5 | heavy duty crimping lug | 15 | **1 953.00** |
| **A37-M12** | 185 | 13.2 | 35.5 | heavy duty crimping lug | 15 | **1 953.00** |
| **A37-M16** | 185 | 17.0 | 35.5 | heavy duty crimping lug | 15 | **2 163.00** |
| **A48-M12** | 240 | 13.2 | 39 | heavy duty crimping lug | 10 | **1 722.00** |
| **A48-M16** | 240 | 17.0 | 39 | heavy duty crimping lug | 10 | **2 152.50** |
| **A48-M20** | 240 | 21.0 | 39 | heavy duty crimping lug | 10 | **2 215.50** |

*For contained palm lugs see page **L-24***



Above ZAR prices do not include VAT. E&OE



A48-M10/31

## Contained palm crimping lugs

These crimping lugs feature a contained palm width, specifically designed for LV circuit breakers with reduced space termination. The contained palm permits immediate and easier installation.

| type | cable (mm²) | Ø stud (mm) | palm width (mm) | description | std pack qty | price per lug |
|---|---|---|---|---|---|---|
| **A19B-M8/15.5** | 95 | M8 | 15.5 | contained palm cable lug | 25 | **93.45** |
| **A24B-M8/19** | 120 | M8 | 19.0 | contained palm cable lug | 25 | **189.00** |
| **A30B-M8/19** | 150 | M8 | 19.0 | contained palm cable lug | 25 | **233.10** |
| **A37B-M10/24.5** | 185 | M10 | 24.5 | contained palm cable lug | 15 | **258.30** |
| **A48-M10/31** | 240 | M10 | 31.0 | contained palm cable lug | 10 | **338.10** |

## L-M series - Uninsulated through connectors (ferrules)

L-M range of connectors are designed for jointing low voltage conductors. Are electrolytically tin plated with a minimum thickness of 3µm to avoid oxidation

These connectors are annealed to guarantee optimum ductility which is an absolute necessity for connectors which will have to withstand the severe deformation arising when compressed and any bending of the palm during installation.

They feature an internal taper at both ends to ease the introduction of the conductor and a central stop to ensure correct positioning.

Manufactured from electrolytic copper tube Cu-OF CW008A conform to UNI EN 13600:2013



L10-M



L14-M



L19-M

| type | cable (mm²) | length (mm) | description | pack qty | price per pack |
|---|---|---|---|---|---|
| **L03-M** | 1.5 | L-15 | heavy duty uninsulated crimp ferrules | 100 | **351.75** |
| **L06-M** | 2.5 | L-15 | heavy duty uninsulated crimp ferrules | 100 | **404.25** |
| **L1-M** | 4 - 6 | L-22 | heavy duty uninsulated crimp ferrules | 100 | **580.65** |
| **L2-M** | 10 | L-25 | heavy duty uninsulated crimp ferrules | 100 | **1 134.00** |
| **L3-M** | 16 | L-27 | heavy duty uninsulated crimp ferrules | 100 | **1 197.00** |
| **L5-M** | 25 | L-29 | heavy duty uninsulated crimp ferrules | 100 | **1 627.50** |
| **L7-M** | 35 | L-33 | heavy duty uninsulated crimp ferrules | 100 | **2 583.00** |
| **L10-M** | 50 | L-37 | heavy duty uninsulated crimp ferrules | 50 | **1 690.50** |
| **L14-M** | 70 | L-39 | heavy duty uninsulated crimp ferrules | 50 | **2 110.50** |
| **L19-M** | 95 | L-43 | heavy duty uninsulated crimp ferrules | 25 | **1 659.00** |
| **L24-M** | 120 | L-47 | heavy duty uninsulated crimp ferrules | 25 | **2 467.50** |
| **L30-M** | 150 | L-58 | heavy duty uninsulated crimp ferrules | 25 | **3 391.50** |
| **L37-M** | 185 | L-64 | heavy duty uninsulated crimp ferrules | 15 | **2 782.50** |
| **L48-M** | 240 | L-75 | heavy duty uninsulated crimp ferrules | 10 | **2 719.50** |

**Category-M**

## Hydraulic crimping / cutting tools



HT45-E



KITHT51-1

| type | for terminals | conductor (mm²) | crimping force (kN) | description | price |
|---|---|---|---|---|---|

- Spring loaded handles, dies can be advanced using only one hand
- Supplied with sturdy plastic carrying case for tool with compartments for die sets

### HT45 - Compact hydraulic crimping tool

Lightweight and compact, this tool is ideal for the compression of connectors on over head lines and other general applications.

| | | | | | |
|---|---|---|---|---|---|
| **HT45-E** | die dependant | max. 150 | 50 kN | hydraulic crimping tool | |

### HT51 - Two speed hydraulic crimping tool

- **Supplied with:**
  Sturdy plastic carrying case for tool and *(included)* die sets:
  ME 5-50, 7-50, 10-50, 14-50, 19-50, 24-50, 30-50, 37-50

| | | | | | |
|---|---|---|---|---|---|
| **KITHT51-1** | die dependant | max. 240 | 50 kN | hydraulic crimping tool | |

*see* ***Cat M*** *for pricing.*

### HT131 - Hydraulic crimping tool for semi-circular slotted dies

Self contained, robust and sturdy, will accept all semicircular slotted dies, common to most 130 kN tools. The tool features a double speed action: a fast advancing speed for rapid approach of the dies to the connector and a slower more powerful speed for crimping.

For ease of operation and comfort of the operator the tool head can be fully rotated through 180 degrees.

- **Supplied with:**
  Sturdy plastic carrying case for tool and *(included)* die sets:
  ME 10-C, 14-C, 19-C, 24-C, 30-C, 37-C, 48-C

| | | | | | |
|---|---|---|---|---|---|
| **KITHT131-C-1** | die dependant | max. 400 | 130 kN | hydraulic crimping tool | |



## Cable glands *(compression)*

Thread: Metric
Protection degree: IP68-10
Material: body: Nylon PA66 UL approved *(Flammability UL94V-2)*
seal: EPDM
Ambient temperature: -40°C…+100°C *(instantaneous heat resistance up to 120°C)*



PMGB12-5



PMGB16-7B



PMGB25-18



PMGB40-32



MGM32-22



SSM16-08

| type | thread size | thread length | compress area (mm) | colour | description | price |
|---|---|---|---|---|---|---|
| **M - Metric thread cable glands** | | | *(supplied with locknut)* | | | |
| **PMGB12-5** | M12 | 8.5 mm | 3-5.5 | light grey | Metric compression gland | **2.31** |
| **PMGB16-7** | M16 | 10 mm | 3-7 | light grey | Metric compression gland | **3.05** |
| **PMGB18-10** | M18 | 10 mm | 6-10 | light grey | Metric compression gland | **3.78** |
| **PMGB20-13.5** | M20 | 10 mm | 9-14 | light grey | Metric compression gland | **6.09** |
| **PMGB25-18** | M25 | 12 mm | 13-18 | light grey | Metric compression gland | **8.30** |
| **PMGB32-25** | M32 | 12 mm | 18-25 | light grey | Metric compression gland | **15.65** |
| **PMGB40-32** | M40 | 15 mm | 24-32 | light grey | Metric compression gland | **23.21** |
| **PMGB50-41** | M50 | 15 mm | 31-41 | light grey | Metric compression gland | **30.03** |
| **PMGB63-45** | M63 | 18 mm | 35-45 | light grey | Metric compression gland | **35.81** |
| **PMGB12-5B** | M12 | 8.5 mm | 3-6.5 | black | Metric compression gland | **2.31** |
| **PMGB16-7B** | M16 | 10 mm | 4-8 | black | Metric compression gland | **3.05** |
| **PMGB18-10B** | M18 | 10 mm | 6-10 | black | Metric compression gland | **3.78** |
| **PMGB20-13.5B** | M20 | 10 mm | 9-14 | black | Metric compression gland | **6.09** |
| **PMGB25-18B** | M25 | 12 mm | 13-18 | black | Metric compression gland | **8.30** |
| **PMGB32-25B** | M32 | 12 mm | 18-25 | black | Metric compression gland | **15.65** |
| **PMGB40-32B** | M40 | 15 mm | 26-31 | black | Metric compression gland | **23.21** |
| **PMGB50-41B** | M50 | 15 mm | 26-31 | black | Metric compression gland | **30.03** |
| **PMGB63-45B** | M63 | 18 mm | 35-45 | black | Metric compression gland | **35.81** |
| **PG - thread cable glands** | | | *(supplied with locknut)* | | | |
| **PPGB7-5B** | 12.5 | 8 mm | 3-5.5 | black | PG compression gland | **1.58** |
| **PPGB9-8B** | 15.2 | 8 mm | 4-8 | black | PG compression gland | **2.31** |
| **PPGB11-10B** | 18.6 | 10 mm | 6-10 | black | PG compression gland | **3.05** |
| **PPGB13.5-12B** | 20.4 | 10 mm | 7-12.5 | black | PG compression gland | **3.05** |
| **PPGB16-11B** | 22.5 | 11 mm | 6-11 | black | PG compression gland | **4.52** |
| **PPGB19-14B** | 24 | 11 mm | 8.5-14 | black | PG compression gland | **5.99** |
| **PPGB21-18B** | 28.3 | 12 mm | 12-18 | black | PG compression gland | **7.56** |

## Metal cable glands *(supplied with locknut)*

Thread: Metric
Protection degree: IP68-10
Material: body: Nickel plated brass
seal: Nylon PA66, EPDM rubber
Ambient temperature: -40°C…+100°C (instantaneous heat resistance up to 120°C)

| | | | | | | |
|---|---|---|---|---|---|---|
| **MGM8-4.5** | M8 | 4 mm | 3-4.5 | nickel | metal compression gland | **16.91** |
| **MGM12-6.5** | M12 | 6.5 mm | 3-6.5 | nickel | metal compression gland | **17.12** |
| **MGM16-8** | M16 | 8 mm | 4-8 | nickel | metal compression gland | **24.15** |
| **MGM18-10** | M18 | 8 mm | 5-10 | nickel | metal compression gland | **28.35** |
| **MGM20-12** | M20 | 8 mm | 6-12 | nickel | metal compression gland | **31.92** |
| **MGM20-12L** | M20 | 11 mm | 6-12 | nickel | metal compression gland | **33.60** |
| **MGM22-14** | M22 | 8 mm | 10-14 | nickel | metal compression gland | **38.43** |
| **MGM25-16** | M25 | 9 mm | 10-16 | nickel | metal compression gland | **59.85** |
| **MGM25-16L** | M25 | 11 mm | 10-16 | nickel | metal compression gland | **59.85** |
| **MGM32-22** | M32 | 10 mm | 15-22 | nickel | metal compression gland | **86.10** |
| **MGM40-30** | M40 | 11 mm | 22-30 | nickel | metal compression gland | **144.90** |
| **MGM50-38** | M50 | 13 mm | 32-38 | nickel | metal compression gland | **268.80** |
| **MGM63-44** | M63 | 14 mm | 37-44 | nickel | metal compression gland | **446.25** |

## Stainless steel 316 *(supplied with locknut)*

Thread: Metric
Protection degree : IP68-10
Material: body: Stainless steel 316
seal: Nylon PA66, EPDM rubber
Ambient temperature: -50°C…+180°C

| | | | | | | |
|---|---|---|---|---|---|---|
| **SSM12-6.5** | M12 | 6.5 mm | 3-6.5 | S/S | stainless steel gland | **81.90** |
| **SSM16-08** | M16 | 8 mm | 4-8 | S/S | stainless steel gland | **115.50** |
| **SSM20-12** | M20 | 8 mm | 6-12 | S/S | stainless steel gland | **141.75** |
| **SSM25-16** | M25 | 9 mm | 10-16 | S/S | stainless steel gland | **247.80** |
| **SSM32-22** | M32 | 10 mm | 15-22 | S/S | stainless steel gland | **390.60** |



Above ZAR prices do not include VAT. E&OE

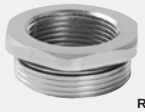

PSRM16-P-10B


PPGA20-E-14B


WLCM20S-7B


PLNM16B


EAM16/M20H


RAM32/M25H


PHPM20B

| type | thread size | thread length | compress area (mm) | colour | description | price |
|---|---|---|---|---|---|---|
| **Strain relief cable glands** | | *(supplied with locknut)* | | | **IP68-10** | |
| Material: | | Nylon PA66 UL approved *(Flammability UL94V-2)* | | | | |
| **PSRM12-P-7B** | M12 | 8.5 mm | 4-7 | black | nylon strain relief gland | **20.90** |
| **PSRM16-P-10B** | M16 | 10 mm | 6-10 | black | nylon strain relief gland | **24.68** |
| **PSRM20S-P-12B** | M20 | 10 mm | 6-12.5 | black | nylon strain relief gland | **30.66** |
| **90° Degree cable glands** | | *(supplied with locknut)* | | | | |
| Material: | | Nylon PA66 UL approved *(Flammability UL94V-2)* | | | | |
| **PPGA16-E-08B** | M16 | 10 mm | 4-7 | black | 90° compression gland | **38.85** |
| **PPGA20-E-14B** | M20 | 15 mm | 9-14 | black | 90° compression gland | **53.55** |
| **PPGA25-E-18B** | M25 | 15 mm | 13-18 | black | 90° compression gland | **81.90** |
| **PPGA32-E-25B** | M32 | 15 mm | 18-25 | black | 90° compression gland | **96.60** |
| **Waterproof in-line connector** | | | | | **IP68-10** | |
| Material: | | Nylon PA66 UL approved *(Flammability UL94V-2)* | | seal: | EPDM | |
| Ambient temperature: | | -40°C…+100°C *(instantaneous heat resistance up to 120°C)* | | | | |
| **WLCM20S-7B** | M20 | 3-pole | 4-7 | black | waterproof connector | **86.10** |
| **WLCM20S-11B** | M20 | 3-pole | 6-11 | black | waterproof connector | **93.45** |
| **WLCM25-16B** | M25 | 4-pole | 10-16 | black | waterproof connector | **139.65** |
| **WLCM25-18B** | M25 | 4-pole | 13-19 | black | waterproof connector | **139.65** |
| **Cable glands accessories** | | | | | | |
| **Plastic locknuts** *(metric)* | | | *(spares)* | | | |
| **PLNM12B** | M12 | locknut | – | black | nylon metric locknut only | **.84** |
| **PLNM16B** | M16 | locknut | – | black | nylon metric locknut only | **1.58** |
| **PLNM20B** | M20 | locknut | – | black | nylon metric locknut only | **2.31** |
| **PLNM22B** | M22 | locknut | – | black | nylon metric locknut only | **2.31** |
| **PLNM25B** | M25 | locknut | – | black | nylon metric locknut only | **3.05** |
| **PLNM32B** | M32 | locknut | – | black | nylon metric locknut only | **5.25** |
| **PLNM40B** | M40 | locknut | – | black | nylon metric locknut only | **8.30** |
| **PLNM50B** | M50 | locknut | – | black | nylon metric locknut only | **11.97** |
| **PLNM63B** | M63 | locknut | – | black | nylon metric locknut only | **15.02** |

| **Adaptors** *(metallic)* | | | **enlargers / reducers** | | | |
|---|---|---|---|---|---|---|
| type | from male | to female | thread length | colour | description | price |
| **Nickel plate** | | | | | | |
| **EAM12/M16H** | M12 | M16 | 6 mm | nickel | M enlargement adaptors | **38.85** |
| **EAM16/M20H** | M16 | M20 | 6 mm | nickel | M enlargement adaptors | **46.20** |
| **EAM20/M25H** | M20 | M25 | 6.5 mm | nickel | M enlargement adaptors | **61.95** |
| **EAM25/M32H** | M25 | M32 | 7.5 mm | nickel | M enlargement adaptors | **103.95** |
| **EAM32/M40H** | M32 | M40 | 8 mm | nickel | M enlargement adaptors | **156.45** |
| **EAM40/M50H** | M40 | M50 | 9 mm | nickel | M enlargement adaptors | **195.30** |
| **RAM16/M12H** | M16 | M12 | 6 mm | nickel | M reduction adaptors | **15.75** |
| **RAM20/M16H** | M20 | M16 | 6 mm | nickel | M reduction adaptors | **26.15** |
| **RAM25/M20H** | M25 | M20 | 6.5 mm | nickel | M reduction adaptors | **43.05** |
| **RAM32/M25H** | M32 | M25 | 7.5 mm | nickel | M reduction adaptors | **77.70** |
| **RAM40/M32H** | M40 | M32 | 8 mm | nickel | M reduction adaptors | **107.10** |
| **RAM50/M40H** | M50 | M40 | 9 mm | nickel | M reduction adaptors | **192.15** |

| **Nylon blanking plugs** | | *(supplied with locknut)* | | | **IP68** | |
|---|---|---|---|---|---|---|
| Material: | | Nylon PA66 UL approved (Flammability UL94V-2) | | | | |
| type | thread size | thread length | compress area (mm) | colour | description | price |
| **PHPM12B** | M12 | 9.5 mm | – | black | screw-in blanking plugs | **3.78** |
| **PHPM16B** | M16 | 10 mm | – | black | screw-in blanking plugs | **5.25** |
| **PHPM20B** | M20 | 11 mm | – | black | screw-in blanking plugs | **7.56** |
| **PHPM22B** | M22 | 11 mm | – | black | screw-in blanking plugs | **9.03** |
| **PHPM25B** | M25 | 11 mm | – | black | screw-in blanking plugs | **11.24** |
| **PHPM32B** | M32 | 11 mm | – | black | screw-in blanking plugs | **17.96** |
| **PHPM40B** | M40 | 12 mm | – | black | screw-in blanking plugs | **31.40** |
| **PHPM50B** | M50 | 12 mm | – | black | screw-in blanking plugs | **41.79** |
| **PHPM63B** | M63 | 12 mm | – | black | screw-in blanking plugs | **52.50** |





AD-13.0


PJ-VH-13.0


QCM12-AD13


EQCM16-AD13


WCTM16-AD13


EWCM16-AD13


PJ-SWB-06

## Corrugated Conduit *(flexible)*

Product material: Polypropylene
Ambient temperature: -40°C…+120°C *(instantaneous heat resistance up to 140°C)*
Features: High flexibility, twist resistance, good bending performance, can withstand heavy loads; acid resistant, lubricants, coolant, etc.,
Applications: Machinery manufacturing, insulation protection, lighting, automobile manufacturing, aviation equipment, subway, train, automation control and other industries.

| type | IDØ (mm) | colour | ODØ (mm) | description | meters *(per roll)* | price *(per roll)* |
|---|---|---|---|---|---|---|
| **AD13.0** | 10 | black | 13.0 | plastic convoluted tubing | 25 | **170.10** |
| **AD15.8** | 12 | black | 15.8 | plastic convoluted tubing | 25 | **201.60** |
| **AD21.2** | 17 | black | 21.2 | plastic convoluted tubing | 25 | **269.85** |
| **AD25.0** | 20 | black | 25.0 | plastic convoluted tubing | 25 | **341.25** |
| **AD34.5** | 29 | black | 34.5 | plastic convoluted tubing | 25 | **512.40** |
| **AD42.5** | 36 | black | 42.5 | plastic convoluted tubing | 25 | **821.10** |
| **AD54.5** | 48 | black | 54.5 | plastic convoluted tubing | 25 | **1 428.00** |

## Mounting accessories - for above corrugated conduit

**Support bracket** - *for corrugated conduit* *PA (Polyamide)*

| | | | | | for conduit | |
|---|---|---|---|---|---|---|
| **PJ-VH-13.0** | – | black | holder | support bracket for conduit | AD-13 | **12.71** |
| **PJ-VH-15.8** | – | black | holder | support bracket for conduit | AD15.8 | **14.18** |
| **PJ-VH-21.2** | – | black | holder | support bracket for conduit | AD21.2 | **17.96** |
| **PJ-VH-25.0** | – | black | holder | support bracket for conduit | AD25 | **21.63** |
| **PJ-VH-34.5** | – | black | holder | support bracket for conduit | AD34.5 | **34.34** |
| **PJ-VH-42.5** | – | black | holder | support bracket for conduit | AD42.5 | **39.59** |
| **PJ-VH-54.5** | – | black | holder | support bracket for conduit | AD54.5 | **50.40** |

## Quick connectors - *through hole mounting* *PA66*

| | | | | | | |
|---|---|---|---|---|---|---|
| **QCM12-AD13** | M12 | black | straight | quick connect connector | AD-13 | **9.03** |
| **QCM16-AD15.8** | M16 | black | straight | quick connect connector | AD15.8 | **10.50** |
| **QCM20-AD15.8** | M20 | black | straight | quick connect connector | AD15.8 | **10.50** |
| **QCM20-AD21.2** | M20 | black | straight | quick connect connector | AD21.2 | **12.71** |
| **QCM25-AD25** | M25 | black | straight | quick connect connector | AD25 | **13.44** |
| **QCM32-AD34.5** | M32 | black | straight | quick connect connector | AD34.5 | **20.16** |
| **QCM40-AD42.5** | M40 | black | straight | quick connect connector | AD42.5 | **27.62** |
| **QCM50-AD54.5** | M50 | black | straight | quick connect connector | AD54.5 | **48.30** |
| **QCM63-AD54.5** | M63 | black | straight | quick connect connector | AD54.5 | **52.50** |
| **EQCM16-AD13** | M16 | black | 90º | elbow quick connector | AD-13 | **22.47** |
| **EQCM20-AD21.2** | M20 | black | 90º | elbow quick connector | AD-21.2 | **31.40** |
| **EQCM25-AD28.5** | M25 | black | 90º | elbow quick connector | AD28.5 | **40.95** |
| **EQCM32-AD34.5** | M32 | black | 90º | elbow quick connector | AD34.5 | **53.55** |
| **EQCM40-AD42.5** | M40 | black | 90º | elbow quick connector | AD42.5 | **78.75** |
| **EQCM50-AD54.5** | M50 | black | 90º | elbow quick connector | AD54.5 | **114.45** |

## Weatherproof connectors - *through hole mounting* **IP68** *PA66*

| | | | | | | |
|---|---|---|---|---|---|---|
| **WCTM16-AD13** | M16 | black | straight | weatherproof connector | AD-13 | **14.18** |
| **WCTM20-AD15.8** | M20 | black | straight | weatherproof connector | AD15.8 | **19.43** |
| **WCTM20-AD21.2** | M20 | black | straight | weatherproof connector | AD21.2 | **23.94** |
| **WCTM25-AD25** | M25 | black | straight | weatherproof connector | AD25 | **28.35** |
| **WCTM32-AD34.5** | M32 | black | straight | weatherproof connector | AD34.5 | **39.59** |
| **WCTM40-AD42.5** | M40 | black | straight | weatherproof connector | AD42.5 | **66.15** |
| **WCTM50-AD54.5** | M50 | black | straight | weatherproof connector | AD54.5 | **105.00** |
| **WCTM63-AD54.5** | M63 | black | straight | weatherproof connector | AD54.5 | **119.70** |
| **EWCM16-AD13** | M16 | black | 90º | weatherproof connector | AD-13 | **54.60** |
| **EWCM20-AD15.8** | M20 | black | 90º | weatherproof connector | AD15.8 | **77.70** |
| **EWCM20-AD21.2** | M20 | black | 90º | weatherproof connector | AD21.2 | **107.10** |
| **EWCM25-AD25** | M25 | black | 90º | weatherproof connector | AD25 | **112.35** |
| **EWCM32-AD34.5** | M32 | black | 90º | weatherproof connector | AD34.5 | **130.20** |
| **EWCM40-AD42.5** | M40 | black | 90º | weatherproof connector | AD42.5 | **158.55** |

## Spiral wrapping band *(HDPE (Heavy-Duty Polyethylene)*

Ambient temperature: -50°C…+80°C
Features: Easy installation, no tools required, provides safe protection for cables, wires, hoses, & tubing, protects against abrasion, chafing, cuts, prevents tangling.

| type | IDØ (mm) | colour | ODØ (mm) | bundle Ø max. (mm) | description | meters *(per roll)* | price *(per roll)* |
|---|---|---|---|---|---|---|---|
| **PJ-SWB-06** | 4 | black | 6 | 4...20 | spiral binding | 10 | **21.63** |
| **PJ-SWB-12** | 9 | black | 12 | 9…65 | spiral binding | 10 | **55.65** |
| **PJ-SWB-19** | 15 | black | 19 | 15…120 | spiral binding | 10 | **156.45** |



Above ZAR prices do not include VAT. E&OE

RoHS VDE COMBI

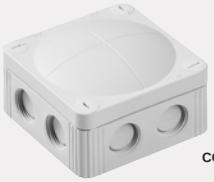
## Junction boxes *IP66/67*

Wiska COMBI junction boxes provide ultimate protection from environmental conditions in a compact, very attractive format, suitable for extreme outdoor and indoor installations.

- **High-quality material** of the COMBI junction boxes is UV- and Ozone resistant, therefore suitable for inside as well as outside installation
- **Bellied cover** allows 10% more installation space
- Captive and rust-free **quick-release** lid screws
- Self-sealing **membranes on the rear** enable a clean assembly for cable outputs from the wall

- **Weather proof - ultravoilet resistant - shatterproof - impact resistant - flame retardant - halogen free**
- Protection: IP66 / IP67
- Material: Polypropylene, reinforced glass fibre, sealing: thermoplastic elastomer
- Temperature: -30ºC…+100ºC
- Glow wire test: 750ºC
- Patented combination: a) - Integrated thread for Metric cable gland entry without locknuts
  b) - Elastic self-sealing puncture-membrane for cable entry on the sides and rear
- Mounting: Mounting holes located outside the sealing area but within the lid
- Colour: RAL 7035 *(light grey)* or RAL 9005 *(black)*


COMBI 206


COMBI 308


COMBI 407


COMBI 304


COMBI 116

| type | cable entry sides | cable entry rear | thread Ø | colour | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|
| **Screw-on lid/cover** | **IP66 - IP67** *(when used with cable gland)* | | | | | | | | |
| • Captive rust free quick release (1/4 turn) lid screws of plastic | | | | | | | | | |
| • Combined threaded M20/membrane entries (407 and 1210 also have M25 knockouts) | | | | | | | | | |
| **COMBI 206** | | | IP66/67 | | *(captive - quick release lid screws)* | | | | |
| **10109569** | 6 | 2 | M20 | grey | weatherproof junction box | 85 | 49 | 51 | **75.60** |
| **10109571** | 6 | 2 | M20 | black | weatherproof junction box | 85 | 49 | 51 | **75.60** |
| **COMBI 308** | | | IP66/67 | | *(captive - quick release lid screws)* | | | | |
| **10060400** | 8 | – | M20 | grey | weatherproof junction box | 85 | 85 | 51 | **78.75** |
| **10060581** | 8 | – | M20 | black | weatherproof junction box | 85 | 85 | 51 | **78.75** |
| **COMBI 407** | | | IP66/67 | | 1 x M20 cable entry can be knocked-out for M25 entry | | | | |
| **10105595** | 7 | 2 | M20/25 | grey | weatherproof junction box | 95 | 95 | 60 | **121.80** |
| **10105601** | 7 | 2 | M20/25 | black | weatherproof junction box | 95 | 95 | 60 | **121.80** |
| **COMBI 607** | | | IP66/67 | | 1 x M25 cable entry can be knocked-out for M20 entry | | | | |
| **10060531** | 7 | 3 | M25 | grey | weatherproof junction box | 110 | 110 | 66 | **151.20** |
| **10060648** | 7 | 3 | M25 | black | weatherproof junction box | 110 | 110 | 66 | **240.45** |
| **COMBI 1210** | | | IP66/67 | | all M20 cable entries can be knocked-out for M25 entry | | | | |
| **10101459** | 10 | 4 | M20 | grey | round w/proof junction box | 160 | 140 | 81 | **249.90** |
| **10101460** | 10 | 4 | M20 | black | round w/proof junction box | 160 | 140 | 81 | **379.05** |
| **COMBI 304 round housing - Ø 82 mm** | | | | | | | | | |
| • Flat lid - bayonet cap *(quarter turn screw fixing)* | | | | | | | | | |
| • Unique hook closing mechanism preventing unauthorised access. *(tool required to gain access)* | | | | | | | | | |
| • Mounting via external lugs | | | | | | | | | |
| **10110629** | 4 | – | M20 | grey | weatherproof junction box | Ø | 82 | 57 | **121.80** |
| **10110630** | 4 | – | M20 | black | weatherproof junction box | Ø | 82 | 57 | **121.80** |
| **Push-on lid/cover** | IP66 | | | | *Push-on lid/cover - for easy access to internal wiring* | | | | |
| • Cable entry: Elastic self-sealing puncture-membranes for cable entry on sides and in the base | | | | | | | | | |
| **COMBI 108** | | | IP66 | | *(push-on lid/cover)* | | | | |
| **10060522** | 10 | 2 | – | grey | weatherproof junction box | 76 | 76 | 51 | **64.05** |
| **COMBI 116** | | | IP66 | | *(push-on lid/cover)* | | | | |
| **10109563** | 18 | 4 | – | grey | weatherproof junction box | 152 | 76 | 51 | **100.80** |

### Accessories for above junction boxes

| | | | | |
|---|---|---|---|---|
| **10108836** | | | external mounting feet for COMBI 308/407/607/1210 | **61.95** |
| **22001132** | SP-HKT 11/5 | 5-pole | internal terminal for COMBI 108/116/206/304/308/407 | **126.00** |
| **22000407** | SP-HKT607 | 5-pole | internal mounting terminal for COMBI 607 | **128.10** |
| **10109800** | ZER 4-12 | Ø 4-11 | strain relief ring for securing cable internally *(10 pcs)* | **54.60** |
| **10110766** | ZER 11-18 | Ø 11-18 | strain relief ring for securing cable internally *(10 pcs)* | **58.80** |

Wiska **SPRINT** cable glands provide ultimate protection from environmental conditions.

Suitable for extreme outdoor installations. -40°C...+100°C

- Protection: **IP68** to EN 60520 / **IP69K** to DIN 40 050-T9
- UV resistant: Type A, ISO 4892-2, UL-file QCRV2.E179850
- Flame protection: Glow wire test 750° acc.to EN60695-2-11
- Self-locking cap nut thread offering vibration protection
- Increased wall thickness for greater stability
- Smooth internal channel preventing cable jam on insertion
- Claw shape provides large sealing area and excellent adaptation to irregular cable profiles
- Material: Gland - Polyamide
  Gasket - EPDM *(highly resistant to chemicals, environment and ultraviolet)*


10066413


10060773


10066123


10061783


10065003


10063144

## Metric cable glands *grey (or) black*

| type | thread diameter | compress area (mm) | description | dimensions (mm) (TL) | (L) | (SW) | price |
|---|---|---|---|---|---|---|---|
| **ESKV light grey RAL 7035** | | | • *Locknut to be ordered separately* | | | | |
| **10066410** | M12 X 1.5 | 3 - 7 | compression gland *(grey)* | 29 - 43 | 9 | 16 | **8.82** |
| **10066411** | M16 X 1.5 | 4.5 - 10 | compression gland *(grey)* | 31 - 37 | 9 | 20 | **8.82** |
| **10066412** | M20 X 1.5 | 6 - 13 | compression gland *(grey)* | 36 - 45 | 10 | 24 | **8.82** |
| **10066413** | M25 X 1.5 | 9 - 17 | compression gland *(grey)* | 38 - 47 | 10 | 29 | **13.55** |
| **10066414** | M32 X 1.5 | 13 - 21 | compression gland *(grey)* | 42 - 51 | 12 | 36 | **26.25** |
| **10066415** | M40 X 1.5 | 16 - 28 | compression gland *(grey)* | 52 - 65 | 12 | 46 | **64.05** |
| **10066416** | M50 X 1.5 | 21 - 35 | compression gland *(grey)* | 59 - 72 | 14 | 55 | **95.55** |
| **10066417** | M63 X 1.5 | 34 - 48 | compression gland *(grey)* | 64 - 78 | 15 | 68 | **155.40** |
| **EMUG locknuts for above** | | | Material: *Light grey Polyamide/glassfibre reinforced* | | | | |
| **10060770** | M12 x 1.5 | – | gland locknut *(grey)* | – | – | 18 | **1.37** |
| **10060771** | M16 x 1.5 | – | gland locknut *(grey)* | – | – | 22 | **2.10** |
| **10060772** | M20 x 1.5 | – | gland locknut *(grey)* | – | – | 27 | **2.10** |
| **10060773** | M25 x 1.5 | – | gland locknut *(grey)* | – | – | 32 | **2.73** |
| **10060774** | M32 x 1.5 | – | gland locknut *(grey)* | – | – | 40 | **3.47** |
| **10060775** | M40 x 1.5 | – | gland locknut *(grey)* | – | – | 50 | **8.09** |
| **10060776** | M50 x 1.5 | – | gland locknut *(grey)* | – | – | 60 | **10.82** |
| **10060777** | M63 x 1.5 | – | gland locknut *(grey)* | – | – | 75 | **18.17** |
| **ESKV black RAL 9005** | | | • *Locknut to be ordered separately* | | | | |
| **10066120** | M12 x 1.5 | 3 - 7 | compression gland *(black)* | 29 - 43 | 9 | 16 | **8.82** |
| **10066121** | M16 x 1.5 | 4.5 - 10 | compression gland *(black)* | 31 - 37 | 9 | 20 | **8.82** |
| **10066122** | M20 x 1.5 | 6 - 13 | compression gland *(black)* | 36 - 45 | 10 | 24 | **8.82** |
| **10066123** | M25 x 1.5 | 9 - 17 | compression gland *(black)* | 38 - 47 | 10 | 29 | **13.55** |
| **10066124** | M32 x 1.5 | 13 - 21 | compression gland *(black)* | 42 - 51 | 12 | 36 | **26.25** |
| **10066125** | M40 x 1.5 | 16 - 28 | compression gland *(black)* | 52 - 65 | 12 | 46 | **90.30** |
| **10066126** | M50 x 1.5 | 21 - 35 | compression gland *(black)* | 59 - 72 | 14 | 55 | **95.55** |
| **10066127** | M63 x 1.5 | 34 - 48 | compression gland *(black)* | 64 - 78 | 15 | 68 | **214.20** |
| **EMUG locknuts for above** | | | Material: *Black polyamide/glassfibre reinforced* | | | | |
| **10061780** | M12 x 1.5 | – | gland locknut *(black)* | – | – | 18 | **1.37** |
| **10061781** | M16 x 1.5 | – | gland locknut *(black)* | – | – | 22 | **2.10** |
| **10061782** | M20 x 1.5 | – | gland locknut *(black)* | – | – | 27 | **2.10** |
| **10061783** | M25 x 1.5 | – | gland locknut *(black)* | – | – | 32 | **2.73** |
| **10061784** | M32 x 1.5 | – | gland locknut *(black)* | – | – | 40 | **3.47** |
| **10061785** | M40 x 1.5 | – | gland locknut *(black)* | – | – | 50 | **17.54** |
| **10061786** | M50 x 1.5 | – | gland locknut *(black)* | – | – | 60 | **30.35** |
| **10061787** | M63 x 1.5 | – | gland locknut *(black)* | – | – | 75 | **39.06** |
| **EMSKV Metal cable glands** | | | • *Locknut to be ordered separately* | | | | |
| • Material: | | | Cable gland: Nickle-plated brass polyamide | | | | |
| **10065000** | M12 x 1.5 | 3 - 7 | metal compression gland | 23 - 30 | 5 | 16 | **54.60** |
| **10065001** | M16 x 1.5 | 4.5 - 10 | metal compression gland | 26 - 34 | 5 | 20 | **69.30** |
| **10065002** | M20 x 1.5 | 6 - 13 | metal compression gland | 29 - 37 | 6 | 24 | **84.00** |
| **10065003** | M25 x 1.5 | 9 - 17 | metal compression gland | 33 - 42 | 7 | 29 | **130.20** |
| **10065004** | M32 x 1.5 | 13 - 21 | metal compression gland | 36 - 44 | 8 | 36 | **215.25** |
| **10065005** | M40 x 1.5 | 16 - 28 | metal compression gland | 44 - 55 | 8 | 46 | **403.20** |
| **10065006** | M50 x 1.5 | 21 - 35 | metal compression gland | 51 - 62 | 9 | 55 | **575.40** |
| **10065007** | M63 x 1.5 | 34 - 48 | metal compression gland | 56 - 67 | 10 | 68 | **1 218.00** |
| **EMMU locknuts for above** | | | Material: *Nickle-plated brass* | | | | |
| **10063141** | M12 x 1.5 | – | metal gland locknut | – | – | 15 | **4.10** |
| **10063142** | M16 x 1.5 | – | metal gland locknut | – | – | 19 | **6.09** |
| **10063143** | M20 x 1.5 | – | metal gland locknut | – | – | 24 | **7.46** |
| **10063144** | M25 x 1.5 | – | metal gland locknut | – | – | 30 | **11.45** |
| **10063145** | M32 x 1.5 | – | metal gland locknut | – | – | 36 | **18.17** |
| **10063146** | M40 x 1.5 | – | metal gland locknut | – | – | 46 | **29.61** |
| **10063147** | M50 x 1.5 | – | metal gland locknut | – | – | 60 | **64.05** |
| **10063148** | M63 x 1.5 | – | metal gland locknut | – | – | 70 | **95.55** |



Above ZAR prices do not include VAT. E&OE


10101862


10108616


10062...


10063573


10063582


10063664

## Cable gland accessories

SPRINT cable glands can be further enhanced to be applied for diverse applications by the introduction of various special inserts for blind, reduced cable diameters, multiple cable sealing.

| type | model | for gland | compress area (mm) | colour | description | price |
|---|---|---|---|---|---|---|
| **Grommets** | | *membrane cable entry with strain relief* | | | *-40°C...65°C* | |
| **CLIXX** | push-in grommet enabling the simplest cable entry through a membrane with cable strain relief built-in. | | | | | |
| • Reliable sealing: | IP66 and IP67 to EN 60 529 weather proof, UV resistant | | | | | |
| • Space-saving: | Flat design, minimal space requirement | | | | | |
| • Easiest assembly: | Ext. mounting from one side - no thread, no tools, no locknuts | | | | | |
| • Incorporated: | Strain relief to EN 50 262 Type A | | | | | |
| • Time-saving: | Simple one-hand-only assembly reduce installation time by 80% | | | | | |
| • For wall thickness: | 0.8 - 3.5 mm | | | | | |
| • Material: | Polypropylene / Thermoplastic elastomere | | | | | |
| **10101861** | CLIXX 16 | M16 | 4.5...10 | grey | membrane cable entry | **9.45** |
| **10101359** | CLIXX 20 | M20 | 6...13 | grey | membrane cable entry | **8.09** |
| **10101862** | CLIXX 25 | M25 | 9...17 | grey | membrane cable entry | **12.81** |
| **MultiCLIXX** | Multiple membrane cable entry with strain relief | | | | | |
| • Multiple cable entries | 2 x Ø 4...8 mm + 2 x Ø 7...12 mm | | | | | |
| • Fast installation: | Push in - insert cable - done *(for maximum time saving)* | | | | | |
| • Strain relief: | EN 62444, Type A - for up to four cables at the same time | | | | | |
| **10108616** | EMTZ | M32 | 2 x 4-8 / 7-12 | grey | multiple membrane entry | **51.45** |
| **Reduction sealing inserts** | | *for reduced cable diameters with existing gland* | | | *IP68* | |
| • Material: | EPDM | | | | | |
| • Operating temperature: | -40°C...100°C | | | | | |
| **10062183** | RDE 12 | M12 | 1...3 | | gland reduction sealing inserts | **5.46** |
| **10062184** | RDE 16 | M16 | 2...6 | | gland reduction sealing inserts | **6.83** |
| **10062185** | RDE 20 | M20 | 4...8 | | gland reduction sealing inserts | **6.83** |
| **10060768** | RDE 25 | M25 | 7...12 | | gland reduction sealing inserts | **8.82** |
| **10062186** | RDE 32 | M32 | 9...14 | | gland reduction sealing inserts | **19.53** |
| **10062187** | RDE 40 | M40 | 12...20 | | gland reduction sealing inserts | **45.15** |

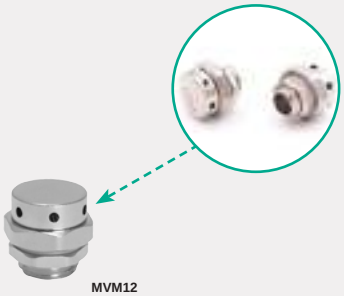
**Adaptors** *(plastic)*

- Temperature range: -40°C to 100°C
- Material: Polyamide, reinforced glass fibre
- Colour RAL 7035 • Glow wire test 650 °C

| type | model | from male | to female | description | | TL (mm) | price |
|---|---|---|---|---|---|---|---|
| **Enlargement adaptors** | | **metric to metric** | | | | | |
| **10063570** | KEM 12/16 | M12 | M16 | enlarging | adaptor | 27 | **12.18** |
| **10063571** | KEM 16/20 | M16 | M20 | enlarging | adaptor | 27 | **12.18** |
| **10063572** | KEM 20/25 | M20 | M25 | enlarging | adaptor | 27 | **15.54** |
| **10063573** | KEM 25/32 | M25 | M32 | enlarging | adaptor | 28 | **48.30** |
| **10063574** | KEM 32/40 | M32 | M40 | enlarging | adaptor | 30 | **72.45** |
| **10063575** | KEM 40/50 | M40 | M50 | enlarging | adaptor | 30 | **124.95** |
| **Reduction adaptors** | | **metric to metric** | | | | | |
| **10063577** | KRM 16/12 | M16 | M12 | reduction | adaptor | 16 | **10.19** |
| **10063579** | KRM 20/16 | M20 | M16 | reduction | adaptor | 17 | **10.19** |
| **10063582** | KRM 25/20 | M25 | M20 | reduction | adaptor | 17 | **18.90** |
| **10063584** | KRM 32/20 | M32 | M20 | reduction | adaptor | 19 | **35.70** |
| **10063585** | KRM 32/25 | M32 | M25 | reduction | adaptor | 19 | **35.70** |
| **10063588** | KRM 40/32 | M40 | M32 | reduction | adaptor | 19 | **69.30** |
| **10063591** | KRM 50/40 | M50 | M40 | reduction | adaptor | 21 | **94.50** |
| **PG to Metric adaptors** | | **PG to metric** | | | | | |
| **10063650** | APM 7/12 | PG 7 | M12 | metric to PG | adaptor | 27 | **13.55** |
| **10063653** | APM 9/16 | PG 9 | M16 | metric to PG | adaptor | 27 | **14.81** |
| **10063655** | APM 11/16 | PG 11 | M16 | metric to PG | adaptor | 27 | **16.17** |
| **10063659** | APM 13.5/20 | PG 13.5 | M20 | metric to PG | adaptor | 28 | **17.54** |
| **10063661** | APM 16/20 | PG 16 | M20 | metric to PG | adaptor | 28 | **18.17** |
| **10063662** | APM 16/25 | PG 16 | M25 | metric to PG | adaptor | 28 | **18.17** |
| **10063664** | APM 21/25 | PG 21 | M25 | metric to PG | adaptor | 30 | **21.63** |
| **10063667** | APM 29/32 | PG 29 | M32 | metric to PG | adaptor | 19 | **29.61** |
| **10063670** | APM 36/40 | PG 36 | M40 | metric to PG | adaptor | 21 | **79.80** |
| **10063673** | APM 42/40 | PG 42 | M40 | metric to PG | adaptor | 21 | **147.00** |



PVM8



MVM12

## Vent pressure equalisation devices

Vent plugs/glands incorporate an internal membrane, designed to balance internal enclosure temperature and release pressure caused by differing internal temperatures to the outside ambient avoiding internal condensation without compromising the IP rating of the enclosure.

- Long service life in extreme environments
- Reduces fogging and internal condensation, improves heat emission efficiency in sealed enclosures

**Vent plugs** *(pressure equalisation for sealed enclosures)* **IP68**

| type | thread size | colour | influent pressure | mi/min P;7kpa | description | price |
|---|---|---|---|---|---|---|
| **Nylon PA66 - UL approved** *(Flammability UL94V-2)* | | | | | | |
| **PVM8** | M8 | grey | >5 bar | >1200 | screw-in vent plugs | **17.33** |
| **PVM12** | M12 | grey | >5 bar | >2200 | screw-in vent plugs | **17.33** |
| **PVM16** | M16 | grey | >5 bar | >4600 | screw-in vent plugs | **40.22** |
| **10106591** | M20 | grey | >5 bar | >5230 | screw-in vent plugs | **157.50** |
| **10106593** | M40 | grey | >5 bar | >6820 | screw-in vent plugs | **355.95** |
| **PVM8B** | M8 | black | >5 bar | >1200 | screw-in vent plugs | **17.33** |
| **PVM12B** | M12 | black | >5 bar | >2200 | screw-in vent plugs | **17.33** |
| **PVM16B** | M16 | black | >5 bar | >4600 | screw-in vent plugs | **40.22** |
| **Nickel plated brass** | | | | | | |
| **MVM8** | M8 | nickel | >5 bar | >1000 | screw-in vent plugs | **58.80** |
| **MVM12** | M12 | nickel | >5 bar | >2000 | screw-in vent plugs | **58.80** |
| **MVM16** | M16 | nickel | >5 bar | >3800 | screw-in vent plugs | **88.20** |






BCGM20G



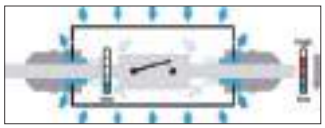


BCGM20B

**Ventilating gland** *(pressure equalization for sealed enclosures)* **IP67**

Vent glands are essential components used in various applications to equalize pressure and prevent moisture ingress in sealed enclosures, ensuring that the internal components are protected from environmental factors. Normally:

1. The enclosure becomes warm during use, and a temperature difference can develop between the inside and outside.
2. This difference creates a vacuum, drawing air in from outside.
3. If the air cools and pressure does not equalise, condensation may form, potentially causing electrical breakdowns or short circuits. Therefore:
4. Using the breathable cable gland balances the enclosure's internal pressure with the surrounding pressure, fully maintaining its verified protection class.



| type | thread Ø | colour | compress area (mm) | air flow rate | | description | price |
|---|---|---|---|---|---|---|---|
| **Breathable gland** *(compression gland and pressure equalisation element in one)* | | | | | | | |
| **BCGM12G** | M12 | grey | 4 - 8 | 14 l/h | PA66 | ventilating gland | **21.63** |
| **BCGM16G** | M16 | grey | 5 - 10 | 22 l/h | PA66 | ventilating gland | **23.94** |
| **BCGM20G** | M20 | grey | 6 - 12 | 42 l/h | PA66 | ventilating gland | **25.41** |
| **10100666** | M25 | grey | 9 - 17 | 65 l/h | PA66 | ventilating gland | **433.00** |
| **10100801** | M32 | grey | 13 - 21 | 115 l/h | PA66 | ventilating gland | **603.04** |
| **BCGM12B** | M12 | black | 4 - 8 | 14 l/h | PA66 | ventilating gland | **21.63** |
| **BCGM16B** | M16 | black | 5 - 10 | 22 l/h | PA66 | ventilating gland | **23.94** |
| **BCGM20B** | M20 | black | 6 - 12 | 42 l/h | PA66 | ventilating gland | **25.41** |
| **10100667** | M25 | black | 9 - 17 | 65 l/h | PA66 | ventilating gland | **433.00** |
| **10100802** | M32 | black | 13 - 21 | 115 l/h | PA66 | ventilating gland | **603.04** |

**Blind plugs for glands** for tight sealing of unused cable inlet

| type | Ø dia | colour | material | | description | price |
|---|---|---|---|---|---|---|
| • Operating temperature: | -40°C ...100°C | | | | | |
| **SPR-024-B** | 2.4 mm | black | EPDM | blind plugs | for unused glands | **1.05** |
| **SPR-034-B** | 3.4 mm | black | EPDM | blind plugs | for unused glands | **1.05** |
| **SPR-060-B** | 6.0 mm | black | EPDM | blind plugs | for unused glands | **3.05** |
| **SPR-071-B** | 7.0 mm | black | EPDM | blind plugs | for unused glands | **3.78** |
| **SPR-100-B** | 10 mm | black | EPDM | blind plugs | for unused glands | **3.78** |
| **SPR-120-B** | 12 mm | black | EPDM | blind plugs | for unused glands | **5.25** |
| **SPR-140-B** | 14 mm | black | EPDM | blind plugs | for unused glands | **5.25** |
| **SPR-158-B** | 15.8 mm | black | EPDM | blind plugs | for unused glands | **9.77** |
| **SPR-178-B** | 17.8 mm | black | EPDM | blind plugs | for unused glands | **9.77** |
| **SPR-215-B** | 21.5 mm | black | EPDM | blind plugs | for unused glands | **11.24** |
| **SPR-245-B** | 24.5 mm | black | EPDM | blind plugs | for unused glands | **12.71** |
| **SPR-306-B** | 30.6 mm | black | EPDM | blind plugs | for unused glands | **20.16** |



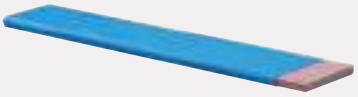
SPR...



Above ZAR prices do not include VAT. E&OE





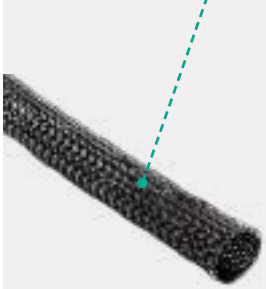












HFR-0...BK

## Heat shrink tubing

Provides an effective halogen-free, flexible, flame retardant, abrasion resistant insulation protection for cables and busbars in electrical and electronics applications.

| type | inside dia Ø | shrink ratio | after recovery dia Ø | after recovery wall thickness | description | roll length (meters) | price per roll |
|---|---|---|---|---|---|---|---|
| **JD-HFT - Halogen free heat-shrinkable tubing** | | | | | | | |
| General purpose heat shrink tubing for use in enclosed areas where a flame retardant, halogen-free environment is required. | | | | | | | |
| • Material: | Polyolefin | | | | | | |
| • Colour: | Black *(other colours available on request)* | | | | | | |
| • Shrink temperature: | 90°C | | | | | | |
| • Operating temperature: | -55°C...125°C | | | | | | |
| **JD-HFT015-0** | 1.5 mm | 3:1 | 0.5 | ≤ 0.40 mm | heat shrink tubing | 200 m | **921.90** |
| **JD-HFT030-0** | 3 mm | 3:1 | 1.0 | ≤ 0.55 mm | heat shrink tubing | 200 m | **1 102.50** |
| **JD-HFT060-0** | 6 mm | 3:1 | 2.0 | ≤ 0.60 mm | heat shrink tubing | 100 m | **1 092.00** |
| **JD-HFT090-0** | 9 mm | 3:1 | 3.0 | ≤ 0.70 mm | heat shrink tubing | 50 m | **828.45** |
| **JD-HFT120-0** | 12 mm | 3:1 | 4.0 | ≤ 0.70 mm | heat shrink tubing | 50 m | **1 014.30** |
| **JD-HFT180-0** | 18 mm | 3:1 | 6.0 | ≤ 0.80 mm | heat shrink tubing | 50 m | **1 848.00** |
| **JD-HFT240-0** | 24 mm | 3:1 | 8.0 | ≤ 1.00 mm | heat shrink tubing | 25 m | **1 617.00** |
| **JD-HFT390-0** | 39 mm | 3:1 | 13.0 | ≤ 1.25 mm | heat shrink tubing | 25 m | **2 971.50** |
| *Other colours (replace last digit **"0"** with: **"R"** (red) **"B"** (blue) **"W"** (white)* | | | | | | | **+ 10%** |
| **JDD-BT-1KV** | *heat-shrinkable bus bar insulation protection (medium wall)* | | | | | | |
| Track resistant polyolefin heat-shrinkable bus bar tubing used to protect and insulate rectangular, square or round bus bars – halogen free, low smoke. | | | | | | | |
| **Busbar tubing calculation:** *add four sides and divide by 3.4+10%* | | | | | | | |
| • Material: | Polyolefin | | | | | | |
| • Colour: | Black *(other colours available on request)* | | | | | | |
| • Shrink ratio: | 2:1 | | | | | | |
| • Shrink temperature: | 110°C | | | | | | |
| • Operating temperature: | -55°C...125°C | | | | | | |
| • Tensile strength: | ≥ 10.4MPa | | | | | | |
| • Elongation at break: | ≥ 500% | | | | | | |
| • Dielectric strength: | ≥ 25kV/mm | | | | | | |
| **JDDBT020-0** | 20.0 | 2:1 | 8 | 1.10 mm | heat shrink tubing | 100 m | **2 940.00** |
| **JDDBT030-0** | 30.0 | 2:1 | 12 | 1.10 mm | heat shrink tubing | 50 m | **2 320.50** |
| **JDDBT040-0** | 40.0 | 2:1 | 16 | 1.10 mm | heat shrink tubing | 50 m | **2 677.50** |
| **JDDBT050-0** | 50.0 | 2:1 | 20 | 1.10 mm | heat shrink tubing | 25 m | **1 627.50** |
| **JDDBT060-0** | 60.0 | 2:1 | 24 | 1.10 mm | heat shrink tubing | 25 m | **2 152.50** |
| **JDDBT080-0** | 80.0 | 2:1 | 28 | 1.20 mm | heat shrink tubing | 25 m | **3 013.50** |
| **JDDBT100-0** | 100.0 | 2:1 | 50 | 1.20 mm | heat shrink tubing | 25 m | **4 305.00** |
| *Other colours (replace last digit **"0"** with: **"R"** (red) **"B"** (blue) **"W"** (white)* | | | | | | | **+ 10%** |

## HFR - Expandable braided sleeving

Braided expandable sleeving provides excellent protection, durable abrasion resistance with excellent flame-retardant properties for the protection of wires, cables, wire harnesses, pipes and industrial hoses.

- Material: Polyester monofilament
- Standard colour: Black
- Operating temperature: -50°C...+150°C (melt point 230°C)
- Flammability: Flame retardant UL94 V-O
- Certified: RoHS, UL, CSA

| type | nominal size * | expanded range Ø min. | expanded range Ø max. | description | carton length | price |
|---|---|---|---|---|---|---|
| **HFR-008BK** | 8 mm | 5 mm | 16 mm | expandable braided sleeving | 100 m | **816.90** |
| **HFR-010BK** | 10 mm | 7 mm | 19 mm | expandable braided sleeving | 100 m | **1 165.50** |
| **HFR-012BK** | 12 mm | 8 mm | 24 mm | expandable braided sleeving | 50 m | **642.60** |
| **HFR-015BK** | 15 mm | 10 mm | 27 mm | expandable braided sleeving | 50 m | **897.75** |
| **HFR-020BK** | 20 mm | 14 mm | 30 mm | expandable braided sleeving | 50 m | **1 071.00** |
| **HFR-030BK** | 30 mm | 20 mm | 50 mm | expandable braided sleeving | 50 m | **1 827.00** |
| **HFR-040BK** | 40 mm | 30 mm | 60 mm | expandable braided sleeving | 50 m | **2 667.00** |
| **HFR-050BK** | 50 mm | 40 mm | 80 mm | expandable braided sleeving | 50 m | **3 444.00** |

* *Nominal size indicates flat width*

### Application tools for above products

| | | |
|---|---|---|
| **KD-8-3** | handheld hot knife to cut and seal braided sleeving *(to prevent fraying)* | **2 142.00** |
| **CS-800** | hot gun 100-590°C digital temperature control for heatshrink tubing | **1 554.00** |


M1011B


M1011V


M107G


1MR6372


1MR12572


1MR12574


1MR160134


3MR160164

## Distribution terminals *- (7,11,15 way)*

**General features:**

| | |
|---|---|
| Maximum operating temperature: | -5ºC...+85ºC (heat resistance to +130ºC) |
| Insert material: | Brass with zinc plated screws |
| Insulating body material: | Support material polyamide – cover polycarbonate |
| Mounting: | DIN rail mounting (EN50022) or screw down |
| Standards: | EN 60998-1, EN 60998-2-1 |

| type | No. ways | description | max. wire size (mm²) input | 10 | 16 | 25 | 35 | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Multi way terminal posts** | | | *(DIN rail mountable) 750V* | | | | | | | | |
| **M107V** | 7 | green (earth) bar | 2x16 | 5x | – | – | – | 59 | 19 | 34 | **55.65** |
| **M1011V** | 11 | green (earth) bar | 2x16 | 9x | – | – | – | 88 | 19 | 34 | **78.75** |
| **M1015V** | 15 | green (earth) bar | 2x16 | 13x | – | – | – | 114 | 19 | 34 | **102.90** |
| **M107B** | 7 | blue (neutral) bar | 2x16 | 5x | – | – | – | 59 | 19 | 34 | **55.65** |
| **M1011B** | 11 | blue (neutral) bar | 2x16 | 9x | – | – | – | 88 | 19 | 34 | **78.75** |
| **M1015B** | 15 | blue (neutral) bar | 2x16 | 13x | – | – | – | 114 | 19 | 34 | **102.90** |
| **M107G** | 7 | grey (phase) bar | 2x16 | 5x | – | – | – | 59 | 19 | 34 | **55.65** |
| **M1011G** | 11 | grey (phase) bar | 2x16 | 9x | – | – | – | 88 | 19 | 34 | **78.75** |
| **M1015G** | 15 | grey (phase) bar | 2x16 | 13x | – | – | – | 114 | 19 | 34 | **102.90** |

## Multi-pole protected distribution terminals *(DIN rail mountable) 750V*

### 1MR series - Distribution terminals

- DIN rail or chassis mounting
- Low profile 45 mm deep *(height of standard MCBs)*
- Supplied with insulated DIN rail cover
- Rated voltage: 750V

| type | No. ways | amps | no. bars | max. wire size (mm²) input | 10 | 16 | 25 | 35 | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2-pole -** (1Ph+N) | | | | | | | | | | | | |
| *Ipk 12kA - Icc rms 6kA - Icw rms (1s) 1.9kA* | | | | | | | | | | | | |
| **1MR6372** | 7 | 63A | 2 | 2x16 | 5x | – | – | – | 68 | 59 | 45 | **137.55** |
| **1MR63112** | 11 | 63A | 2 | 2x16 | 9x | – | – | – | 68 | 88 | 45 | **170.10** |
| *Ipk 22kA - Icc rms 11kA - Icw rms (1s) 6kA* | | | | | | | | | | | | |
| **1MR12572** | 7 | 125A | 2 | 35 mm² | 5x | – | 1x | – | 47 | 68 | 45 | **225.75** |
| **1MR125112** | 11 | 125A | 2 | 35 mm² | 6x | 2x | 2x | – | 47 | 105 | 45 | **323.40** |
| **1MR125152** | 15 | 125A | 2 | 35 mm² | 10x | 2x | 2x | – | 47 | 134 | 45 | **375.90** |
| **4-pole -** (3ph+N) | | | | | | | | | | | | |
| *Ipk 22kA - Icc rms 11kA - Icw rms (1s) 6kA* | | | | | | | | | | | | |
| **1MR12574** | 7 | 125A | 4 | 35 mm² | 5x | – | 1x | – | 98 | 72 | 45 | **348.60** |
| **1MR125114** | 11 | 125A | 4 | 35 mm² | 6x | 2x | 2x | – | 98 | 109 | 45 | **500.85** |
| **1MR125154** | 15 | 125A | 4 | 35 mm² | 10x | 2x | 2x | – | 98 | 138 | 45 | **599.55** |

*Additional terminal bars **M107/1011/1015** can easily be clipped onto above distribution terminals*

### 160A stepped distribution block 70 mm deep profile

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Ipk 24kA - Icc rms 12kA - Icw rms (1s) 8kA* | | | | | | | | | | | | |
| **1MR160134** | 13 | 160A | 4 | 50 mm² | – | 8x | 2x | 2x | 136 | 186 | 70 | **1 134.00** |

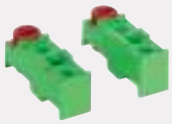
## 3MR series - Distribution terminal

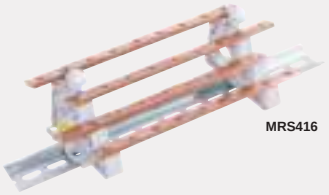
**Separated incoming terminals** *(two extra large incoming phase terminals on either side)*

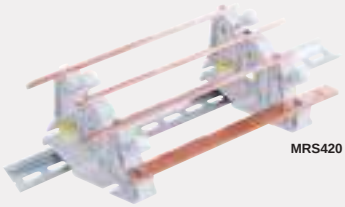
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Ipk 22kA - Icc rms 11kA - Icw rms (1s) 6kA* | | | | | | | | | | | | |
| **3MR125164** | 16 | 125A | 4 | 35 mm² | 11x | 2x | 2x | – | 107 | 202 | 45 | **799.05** |
| *Ipk 24kA - Icc rms 12kA - Icw rms (1s) 8kA* | | | | | | | | | | | | |
| **3MR160164** | 16 | 160A | 4 | 50 mm² | 11x | – | 2x | 2x | 107 | 233 | 45 | **1 638.00** |

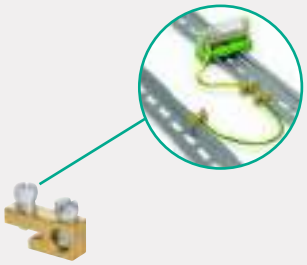


Above ZAR prices do not include VAT. E&OE


MRS122


MRS416


MRS420


MTB

## Busbar supports

The MRS range of busbar supports are four pole (3Ph+N) with stepped phases for easy access and termination. Ideally combined with drilled and threaded copper busbars to make up distribution terminals of any size.

Insulating protection covers are available *(in one-meter lengths)* to provide protection against accidental touch of the bars. Ipk ratings are influenced by bar dimensions and the distance between supports.

**General features:**

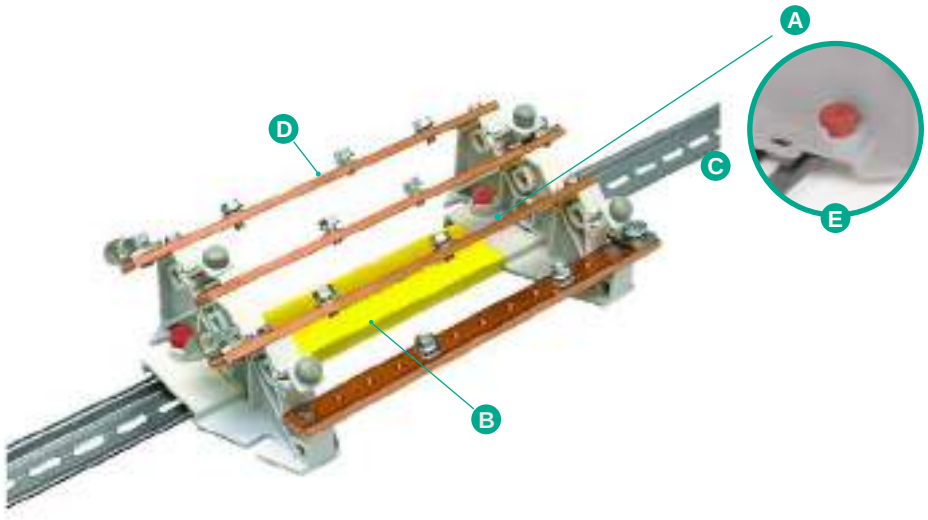
| | |
|---|---|
| Maximum operating temperature: | +85ºC |
| Heat resistance: | +130ºC |
| Insulating body material: | Polyamide |
| Mounting: | DIN rail or chassis mount |
| Standards: | CEI EN 17-13/1 EN 60439 |

| type | amps | no. bars | max bar width | description | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|
| **Multi-pole busbar supports** | | | | | | | | |
| • DIN rail or chassis mount<br>• With mounting accessories for *(optional)* protection cover and busbar mounting | | | | | | | | |
| **2-pole supports (1Ph+N)** | | | | *supplied in pairs (2pcs)* | | | | |
| **MRS122** | 65A | 2 | 12 mm | 1P+N busbar supports (2 pcs) | 47 | 14 | 18 | **284.55** |
| **4-pole stepped supports (3Ph+N)** | | | | *supplied in 4 pcs (2 pair per set)* | | | | |
| **160A - 4-pole busbar support** | | | | | | | | |
| **MRS416*** | 160A | 4 | 16 mm | 3P+N busbar supports *(4 pcs)* | 90 | 25 | 57 | **1 041.60** |
| **250A - 4-pole busbar support** | | | | | | | | |
| **MRS420*** | 250A | 4 | 20 mm | 3P+N busbar supports *(4 pcs)* | 132 | 67 | 59 | **1 449.00** |
| * With eccentric pivot for safe mounting on DIN rail | | | | | | | | |
| **Terminal protection covers** *(for above supports)* | | | | | | | | |
| **MRC2150** | screen | | | protection cover for busbar support **MRS416** *(1 meter length)* | | | | **376.95** |
| **MRC2250** | screen | | | protection cover for busbar support **MRS420** *(1 meter length)* | | | | **478.80** |
| **MTB** | DIN rail earthing terminal | | | *(for connecting earth wire to DIN rail)* | | | | **24.26** |

## Busbar - System

**Example of a complete MRS busbar system:**

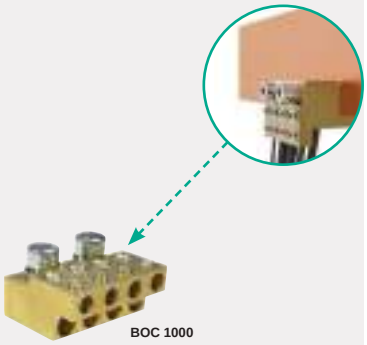
**A** - **MRS420** - 4-pole busbar support
**B** - DIN rail protection screen cover *(on request)*
**C** - Perforated DIN rail, see page **L-13**
**D** - Thread copper bar, see page **L-36**
**E** - Eccentric pin for fixing the terminal block on the DIN rail guarantees maximum safety and reliability

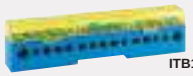


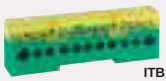

MRS1501


MRS3005

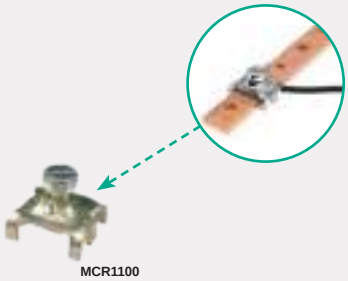

MRS3500


BOC 1000


ITB1025


ITB1035


ITB1000


MCR1100

## Brass earthing and neutral terminals

- Brass bars with galvanised steel screws *(with cross head)*

| type | wire sizes mm² | | | | No. of ways | screw Ø | dimensions (mm) | | | price |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1.5...4 | 2.5...6 | 4...16 | 16...35 | | | (H) | (W) | (L) | |
| **Single connection per hole** | | | | | | | | | | |
| **MRS1501** | – | 113 | – | – | 113 | M4 | 9 | 6 | 1 meter | **489.30** |
| **MRS1506** | – | – | 116 | – | 116 | M5 | 12 | 8 | 1 meter | **658.35** |
| **1300110** | rail or base mount double support for brass rod | | | | | | | | | **12.18** |
| **Double connection per hole** | M4 mounting holes | | | | | | | | | |
| **MRS3000** | – | 2 x 6 | – | – | 12 | M5 | 9 | 19 | 102 | **170.10** |
| **MRS3005** | – | 2 x 12 | – | – | 24 | M5 | 9 | 19 | 144 | **231.00** |
| **MRS3010** | – | 2 x 24 | – | – | 48 | M5 | 9 | 19 | 230 | **388.50** |

## Chassis mounting earthing terminals

- Universal fixing: chassis mount or direct copper bar mount
- M6 mounting screws and input termination supplied with nuts, spacers and washers

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **MRS2000** | 8 | 8 | 3 | 1 | 20 | M5 | 6 | 13 | 215 | **392.70** |
| **MRS5000** | 19 | 24 | 6 | 1 | 50 | M5 | 6 | 13 | 462 | **585.90** |

**Double connection per hole**

- Universal fixing: chassis mount or direct copper bar mount
- M8 bolt to accommodate cable lug up to 95 mm²
- M6 mounting screws supplied with nuts, spacers and washers

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **MRS3500** | 2 x 14 | 2 x 19 | 2 x 7 | 2 x 1 | 82 | M5 | 13 | 20 | 462 | **1 249.50** |

## Brass tap-off distribution block - direct busbar mounted *(drilled or clamp-on)*

- For direct connection onto Busbar, to tap off cables *(4 x 2.5...25 mm² + 4 x 4...35 mm²)*

| | | | |
|---|---|---|---|
| **BOC 1000** | brass bolt-on busbar mounting terminal | *(8 x outputs)* | **455.70** |
| **BOC 1005** | brass clamp-on busbar mounting terminal | *(for 5 mm bars)* | **726.60** |
| **BOC 1010** | brass clamp-on busbar mounting terminal | *(for 10 mm bars)* | **915.60** |

## Distribution terminals

**Single pole distribution terminals** *DIN rail mountable - 7, 11, 15 way*

| | |
|---|---|
| Insulating body: | PA 66 UL94-V0 |
| Insert material: | Brass, screws galvanised steel |
| Mounting: | DIN rail mounting |
| Base colours: | Green, Blue, Grey |
| Protection cover: | PC UL94-V0, transparent yellow |
| Standards: | EN 60947-7-1 |

| type | no. ways | base colour | wire size mm² In (2x) | No. | Out | description | length (mm) | price |
|---|---|---|---|---|---|---|---|---|
| **Unipolar terminal blocks** | | | | | | | | |
| **ITB1030** | 7 | green | 2.5 - 16 | 5 x | 1.5 - 6 | earth distribution block | 63 | **48.30** |
| **ITB1035** | 11 | green | 2.5 - 16 | 9 x | 1.5 - 6 | earth distribution block | 95 | **68.25** |
| **ITB1040** | 15 | green | 2.5 - 16 | 13 x | 1.5 - 6 | earth distribution block | 125 | **86.10** |
| **ITB1015** | 7 | blue | 2.5 - 16 | 5 x | 1.5 - 6 | neutral distribution block | 63 | **48.30** |
| **ITB1020** | 11 | blue | 2.5 - 16 | 9 x | 1.5 - 6 | neutral distribution block | 95 | **68.25** |
| **ITB1025** | 15 | blue | 2.5 - 16 | 13 x | 1.5 - 6 | neutral distribution block | 125 | **86.10** |
| **ITB1000** | 7 | grey | 2.5 - 16 | 5 x | 1.5 - 6 | phase distribution block | 63 | **48.30** |
| **ITB1005** | 11 | grey | 2.5 - 16 | 9 x | 1.5 - 6 | phase distribution block | 95 | **68.25** |
| **ITB1010** | 15 | grey | 2.5 - 16 | 13 x | 1.5 - 6 | phase distribution block | 125 | **86.10** |
| **ITB2000** | DIN rail mount support for horizontal mounting of up to 4 of above terminals | | | | | | | **19.32** |

## Spider connector for threaded bars 12 mm wide

- Material: Passivated galvanised steel
- Connections: 1 or 2 cables 1.5…10 mm²
- Complete with: M5 x 12 screws

| | | | |
|---|---|---|---|
| **MCR1100** | spider connector to connect cables to 12 mm threaded bar | 1.5…10 mm² | **14.18** |



Above ZAR prices do not include VAT. E&OE

# Distribution blocks & threaded copper bars



Distribution blocks permit simple termination from one main incomer supply (up to 500A) to be distributed to many other lower current outputs downstream. Equipped with an opening transparent protection screen for easy inspection of terminations.

## RP series - Power distribution blocks

- Insulating body: PA 66 UL 94-V0, Cover: PC, transparent yellow.
- Conduction block: Tinned copper
- Index protection: IP20
- Compliant with standard EN 60947-7-1



RPU2995

**Single pole power distribution blocks** - *can receive Cable or Flexible/rigid bars (in some cases)*

| type | rated current (A) | feed-in terminals max. cable (mm²) | feed-in terminals busbar W (mm) | max. output terminals (mm²) – | 6 | 10 | 16 | 35 | Icw (kA) | Ipk (kA) | dimensions (mm) (H) | (W) | (D) | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RPU2995** | 80A | 6…16 | – | – | 4x | – | 2x | – | 3 | 22 | 66 | 30 | 46 | **220.50** |
| **RPU3000** | 125A | 10…35 | 9 | – | – | – | 9x | – | 4.4 | 30 | 75 | 40 | 48 | **462.00** |
| **RPU3005** | 160A | 10…70 | 13 | – | – | – | 9x | – | 11 | 30 | 75 | 40 | 48 | **651.00** |
| **RPU3010** | 250A | 35…120 | 15.5 | – | – | 4x | 5x | 2x | 21 | 51 | 96 | 47 | 50 | **892.50** |
| **RPU3015** | 400A | 95…185 | 20 | – | – | 4x | 5x | 2x | 21 | 51 | 96 | 47 | 50 | **997.50** |
| **RPU3020** | 500A | – | 24 | – | – | 4x | 5x | 2x | 21 | 51 | 96 | 47 | 50 | **1 081.50** |

**Three pole power distribution blocks** - *can receive Cable or Flexible/rigid bars (in some cases)*

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RPT3000** | 125A | 10…35 | 9 | – | – | – | 6x | – | 4.4 | 30 | 75 | 85 | 48 | **1 113.00** |
| **RPT3005** | 160A | 10…70 | 13 | – | – | – | 6x | – | 11 | 30 | 75 | 85 | 48 | **1 312.50** |



RPQ1010

## Multi-pole distribution blocks

DIN rail mountable EN 60947-7-1

Mounting: DIN rail or chassis mounting
Insulating structure: Self-extinguishing to UL94-V0 - Insulation between phases
Conductor material: Brass conductors - galvanised steel screws
Protection cover: PC UL94-VO, transparent yellow - front removal



RPQ1018

**4-pole (3ph+N) distribution blocks** *DIN rail mounting*

**Low profile version** *50 mm deep (fits into same space as standard MCBs)*

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RPQ1000** | 125A | 10...35 | – | – | 5 | – | 1 | – | 4.2 | 20 | 84 | 66 | 50 | **367.50** |
| **RPQ1005** | 125A | 10...35 | – | – | 7 | – | 2 | 1 | 4.2 | 20 | 84 | 100 | 50 | **472.50** |
| **RPQ1010** | 125A | 10...35 | – | – | 11 | – | 2 | 1 | 4.2 | 20 | 84 | 132 | 50 | **640.50** |

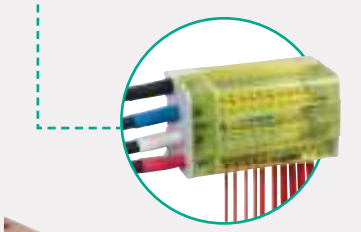
**Separated input terminals**

**Front entry input terminals** - *(2 phases on each side)*

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RPQ1015** | 160A | 10...50 | – | – | – | – | 8 | 3 | 9 | 22 | 85 | 168 | 70 | **1 270.50** |

**Side entry input terminals** - *(all inputs from left side)*

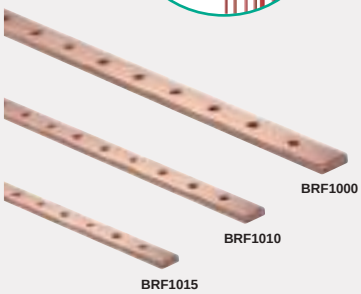
| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RPQ1018** | 160A | 10...50 | – | – | – | – | 8 | 3 | 9 | 22 | 95 | 154 | 67 | **1 396.50** |



## Threaded copper bars

*(bolts/screws, washers not supplied)*

- Pre-punched and threaded copper bars *(ready for use)*
- Electrolytic copper Cu-ETP 99.90% *(rounded corners)*
- Current (A) based on ΔT temperature rise as per DIN 43671 *(reference room temperature of 35°C)*



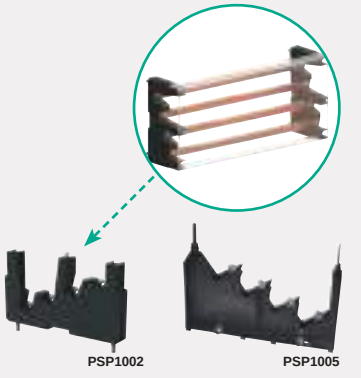
BRF1000

BRF1010

BRF1015

| type | In (A) ΔT 30°C | In (A) ΔT 50°C | screw Ø | hole centers | description | dimensions (mm) (H) | (W) | (L) | price (ea) |
|---|---|---|---|---|---|---|---|---|---|
| **BRF1000** | 160A | 212A | M5 | 18 mm | threaded copper busbar | 12 | 4 | 1 meter | **682.50** |
| **BRF1005** | 183A | 241A | M5 | 18 mm | threaded copper busbar | 12 | 5 | 1 meter | **840.00** |
| **BRF1010** | 218A | 289A | M6 | 25 mm | threaded copper busbar | 15 | 5 | 1 meter | **987.00** |
| **BRF1015** | 274A | 363A | M6 | 25 mm | threaded copper busbar | 20 | 5 | 1 meter | **1 197.00** |
| **BRF1020** | 400A | 530A | M6 | 25 mm | threaded copper busbar | 32 | 5 | 1 meter | **1 921.50** |
| **BRF1045** | 573A | 756A | M8 | 25 mm | threaded copper busbar | 30 | 10 | 1 meter | **3 675.00** |

## Busbar supports



PSP1002 PSP1005

**4-pole (3ph+N) insulated busbar supports**

- Polyamide 66 reinforced with 30% fiberglass
- Self-extinguishing UL 94-V0 - Halogen free
- Working temperature: -40°C ...+130°C
- Glow wire test: 960°C
- Supplied with screws and nuts for mounting on panels

**250A - DIN rail or chassis mount busbar support** *(1 piece per pack)*

| | | | | | |
|---|---|---|---|---|---|
| **PSP1002** | 250A | busbar support for 15/20 mm x 5 mm bars | 190 | 20 | 105 | **336.00** |

**400A - panel mount busbar support** *(2 piece per pack)*

| | | | | | | |
|---|---|---|---|---|---|---|
| **PSP1005** | 400A | Busbar support for 15/20/30 mm x 5/10 mm bars | 216 | 34 | 117 | **1 386.00** |


ISO...


CLN...


SM...


SM...


SM...


SM...


ISO3005

## Busbar standoff insulators

The "stand off" insulator is used as an insulating support for active conductors to guarantee excellent electrical insulation capability; it can be used as a support for electrical devices, giving high mechanical resistance values, as well as a spacing and/or stiffening element of a system made of conductor bars *(copper and/or aluminium)*.

**General features:**

- Insulation: Polyamide 66 fibreglass reinforced (30%) (Halogen free)
- Self extinguishing: VO-UL94
- Glow wire test: 960°C
- Threaded inserts: Galvanized steel
- Rated voltage: 1000 VAC / 1500 VDC
- Working temperature: -40°C...130°C
- Colour: Black
- Conformity: IEC/EN60004-1 and IEC/EN 61439-1

| type | height (H) | Ø width socket | threaded | torque (Nm) | description | price |
|---|---|---|---|---|---|---|
| **ISO - Insulators** | | *injection moulded* | | | *UL approved (file No. 300607)* | |
| **ISO2010** | 20 mm | 15 mm | M6 | 8 | busbar standoff insulators | **45.15** |
| **ISO2020** | 25 mm | 15 mm | M6 | 10 | busbar standoff insulators | **50.40** |
| **ISO2030** | 30 mm | 26 mm | M8 | 25 | busbar standoff insulators | **89.25** |
| **ISO2040** | 35 mm | 28 mm | M8 | 25 | busbar standoff insulators | **95.55** |
| **ISO2055** | 40 mm | 28 mm | M8 | 25 | busbar standoff insulators | **124.95** |
| **ISO2070** | 45 mm | 33 mm | M8 | 25 | busbar standoff insulators | **138.60** |
| **ISO2085** | 50 mm | 29 mm | M8 | 25 | busbar standoff insulators | **169.05** |
| **ISO2100** | 60 mm | 42 mm | M10 | 50 | busbar standoff insulators | **212.10** |
| **CLN - Spacer columns** | | *Injection moulded* | | | *UL approved (file No. 300607)* | |
| **ISO2140** | 20 mm | 20 mm | M6 | 8 | spacing columns | **52.50** |
| **ISO2155** | 25 mm | 20 mm | M6 | 8 | spacing columns | **54.60** |
| **ISO2170** | 30 mm | 20 mm | M6 | 8 | spacing columns | **54.60** |
| **ISO2185** | 35 mm | 20 mm | M6 | 10 | spacing columns | **59.85** |
| **ISO2200** | 40 mm | 20 mm | M6 | 10 | spacing columns | **66.15** |
| **ISO2270** | 55 mm | 30 mm | M6 | 10 | spacing columns | **194.25** |
| **ISO2280** | 65 mm | 30 mm | M6 | 10 | spacing columns | **217.35** |
| **ISO2245** | 30 mm | 30 mm | M8 | 25 | spacing columns | **134.40** |
| **ISO2257** | 40 mm | 30 mm | M8 | 25 | spacing columns | **137.55** |
| **ISO2267** | 50 mm | 30 mm | M8 | 25 | spacing columns | **180.60** |
| **ISO2295** | 70 mm | 30 mm | M8 | 25 | spacing columns | **236.25** |

## SM - Econo busbar insulators

**General features:**

- Insulation: Polyester, fibreglass reinforced (20%)
- Self extinguishing: VO-UL94
- Threaded inserts: Galvanized steel
- Rated voltage: 1000 VAC / 1500 VDC
- Working temperature: -20°C...120°C
- Colour: Red RAL 3031

| | | | | | | |
|---|---|---|---|---|---|---|
| **SM20** | 20 mm | 15 mm | M6 | 6 | busbar standoff insulators | **26.46** |
| **SM25** | 25 mm | 23 mm | M6 | 8 | busbar standoff insulators | **28.04** |
| **SM30** | 30 mm | 26 mm | M8 | 10 | busbar standoff insulators | **34.65** |
| **SM35** | 35 mm | 28 mm | M8 | 13 | busbar standoff insulators | **37.70** |
| **SM40** | 40 mm | 34 mm | M8 | 13 | busbar standoff insulators | **50.40** |
| **SM45** | 45 mm | 28 mm | M8 | 13 | busbar standoff insulators | **53.55** |
| **SM51** | 51 mm | 29 mm | M8 | 27 | busbar standoff insulators | **55.65** |
| **SM60** | 60 mm | 34 mm | M10 | 27 | busbar standoff insulators | **101.85** |
| **SM76** | 76 mm | 36 mm | M10 | 54 | busbar standoff insulators | **112.35** |

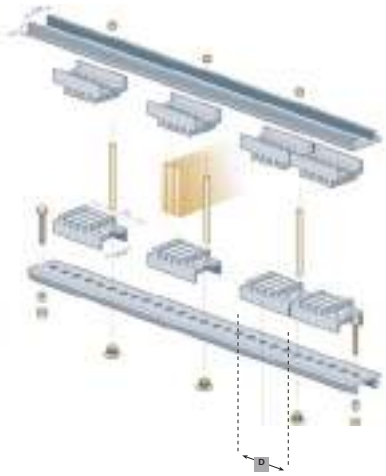
## Threaded stud kits for insulators

- Galvanized steel class 8.8 *(complete with threaded stud, nut, flat washer and spring lock washer)*

| type | length (mm) | Ø | description | price |
|---|---|---|---|---|
| **ISO3005** | 30 mm | M6 | threaded stud kit for insulators | **48.30** |
| **ISO3015** | 35 mm | M8 | threaded stud kit for insulators | **63.00** |
| **ISO3020** | 40 mm | M10 | threaded stud kit for insulators | **72.45** |



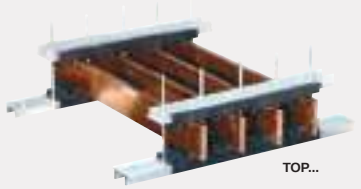
Above ZAR prices do not include VAT. E&OE



**TOP - Universal busbar support – up to 4500A** (IEC 60439-1)

- Universal busbar support system
- Adjustable distance between phases
- High short-circuit strength up to 100kA *(see **Annex-11** for ratings)*
- Non-magnetic aluminium alloy profile (EN AW-6060) prepunched *(12.5 mm pitch)*
- Quick and simplified universal fitting - cost effective
- For bars 30-120 mm wide / 5 or 10 mm thick
- Type tested according to IEC 60439-1 certification: ACAE LOVAG (65 / 75 / 100kA eff 1 sec)

| type | for busbar thickness | no. bars | | description | price |
|---|---|---|---|---|---|
| **Ω TOP - Universal busbar support –** up to 4500A (IEC 60439-1) | | | | | |
| **Three pole system kits** *(3Ph)* | | | | | |
| **Supplied with:** | Insulated supports (6) and all screws, nuts, washers | | | | |
| **TOP1005** | 5 mm | 1 - 2 | TOP2/5T | universal busbar support kit | **489.30** |
| **TOP1025** | 10 mm | 1 | TOP1/10T | universal busbar support kit | **485.10** |
| **TOP1035** | 10 mm | 1 - 2 | TOP2/10T | universal busbar support kit | **569.10** |
| **TOP1045** | 10 mm | 1 - 3 | TOP3/10T | universal busbar support kit | **745.50** |
| **Four pole system kits** *(3Ph+N)* | | | | | |
| **Supplied with:** | Insulated supports (8) and all screws, nuts, washers | | | | |
| **TOP1010** | 5 mm | 1 - 2 | TOP2/5TN | universal busbar support kit | **618.45** |
| **TOP1030** | 10 mm | 1 | TOP1/10TN | universal busbar support kit | **630.00** |
| **TOP1040** | 10 mm | 1 - 2 | TOP2/10TN | universal busbar support kit | **729.75** |
| **TOP1050** | 10 mm | 1 - 3 | TOP3/10TN | universal busbar support kit | **955.50** |
| **Accessories** | | | | | |
| **TOP1000** | | | | pre-punched aluminium profile *(12.5 mm pitch)* *(2 metre length)* | **663.60** |
| **TOP1100** | | | | bracket for horizontal mounting of busbar system profiles | **189.00** |
| **TOP1105** | | | | bracket for vertical mounting of busbar system profiles | **129.15** |
| **TOP1055** | | | | rislan tube to insulate tie rods *(only required for minimum distance)* | **19.32** |



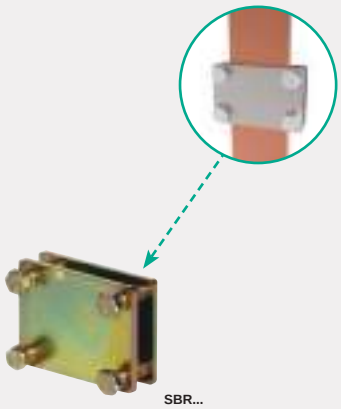

**TOP Junior - Fixed busbar support –** up to 1600A (IEC 61439-2)




- Universal busbar support system
- Distance between phases 70 mm
- High short-circuit strength up to 60kA *(see **Annex-11** for ratings)*
- Polyamide 6/6 reinforced with 30% fibreglass - self-extinguishing UL 94-V0
- Single reference for use with 5 or 10 mm thick bars
- For bars 30-80 mm wide / 5 or 10 mm thick
- Type tested according to IEC 61439-2 certification: ACAE LOVAG (65kA eff 1 sec)

| | | | | | |
|---|---|---|---|---|---|
| **Four pole system kit** *(3Ph+N)* | | | | | |
| **Supplied with:** | Insulated supports (2) and all screws, nuts, washers | | | | |
| **TOP2000** | 5/10 mm | 2/1 | TOP J 5 - 10 | universal busbar support kit | **1 564.50** |

**Busbar clamps** *(galvanized steel 5 mm thick)*




- Permits direct connection of flexible and solid bars, from main bar *(without drilling)*

| type | max. bar width | flexi bar width | plate dimensions | description | price |
|---|---|---|---|---|---|
| **Rectangular busbar clamps** | | | | | |
| **SBR1000** | 50 mm | 20/24 mm | 77 x 51 mm | busbar connection clamps | **286.65** |
| **SBR1005** | 50 mm | 32 mm | 77 x 59 mm | busbar connection clamps | **287.70** |
| **SBR1010** | 50 mm | 40 mm | 77 x 67 mm | busbar connection clamps | **291.90** |
| **SBR1020** | 80 mm | 32 mm | 107 x 59 mm | busbar connection clamps | **310.80** |
| **SBR1025** | 80 mm | 50 mm | 107 x 77 mm | busbar connection clamps | **319.20** |
| **Square busbar clamps** | | | | | |
| **SBQ1000** | 30 mm | 30 mm | 53 x 53 mm | busbar connection clamps | **313.95** |
| **SBQ1005** | 40 mm | 40 mm | 63 x 63 mm | busbar connection clamps | **330.75** |
| **SBQ1015** | 63 mm | 63 mm | 90 x 90 mm | busbar connection clamps | **422.10** |
| **SBQ1020** | 80 mm | 80 mm | 115 x 115 mm | busbar connection clamps | **519.75** |
| **SBQ1025** | 100 mm | 100 mm | 135 x 135 mm | busbar connection clamps | **617.40** |

***Please note:*** *Prices of copper products are based on the London Metal Exchange and will vary from time to time. Consult our sales department for the latest pricing before placing orders.*

Made in Italy TEKNO MEGA

## Flexible copper busbar

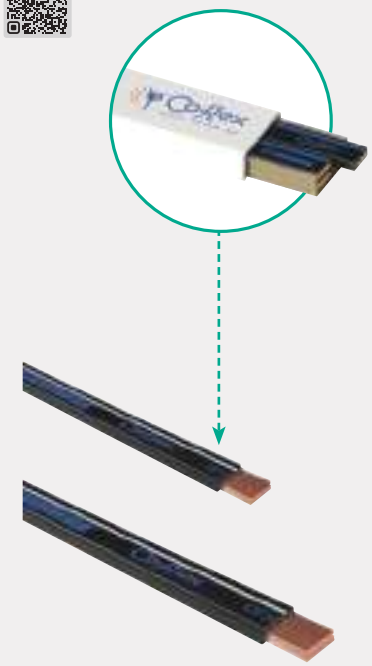


### Coflex series - Insulated flexible busbars

**COFLEX** is designed with high conductivity electrolytic copper laminates (CuETP), protected within a durable highly resistant self extinguishing PVC insulation, guaranteeing excellent electrical insulation in aggressive high temperature environments.

- Conductor: Electrolytic copper Cu-ETP 99.90% *(laminate thickness 0.8 - 1.0 mm)*
- Insulation: Self-extinguishing PVC UL 94-V0 *(thickness 2 mm)*
- Dielectric rigidity: 20 kV / mm
- Max. elongation: 365%
- Rated voltage: 1000 VAC / 1500 VDC
- Working temperature: -40°C...+105°C
- Standard length: 2 meters

Saving of time · Footprint Reduced · Saving of copper




| type | conductor size (mm) | | | | | | ΔT (°K) see ***Annex-13*** max. current capacity (A) at ΔT (°K) as per IEC 439-1 | | | | | price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | width | No. Laminations | thick | total thickness | cross section (mm²) | length (metre) | 65°C | **50°C** | 40°C | 30°C | 20°C | |
| **Insulated flexible busbars** *(2 metre lengths)* | | | | | | | | | | | | |
| **CFX 1005** | 9 | 3 | 0.8 | 2.4 | 21.6 | 2 | 160 | **140** | 125 | 108 | 89 | **588.00** |
| **CFX 1020** | 9 | 6 | 0.8 | 4.8 | 43.2 | 2 | 285 | **250** | 224 | 194 | 158 | **1 081.50** |
| **CFX 1023** | 13 | 6 | 0.5 | 3 | 39 | 2 | 285 | **250** | 224 | 194 | 158 | **945.00** |
| **CFX 1035** | 15.5 | 4 | 0.8 | 3.2 | 49.6 | 2 | 365 | **320** | 286 | 248 | 202 | **1 218.00** |
| **CFX 1045** | 15.5 | 6 | 0.8 | 4.8 | 74.4 | 2 | 456 | **400** | 358 | 310 | 253 | **1 795.50** |
| **CFX 1060** | 20 | 3 | 1.0 | 3 | 60 | 2 | 399 | **350** | 313 | 271 | 221 | **1 449.00** |
| **CFX 1070** | 20 | 5 | 1.0 | 5 | 100 | 2 | 490 | **430** | 385 | 333 | 272 | **2 310.00** |
| **CFX 1076** | 20 | 8 | 1.0 | 8 | 160 | 2 | 638 | **560** | 501 | 434 | 354 | **3 580.50** |
| **CFX 1090** | 24 | 3 | 1.0 | 3 | 72 | 2 | 456 | **400** | 358 | 310 | 253 | **1 701.00** |
| **CFX 1100** | 24 | 5 | 1.0 | 5 | 120 | 2 | 581 | **510** | 456 | 395 | 323 | **2 740.50** |
| **CFX 1115** | 24 | 10 | 1.0 | 10 | 192 | 2 | 912 | **800** | 716 | 620 | 506 | **5 229.00** |
| **CFX 1135** | 32 | 5 | 1.0 | 5 | 160 | 2 | 741 | **650** | 581 | 503 | 411 | **3 580.50** |
| **CFX 1145** | 32 | 8 | 1.0 | 8 | 256 | 2 | 992 | **870** | 778 | 674 | 550 | **5 701.50** |
| **CFX 1150** | 32 | 10 | 1.0 | 10 | 320 | 2 | 1163 | **1020** | 912 | 790 | 645 | **7 507.50** |
| **CFX 1170** | 40 | 5 | 1.0 | 5 | 200 | 2 | 884 | **775** | 693 | 600 | 490 | **4 609.50** |
| **CFX 1180** | 40 | 8 | 1.0 | 8 | 320 | 2 | 1180 | **1035** | 926 | 802 | 655 | **7 266.00** |
| **CFX 1185** | 40 | 10 | 1.0 | 10 | 400 | 2 | 1343 | **1178** | 1054 | 912 | 745 | **9 145.50** |
| **CFX 1200** | 50 | 5 | 1.0 | 5 | 250 | 2 | 1055 | **925** | 827 | 717 | 585 | **5 859.00** |
| **CFX 1210** | 50 | 8 | 1.0 | 8 | 400 | 2 | 1357 | **1190** | 1064 | 922 | 753 | **9 282.00** |
| **CFX 1215** | 50 | 10 | 1.0 | 10 | 500 | 2 | 1573 | **1380** | 1234 | 1069 | 873 | **11 781.00** |
| **CFX 1230** | 63 | 5 | 1.0 | 5 | 315 | 2 | 1209 | **1060** | 948 | 821 | 670 | **7 539.00** |
| **CFX 1240** | 63 | 8 | 1.0 | 8 | 504 | 2 | 1596 | **1400** | 1252 | 1084 | 885 | **11 781.00** |
| **CFX 1245** | 63 | 10 | 1.0 | 10 | 630 | 2 | 1391 | **1615** | 1444 | 1251 | 1021 | **14 668.50** |
| **CFX 1260** | 80 | 5 | 1.0 | 5 | 400 | 2 | 1459 | **1280** | 1145 | 991 | 810 | **7 864.50** |
| **CFX 1270** | 80 | 8 | 1.0 | 8 | 640 | 2 | 1833 | **1608** | 1438 | 1246 | 1017 | **13 282.50** |
| **CFX 1275** | 80 | 10 | 1.0 | 10 | 800 | 2 | 2028 | **1779** | 1591 | 1378 | 1125 | **16 054.50** |
| **CFX 1285** | 100 | 5 | 1.0 | 5 | 500 | 2 | 1750 | **1535** | 1373 | 1189 | 971 | **11 896.50** |
| **CFX 1300** | 100 | 10 | 1.0 | 10 | 1000 | 2 | 2394 | **2100** | 1878 | 1627 | 1328 | **23 331.00** |

| **Derating coefficient for bars in parallel** | | | |
|---|---|---|---|
| Number of bars | 2 bars | 3 bars | 4 bars |
| Coefficient to use x | 1.8 | 2.5 | 3.2 |




### Accessories

**Simple support with spacer**

- For use with insulated flexible bars up to 32 x 10 mm
- Possibility to fit up to 4 flexible bars
- Mounts into panel board by means of screw *(not supplied)* inserted at the base of spacer
- Excellent heat dissipation due to the spacing between bars

**DZP3000** panel mount spacer and overlapping support for flexible bars up to 32 x 10 mm **63.00**



Above ZAR prices do not include VAT. E&OE

# Flexible copper braided links

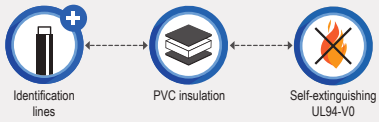


**Insulated copper braided links** *highly flexible braided copper link with PVC insulation*

**No cutting - no stripping - no lug - no crimping**

**J-LINK** is a ready-to-use flexible prefabricated shunt made of tinned copper braid, coated with PVC insulation. for the quickest, most convenient solution to create electrical connections from 125 to 630 A.

- Conductor: Tinned electrolytic copper braid Cu-ETP 99.90% *(wire strand 0.20 mm)*
- Insulation: Self-extinguishing PVC UL94V0 *(thickness 1.8 - 2 mm)*
- Dielectric rigidity: 20 kV / mm
- Rated voltage: 1000 VAC / 1500 VDC
- Working temperature: -40°C ... +105°C
- Standard length: 330 ... 1030 mm lengths

















| type | conductor size (mm) width | thickness | length | cross sec. (mm²) | ΔT (°K) see ***Annex-13*** max. current capacity (A) at ΔT (°K) as per IEC 439-1 **45°C** | 35°C | 25°C | description | price |
|---|---|---|---|---|---|---|---|---|---|
| **25 mm² insulated braided links** | | | | | *mounting holes: Ø d1=8.5 / Ø d2=10.5 mm* | | | | |
| **JLK1005** | 20 | 4.3 | 330 | 25 | **185** | 175 | 145 | insulated braided shunt | **283.50** |
| **JLK1010** | 20 | 4.3 | 430 | 25 | **185** | 175 | 145 | insulated braided shunt | **336.00** |
| **JLK1015** | 20 | 4.3 | 530 | 25 | **185** | 175 | 145 | insulated braided shunt | **378.00** |
| **JLK1020** | 20 | 4.3 | 630 | 25 | **185** | 175 | 145 | insulated braided shunt | **430.50** |
| **JLK1021** | 20 | 4.3 | 730 | 25 | **185** | 175 | 145 | insulated braided shunt | **493.50** |
| **JLK1023** | 20 | 4.3 | 930 | 25 | **185** | 175 | 145 | insulated braided shunt | **598.50** |
| **35 mm² insulated braided links** | | | | | *mounting holes: Ø d1=8.5 / Ø d2=10.5mm* | | | | |
| **JLK1030** | 20 | 4.9 | 330 | 35 | **225** | 205 | 170 | insulated braided shunt | **357.00** |
| **JLK1035** | 20 | 4.9 | 430 | 35 | **225** | 205 | 170 | insulated braided shunt | **430.50** |
| **JLK1040** | 20 | 4.9 | 530 | 35 | **225** | 205 | 170 | insulated braided shunt | **504.00** |
| **JLK1045** | 20 | 4.9 | 630 | 35 | **225** | 205 | 170 | insulated braided shunt | **567.00** |
| **JLK1046** | 20 | 4.9 | 730 | 35 | **225** | 205 | 170 | insulated braided shunt | **661.50** |
| **JLK1048** | 20 | 4.9 | 930 | 35 | **225** | 205 | 170 | insulated braided shunt | **808.50** |
| **JLK1049** | 20 | 4.9 | 1030 | 35 | **225** | 205 | 170 | insulated braided shunt | **882.00** |
| **50 mm² insulated braided links** | | | | | *mounting holes: Ø d1=8.5 / Ø d2=10.5 mm* | | | | |
| **JLK1055** | 20 | 5 | 330 | 50 | **280** | 250 | 220 | insulated braided shunt | **441.00** |
| **JLK1060** | 20 | 5 | 430 | 50 | **280** | 250 | 220 | insulated braided shunt | **546.00** |
| **JLK1065** | 20 | 5 | 530 | 50 | **280** | 250 | 220 | insulated braided shunt | **651.00** |
| **JLK1070** | 20 | 5 | 630 | 50 | **280** | 250 | 220 | insulated braided shunt | **724.50** |
| **JLK1071** | 20 | 5 | 730 | 50 | **280** | 250 | 220 | insulated braided shunt | **829.50** |
| **JLK1073** | 20 | 5 | 930 | 50 | **280** | 250 | 220 | insulated braided shunt | **1 018.50** |
| **JLK1074** | 20 | 5 | 1030 | 50 | **280** | 250 | 220 | insulated braided shunt | **1 113.00** |
| **85 mm² insulated braided links** | | | | | *mounting holes: A=8.5 / B=10.5 mm* | | | | |
| **JLK1145** | 24 | 6.5 | 330 | 85 | **350** | 320 | 270 | insulated braided shunt | **714.00** |
| **JLK1150** | 24 | 6.5 | 430 | 85 | **350** | 320 | 270 | insulated braided shunt | **882.00** |
| **JLK1155** | 24 | 6.5 | 530 | 85 | **350** | 320 | 270 | insulated braided shunt | **1 050.00** |
| **JLK1160** | 24 | 6.5 | 630 | 85 | **350** | 320 | 270 | insulated braided shunt | **1 218.00** |
| **JLK1165** | 24 | 6.5 | 730 | 85 | **350** | 320 | 270 | insulated braided shunt | **1 417.50** |
| **JLK1175** | 24 | 6.5 | 930 | 85 | **350** | 320 | 270 | insulated braided shunt | **1 806.00** |
| **JLK1180** | 24 | 6.5 | 1030 | 85 | **350** | 320 | 270 | insulated braided shunt | **1 974.00** |
| **120 mm² insulated braided links** | | | | | *mounting holes: Ø d1=10.5 / Ø d2=10.5 mm* | | | | |
| **JLK1075** | 30 | 7.5 | 330 | 120 | **440** | 400 | 335 | insulated braided shunt | **1 113.00** |
| **JLK1080** | 30 | 7.5 | 430 | 120 | **440** | 400 | 335 | insulated braided shunt | **1 302.00** |
| **JLK1085** | 30 | 7.5 | 530 | 120 | **440** | 400 | 335 | insulated braided shunt | **1 543.50** |
| **JLK1090** | 30 | 7.5 | 630 | 120 | **440** | 400 | 335 | insulated braided shunt | **1 795.50** |
| **JLK1095** | 30 | 7.5 | 730 | 120 | **440** | 400 | 335 | insulated braided shunt | **1 974.00** |
| **JLK1097** | 30 | 7.5 | 930 | 120 | **440** | 400 | 335 | insulated braided shunt | **2 446.50** |
| **JLK1098** | 30 | 7.5 | 1030 | 120 | **440** | 400 | 335 | insulated braided shunt | **2 614.50** |
| **240 mm² insulated braided links** | | | | | *mounting holes: Ø d1=12.5 / Ø d2=10.5 mm* | | | | |
| **JLK1100** | 32 | 12.5 | 330 | 240 | **730** | 680 | 565 | insulated braided shunt | **2 205.00** |
| **JLK1105** | 32 | 12.5 | 430 | 240 | **730** | 680 | 565 | insulated braided shunt | **2 572.50** |
| **JLK1110** | 32 | 12.5 | 530 | 240 | **730** | 680 | 565 | insulated braided shunt | **2 982.00** |
| **JLK1115** | 32 | 12.5 | 630 | 240 | **730** | 680 | 565 | insulated braided shunt | **3 433.50** |
| **JLK1120** | 32 | 12.5 | 730 | 240 | **730** | 680 | 565 | insulated braided shunt | **3 769.50** |
| **JLK1130** | 32 | 12.5 | 930 | 240 | **730** | 680 | 565 | insulated braided shunt | **4 851.00** |
| **JLK1135** | 32 | 12.5 | 1030 | 240 | **730** | 680 | 565 | insulated braided shunt | **5 218.50** |

***Phase colours***: *Besides standard white (above), colours red and blue can be ordered on request by adding **.../R** (red) or **.../B** (blue) to above (white) part numbers.* **+ 20%**

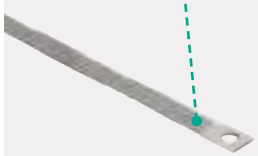
| **Derating coefficient for bars in parallel** | | |
|---|---|---|
| Number of bars | 2 bars | 3 bars |
| Coefficient to use | x 1.6 | x 2 |

***Please note:*** *Prices of copper products are based on the London Metal Exchange and will vary from time to time. Consult our sales department for the latest pricing before placing orders.*

Made in Italy TEKNOMEGA

## Flexible copper earthing braids





TMS...

### Flat tinned copper earthing braids

*highly flexible braided copper earthing link*

**No cutting - no stripping - no lug - no crimping**

Copper braid used as a super flexible conductor for all electric connection requirements, including power, earthing and equipotential connections.

Accommodates higher current density than cables and copper bars with the same cross-section. Tinned copper flat braid, used as a ground strap, provides an excellent, low resistance ground path. Supplied cut with terminated ends punched hole, ready for connection.

**General features:**

- Conductor: Tinned electrolytic copper braid Cu-ETP 99.90%
- Resistivity: 0.0172 Ω mm²/m
- Mechanical resistance: Min. 200 MPa
- Standard length: 150 ... 300 mm lengths
- Mounting: Punched hole, ready for connection

**Typically application:**

Switchgears, Connectors, ground electric connection, the energy industry for wind turbines, generators, substations, transformers, hydro turbines, circuit breakers and rectifiers.


TMS...


TMS...

| type | conductor size (mm) width | thickness | length | cross sec. (mm²) | current rating (A) | terminal holes Ø (mm) | description | price |
|---|---|---|---|---|---|---|---|---|
| **10 mm² earthing braided links** | | | | | | | | |
| **TMS1010** | 17 | 2.8 | 150 | 10 | **85** | 8.5 | copper earthing braids | **73.50** |
| **TMS1015** | 17 | 2.8 | 200 | 10 | **85** | 8.5 | copper earthing braids | **73.50** |
| **TMS1020** | 17 | 2.8 | 250 | 10 | **85** | 8.5 | copper earthing braids | **105.00** |
| **TMS1025** | 17 | 2.8 | 300 | 10 | **85** | 8.5 | copper earthing braids | **105.00** |
| **16 mm² earthing braided links** | | | | | | | | |
| **TMS1035** | 17 | 3.1 | 150 | 16 | **120** | 8.5 | copper earthing braids | **94.50** |
| **TMS1040** | 17 | 3.1 | 200 | 16 | **120** | 8.5 | copper earthing braids | **115.50** |
| **TMS1045** | 17 | 3.1 | 250 | 16 | **120** | 8.5 | copper earthing braids | **115.50** |
| **TMS1050** | 17 | 3.1 | 300 | 16 | **120** | 8.5 | copper earthing braids | **136.50** |
| **25 mm² earthing braided links** | | | | | | | | |
| **TMS1055** | 25 | 2.8 | 150 | 25 | **150** | 10.5 | copper earthing braids | **115.50** |
| **TMS1060** | 25 | 2.8 | 200 | 25 | **150** | 10.5 | copper earthing braids | **136.50** |
| **TMS1065** | 25 | 2.8 | 250 | 25 | **150** | 10.5 | copper earthing braids | **147.00** |
| **TMS1070** | 25 | 2.8 | 300 | 25 | **150** | 10.5 | copper earthing braids | **178.50** |
| **35 mm² earthing braided links** | | | | | | | | |
| **TMS1075** | 21 | 3.6 | 150 | 35 | **195** | 10.5 | copper earthing braids | **147.00** |
| **TMS1080** | 21 | 3.6 | 200 | 35 | **195** | 10.5 | copper earthing braids | **178.50** |
| **TMS1085** | 21 | 3.6 | 250 | 35 | **195** | 10.5 | copper earthing braids | **199.50** |
| **TMS1090** | 21 | 3.6 | 300 | 35 | **195** | 10.5 | copper earthing braids | **220.50** |
| **50 mm² earthing braided links** | | | | | | | | |
| **TMS1100** | 25 | 4.8 | 150 | 50 | **250** | 10.5 | copper earthing braids | **220.50** |
| **TMS1105** | 25 | 4.8 | 200 | 50 | **250** | 10.5 | copper earthing braids | **252.00** |
| **TMS1110** | 25 | 4.8 | 250 | 50 | **250** | 10.5 | copper earthing braids | **294.00** |
| **TMS1115** | 25 | 4.8 | 300 | 50 | **250** | 10.5 | copper earthing braids | **336.00** |
| **75 mm² earthing braided links** | | | | | | | | |
| **TMS1120** | 30 | 5.5 | 200 | 75 | **330** | 10.5 | copper earthing braids | **441.00** |
| **TMS1125** | 30 | 5.5 | 250 | 75 | **330** | 10.5 | copper earthing braids | **514.50** |
| **TMS1130** | 30 | 5.5 | 300 | 75 | **330** | 10.5 | copper earthing braids | **504.00** |
| **100 mm² earthing braided links** | | | | | | | | |
| **TMS1135** | 30 | 6.5 | 200 | 100 | **370** | 12.5 | copper earthing braids | **609.00** |
| **TMS1140** | 30 | 6.5 | 250 | 100 | **370** | 12.5 | copper earthing braids | **703.50** |
| **TMS1145** | 30 | 6.5 | 300 | 100 | **370** | 12.5 | copper earthing braids | **808.50** |



Above ZAR prices do not include VAT. E&OE


080210-0-4

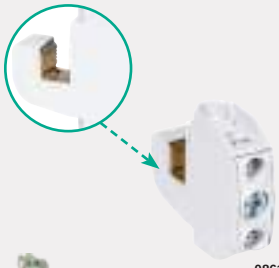

080210-1-4


080210-2-4


080010-0-4

080010-1-4


082060-0-3


086105-0-4


086105-9-2


084551-1-4

## Distribution blocks

- 1 pole *(stackable horizontally)* clips together to add additional poles
- Rapid horizontal installation on 35 mm DIN rail
- Extremely compact, all side finger-safe DIN EN 50274
- Terminal body: Brass (CuZn39Pb2) Housing: Self-extinguishing, halogen free
- 1000V AC/DC - DIN/EN 60947-7-1

| type | max. current rating | feed-in terminals max. cable (mm²) | feed-in terminals busbar (mm) | output terminals mm² 10 | 16 | 25 | 50 | description | designation | price |
|---|---|---|---|---|---|---|---|---|---|---|
| **HLAK - Main line/branch terminals** | | | | | | | | | | |
| **080110-0-4** | 152A | 25 mm² | – | | 2x | | | rail mount terminals | Line | **82.95** |
| | 152A | 25 mm² | – | | 2x | | | rail mount terminals | Neutral | **82.95** |
| **080110-2-4** | 152A | 25 mm² | – | | 2x | | | rail mount terminals | Earth | **82.95** |
| **080210-0-4** | 202A | 35 mm² | – | | | 2x | | rail mount terminals | Line | **111.30** |
| **080210-1-4** | 202A | 35 mm² | – | | | 2x | | rail mount terminals | Neutral | **112.35** |
| **080210-2-4** | 202A | 35 mm² | – | | | 2x | | rail mount terminals | Earth | **112.35** |
| **080310-0-4** | 300A | 70 mm² | – | | | | 2x | rail mount terminals | Line | **348.60** |
| **080310-1-4** | 300A | 70 mm² | – | | | | 2x | rail mount terminals | Neutral | **350.70** |
| **080310-2-4** | 300A | 70 mm² | – | | | | 2x | rail mount terminals | Earth | **350.70** |

| type | rated current | feed-in terminals max. cable (mm²) | feed-in terminals busbar (mm) | output terminals mm² 10 | 16 | 25 | 35 | description | designation | price |
|---|---|---|---|---|---|---|---|---|---|---|
| **UVB - Sub-distribution blocks** | | | for copper conductors | | | | | | | |
| **080010-0-4** | 100A | 2x 25 | – | 6x | | | | distribution block | Line | **193.20** |
| **080010-1-4** | 100A | 2x 25 | – | 6x | | | | distribution block | Neutral | **197.40** |
| **080010-2-4** | 100A | 2x 25 | – | 6x | | | | distribution block | Earth | **197.40** |
| **080030-0-4** | 200A | 70 | – | | 6x | | 1x | distribution block | Line | **362.25** |
| **080030-1-4** | 200A | 70 | – | | 6x | | 1x | distribution block | Neutral | **366.45** |
| **080030-2-4** | 200A | 70 | – | | 6x | | 1x | distribution block | Earth | **366.45** |

**PDB - Power distribution blocks** **Al/Cu**

- Suitable for Copper or Aluminium conductors *(current ratings for copper conductors)*
- DIN rail mounting or direct chassis plate mount *(horizontal or vertical)*
- Hexagon head screws for high torque connections *(captive screws)*
- Transparent cover for easy inspection of termination

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **082040-0-3** | 164A | 2.5...25 | – | 3x | 3x | | | distribution block | grey | **303.45** |
| **082050-0-3** | 214A | 4...35 | – | | 4x | 2x | | distribution block | grey | **366.45** |
| **082060-0-3** | 215A | 10…70 | 15.5 x 5 | | 3x | 2x | | distribution block | grey | **693.00** |
| **082070-0-3** | 270A | 16...95 | – | | | 8x | 2x | distribution block | grey | **525.00** |
| **082080-0-3** | 400A | 35...120 | 24 x 10 | | 4x | 3x | 2x | distribution block | grey | **891.45** |
| **082090-0-3** | 490A | 95...185 | 24 x 10 | | 4x | 3x | 2x | distribution block | grey | **1 239.00** |

**SSAK - Busbar connection terminals** 690V IEC 60947-7-1

Fastens directly onto busbars *(3-10 mm thick)* and provides 2 x outgoing 16 mm² cable terminals

- For direct cable connection to copper bars 3-10 mm thickness

| type | rated current | feed-in terminals busbar *(thickness)* | branch terminal 1-16 mm² | description | designation | price |
|---|---|---|---|---|---|---|
| **Insulated conductor connection terminals** | | | | *(H) 47.8 x (W) 15.2 x (D) 55.2 mm* | | |
| **086105-0-4** | 114A | 3...10 mm thick | 2x 1...16 mm² | busbar connect terminal | Line | **171.15** |
| **086105-1-4** | 114A | | | busbar connect terminal | Neutral | **171.15** |
| **086105-2-4** | 114A | | | busbar connect terminal | Earth | **171.15** |
| **086105-3-4** | 114A | | | busbar connect terminal | Line | **171.15** |
| **Uninsulated conductor connection terminals** | | | | | | |
| **086105-9-2** | 114A | 3...10 mm thick | 2x 1...16 mm² | busbar connect terminal | – | **105.00** |

**Feed in Terminals** *(H) 27.1 x (W) 17.3 x (D) 24.7 mm (without pin)*

Designed for ease of feed-in to common bridging busbars used with MCB's in distribution boards

- Universal, configurable for front or *(either)* side power feed
- Screw clamp termination ensuring touch safety

| | | | | | |
|---|---|---|---|---|---|
| **084551-1-4** | – | 50 mm² | insulated feed-in terminal short pin *(15 mm)* | grey | **282.45** |
| **084553-1-4** | – | 50 mm² | insulated feed-in terminal long pin *(29.5 mm)* | grey | **210.00** |


5025 5110

**SBC ER – Compact adjustable busbar support -** IEC 61439-1 4000A

Multipolar busbar support to carry high currents with high short circuit withstand in almost every low voltage system enclosure on the market

- Easy to install – cost effective
- Adjustable distance between phases (5 mm increments) minimum = 70 mm
- Up to 75kA rms Isc - 165kA peak Isc (distance between supports dependant)
- For bars 30...125 mm wide x 5/10 mm thick (1…3 bars per phase)
- High dielectrical resistance
- High mechanical strength Vertical bars
- High short circuit strength *(see **Annex-12**)*
- Universal multipole *(edgewise mounting)* busbar support system.

**Vertical bars**

| type | for busbar thickness | No. bars per phase | insulation voltage | interphase distance | description | pcs per pack | price (per pack) |
|---|---|---|---|---|---|---|---|
| **5025 5110** | 10 mm | 1-2 | 1000V | adjustable | busbar support inserts | *(8 pcs)* | **1 071.00** |
| **5025 5105** | 5 mm | 1-3 | 1000V | adjustable | busbar support inserts | *(8 pcs)* | **995.40** |
| **5025 5100** | universal clamping stud kit for bars 25 to 200 mm (H) | | | | *per pack* | *(4 pcs)* | **1 323.00** |
| **5025 5101** | metal clamping stud kit for bars 25 to 100 mm (H) | | | | *per pack* | *(2 pcs)* | **1 438.50** |
| **5025 5124** | profile | perforated support profile for inserts | | | *length 380 mm* | *(4 pcs)* | **2 037.00** |
| **5025 5125** | profile | perforated support profile for inserts | | | *length 480 mm* | *(4 pcs)* | **2 194.50** |
| **5025 5126** | profile | perforated support profile for inserts | | | *length 580 mm* | *(4 pcs)* | **2 478.00** |
| **5025 5128** | profile | perforated support profile for inserts | | | *length 780 mm* | *(4 pcs)* | **2 803.50** |

**One complete busbar support systems:**
2 x support inserts (per phase) (3P = 6 / 4P = 8)
2 x clamping studs
2 x support profiles (1 x top, 1 x bottom)


5024 6400

**SBC 10 – Compact busbar support –** *IEC 60439-1* *2500A*

Multipole *(edgewise mounting)* busbar support system - fixed interphase distance.

**High current carrying capacities:**

SB C 10 multipolar edgewise busbar supports are suitable for main switchboard applications where high current carrying capacity is required.

**Easy installation:**

Edgewise mounted, the SB C 10 can be installed in low voltage switchboards for main and/or distribution busbar use in a horizontal and vertical position. Its installation standard dimensions mean it can be integrated in almost all LV systems on the market.

- For bars 30...120 mm wide x 10 mm thick *(one or two bars per phase)*
- Up to 50 kA rms Isc - 110kA peak Isc *(distance between supports dependant)*
- Reverse support to accommodates busbar offset *(for joining bars)*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **5024 6400** | 10 mm | 1/2 | 800V | 75/90 mm | 3-pole busbar support | *(ea)* | **541.80** |
| **5024 6700** | 10 mm | 1/2 | 1000V | 90 mm | 4-pole busbar support | *(ea)* | **549.15** |

*For complete system, order: 2 x supports + 1 x mounting accessory kit (below)*


5020 2030

**Mounting accessory kits -** *(2 x M8 threaded studs/insulation spacers/nuts)*

| | | | | |
|---|---|---|---|---|
| **5020 2030** | mounting accessory kit | *(rods/spacers/nuts)* | for 30 mm busbars | **406.35** |
| **5020 2040** | mounting accessory kit | *(rods/spacers/nuts)* | for 40 mm busbars | **428.40** |
| **5020 2050** | mounting accessory kit | *(rods/spacers/nuts)* | for 50 mm busbars | **429.45** |
| **5020 2060** | mounting accessory kit | *(rods/spacers/nuts)* | for 60 mm busbars | **454.65** |
| **5020 2080** | mounting accessory kit | *(rods/spacers/nuts)* | for 80 mm busbars | **487.20** |
| **5020 2100** | mounting accessory kit | *(rods/spacers/nuts)* | for 100 mm busbars | **546.00** |


5028 0410

**SB E 44 – Four-pole stair type busbar support system** *300A*

Four-pole stair type busbar support system. *(H) 180 x (W) 25 x (D)126 mm*

- For flat bars 15/20/30 mm wide x 5 mm thick *(solid or perforated)*
- Up to 22 kA rms Isc - 50kA peak Isc *(distance between supports dependent)*
- DIN rail mountable or bolt down
- Thermoplastic
- Self-extinguishing UL94VO

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **5028 0410** | 5 mm | 1 | 1000V | 35.5 mm | 4-pole stair type support | *(ea)* | **399.00** |



Above ZAR prices do not include VAT. E&OE




## 60 mm - System classic

The 60 mm system is an extremely compact busbar system with 60 mm spacing between busbars arranged in horizontal format, permitting simple attachable "clip-on" accessories such as connections for various cable and/or flexible or solid busbars, fuse holders and switches as well as easy connectors which accommodate circuit breakers, contactors etc.

### Busbar supports *up to 630A*

- Horizontal mounting of busbars *(15 - 20 - 25 - 30 mm wide)*
- Permits direct mounting of accessories: various termination, fuse/circuit breaker protection

| type | for busbar size (mm) width | thick | no. poles | description | amps | price |
|---|---|---|---|---|---|---|
| **01601** | 15 - 30 mm | 5/10 mm | 1 | universal busbar support | 630A | **224.70** |
| **01356** | 15 - 30 mm | 5/10 mm | 2 | universal busbar support | 630A | **369.60** |
| **01495** | 15 - 30 mm | 5/10 mm | 3 | universal busbar support | 630A | **337.05** |
| **01484*** | 15 - 30 mm | 5/10 mm | 3 | busbar support *(with control terminals)* | 630A | **568.05** |
| **01485** | 15 - 30 mm | 5/10 mm | 4 | universal busbar support | 630A | **565.95** |

* *With integrated 16mm termination for control wiring/connection*

### "H" profile busbar supports *up to 1600A*

- Horizontal mounting of **"H"** profile busbars 30 mm wide
- Permits direct mounting of accessories: various termination, fuse/circuit breaker protection

| | | | | | | |
|---|---|---|---|---|---|---|
| **01116** | 30 mm | "H" profile | 1 | "H" profile busbar support | 1600A | **519.75** |
| **01231** | 30 mm | "H" profile | 3 | "H" profile busbar support | 1600A | **1 333.50** |

***01116*** *(1 pole) attaches to* ***01231*** *(3-pole) to make a 4-pole support*




### End covers for busbar supports *(provides insulated protection of busbar ends)*

| | | | |
|---|---|---|---|
| **01573** | end cover for | 3 | 01495 / 01484 busbar supports | **112.35** |
| **01131** | end cover for | 4 | 01485 busbar supports | **312.90** |
| **01373** | end cover for | 1 | 01116 busbar supports | **95.55** |
| **01234** | end cover for | 3 | 01231 busbar supports | **140.70** |

### Busbar termination *(for connecting cables directly onto busbars)*



#### For cable conductors

- "Clip-on" terminals for cable conductors
- Direct clamping onto busbars no drilling required

| type | for busbar size (mm) width | thick | no. poles | cable size mm² min | max | description | amps | price |
|---|---|---|---|---|---|---|---|---|
| **01284** | 15 - 30 mm | 5 mm | 1 | 1.5 | 16 | conductor terminal | 180A | **26.99** |
| **01285** | 15 - 30 mm | 5 mm | 1 | 4 | 35 | conductor terminal | 270A | **40.43** |
| **01287** | 15 - 30 mm | 5 mm | 1 | 16 | 70 | conductor terminal | 400A | **53.55** |
| **01289** | 15 - 30 mm | 10 mm | 1 | 1.5 | 16 | conductor terminal | 180A | **44.10** |
| **01290** | 15 - 30 mm | 10 mm | 1 | 4 | 35 | conductor terminal | 270A | **66.15** |
| **01292** | 15 - 30 mm | 10 mm | 1 | 16 | 70 | conductor terminal | 400A | **73.50** |
| **01203** | 15 - 30 mm | 10 mm | 1 | 16 | 120 | conductor terminal | 440A | **138.60** |

#### CRITO® ProfiClip brace terminals for cable conductors *(for standard and "H" profile bars)*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **01318** | 20 - 30 mm | 5/10 mm | 1 | 95 | 185 | conductor terminal | 500A | **517.65** |
| **01760** | 20 - 30 mm | 5/10 mm | 1 | 120 | 300 | conductor terminal | 600A | **739.20** |




#### 3 phase clamp-on terminals *(fully insulated, internally partitioned)*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **01563** | 15 - 30 mm | 5/10 mm | 3 | 1.5 | 16 | conductor terminal | 80A | **611.10** |
| **01240** | 15 - 30 mm | 5/10 mm | 3 | 6 | 50 | conductor terminal | 300A | **721.35** |
| **01243** | 15 - 30 mm | 5/10 mm | 3 | 35 | 120 | conductor terminal | 440A | **1 302.00** |
| **01199** | 20 - 30 mm | 5/10 mm | 3 | 95 | 185 | conductor terminal | 460A | **2 089.50** |
| **01754** | 20 - 30 mm | 5/10 mm | 3 | 120 | 300 | conductor terminal | 560A | **2 730.00** |
| **01537*** | 20 - 30 mm | 5/10 mm | 3 | 120 | 300 | conductor terminal | 560A | **2 625.00** |

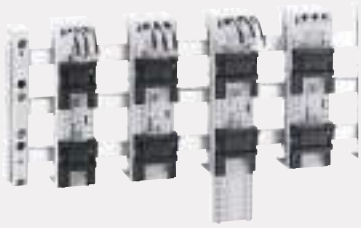
* *Adjustable phase separation distance to align with connected component (supplied without cover)*

### CRITO® brace terminals *for flat and flexible copper busbars*




| | | | | max. bar size wide | thick | | | |
|---|---|---|---|---|---|---|---|---|
| **01319** | 30 mm | 10 mm | 1 | 30 | 20 | busbar connection | 750A | **511.35** |
| **01069** | 30 mm | 10 mm | 1 | 55 | 28 | busbar connection | 1600A | **2 173.50** |
| **01070** | 30 mm | 10 mm | 1 | 68 | 28 | busbar connection | 1600A | **2 667.00** |
| **01071** | 30 mm | 10 mm | 1 | 105 | 28 | busbar connection | 1600A | **4 063.50** |
| **01538*** | 20 - 30 mm | 5/10 mm | 3 | 32 | 20 | busbar connection | 800A | **2 551.50** |

* *Adjustable phase separation distance (to align with connected component) supplied without cover*



324...



32215 32168 32004



03656 03301



31570



31572



33216



33603

## EQUES series - Easy connectors

Direct busbar mountable "clip-on" adaptors accept various devices such as MCB's, circuit breakers, fuse holders, contactors etc. without drilling busbars.

### Easy connectors 25 - 32 - 63A

- Direct busbar mounting adaptors for busbars 15 - 20 - 25 - 30 mm wide and "H" profile
- With integrated DIN rail and pre-wired power leads from connected busbars

| type | for busbars (mm) width | thick | no. rails | wires mm² | dimensions (mm) W | H | description | amps | price |
|---|---|---|---|---|---|---|---|---|---|
| **32430** | 15 - 30 | 5/10/"H" | 1 | 4 | 45 | 200 | easy connector | 25A | **716.10** |
| **32431** | 15 - 30 | 5/10/"H" | 2 | 4 | 45 | 200 | easy connector | 25A | **759.15** |
| **32441** | 15 - 30 | 5/10/"H" | 1 | 6 | 54 | 200 | easy connector | 32A | **865.20** |
| **32442** | 15 - 30 | 5/10/"H" | 2 | 6 | 54 | 200 | easy connector | 32A | **771.75** |
| **32454** | 15 - 30 | 5/10/"H" | 1 | 10 | 54 | 200 | easy connector | 63A | **999.60** |
| **32455** | 15 - 30 | 5/10/"H" | 2 | 10 | 54 | 200 | easy connector | 63A | **1 060.50** |
| **32459** | 15 - 30 | 5/10/"H" | 2 | 10 | 81 | 200 | easy connector | 63A | **1 060.50** |

### Universal power connectors *(to accommodate MCCB's and switchgear)*

- For commercially available switchgear *(M4 fixing screws)*
- For top connection to busbar system *(bottom connection available on request)*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **32214** | 15 - 30 | 5/10/"H" | top connection | 108 | 222 | busbar adaptor | 200A | **2 058.00** |
| **32215** | 15 - 30 | 5/10/"H" | bottom connection | 108 | 222 | busbar adaptor | 200A | **2 110.50** |
| **32168** | 15 - 30 | 5/10/"H" | top connection | 110 | 320 | busbar adaptor | 250A | **2 394.00** |
| **32004*** | 15 - 30 | 5/10/"H" | top/bottom | 184 | 320 | busbar adaptor | 630A | **4 830.00** |

* *With top or bottom connection*

### Busbar mounted fuse bases

| type | for busbars (mm) width | thick | no. rails | fuse size | description | amps | price |
|---|---|---|---|---|---|---|---|
| • Clamps directly onto busbar *(no drilling required)* | | | | | | | |
| **NH DIN fuse holders** *(blade type fuses)* | | | | | | | |
| **03370** | 15 - 30 | 5/10/"H" | 1 pole | "00" | busbar mounted NH fuse base | 160A | **417.90** |
| **03656** | 15 - 30 | 5/10/"H" | 3-pole | "00" | busbar mounted NH fuse base | 160A | **1 386.00** |
| **03301** | 15 - 30 | 5/10/"H" | 3-pole | "1" | busbar mounted NH fuse base | 250A | **7 035.00** |
| **03693** | 15 - 30 | 5/10/"H" | 3-pole | "2" | busbar mounted NH fuse base | 400A | **9 219.00** |
| **NH fuse protection covers** | | | | | | | |
| **79448** | | | 1 pole | "00" | grip lug cover for NH fuses | – | **64.05** |
| **79449** | | | 1 pole | 1-2-3 | grip lug cover for NH fuses | – | **85.05** |

### Cylindrical fuse holders 10 x 38 mm

**1 pole busbar mounted fuse holder for 10 x 38 cylindrical fuses**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **31570** | 30 mm | 5/10 | 1 pole | 10 x 38 | 1000 VDC busbar mount f/holder | 30A | **120.75** |
| **31572** | 20 mm | 5/10 | 1 pole | 10 x 38 | 1000 VDC busbar mount f/holder | 30A | **118.65** |

**3-pole busbar mounted fuse holder for 10 x 38 cylindrical fuses**

- Vertical mount compact *(27 mm wide)* 3-pole in-line fuse holder

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **31954** | 15-30 | 5/10/"H" | 3-pole | 10 x 38 | busbar mount fuse base | 160A | **1 491.00** |

### Bus-mounted fuse switch disconnectors *(top or bottom connection)*

- Bus-mounting fuse switch disconnector, top/bottom connection

**Horizontal mount**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **33216** | 15 - 30 | 5/10/"H" | 3-pole | "000" | busbar mounted NH fuse base | 125A | **2 425.50** |
| **33398** | 15 - 30 | 5/10/"H" | 3-pole | "00" | busbar mounted NH fuse base | 160A | **2 467.50** |
| **33601** | 15 - 30 | 5/10/"H" | 3-pole | "1" | busbar mounted NH fuse base | 250A | **6 594.00** |
| **33602** | 15 - 30 | 5/10/"H" | 3-pole | "2" | busbar mounted NH fuse base | 400A | **10 195.50** |
| **33603** | 15 - 30 | 5/10/"H" | 3-pole | "3" | busbar mounted NH fuse base | 630A | **15 435.00** |

**Vertical mount** *(in-line)*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **33234** | 15 - 30 | 5/10/"H" | 3-pole | "00" | in-line bus mounted NH fuse base | 160A | **4 221.00** |



Above ZAR prices do not include VAT. E&OE


















## 100 mm - Universal busbar support system

The 100 mm system is a compact busbar system with 100 mm spacing between busbar centres. Busbars are arranged in a horizontal format, permitting simple attachable “clip-on” accessories such as connections for various cable and/or flexible or solid busbars, fuse holders and switches as well as easy connectors which accommodates circuit breakers, contactors etc.

| type | for busbar size (mm) width | thick | no. poles | description | rated current | price |
|---|---|---|---|---|---|---|
| **Busbar supports 100 mm 1250A (3-pole)** | | | | | | |
| • Horizontal mounting of undrilled busbars 30 - 40 - 50 - 60 mm wide<br>• Permits direct mounting of accessories: various termination, fuse/circuit breaker protection | | | | | | |
| **01479** | 30 - 60 mm | 10 mm | 3 | universal 100 mm busbar support | 1250A | **1 022.70** |
| **End covers for above busbar supports** | | | | *provides insulated protection of busbar ends* | | |
| **01254** | end cover | | 3 | for above **01479** busbar supports | | **252.00** |
| **Busbar supports 185 mm 2500A (3-pole)** | | | | | | |
| The 185 mm busbar support system accepts busbars from 30 to 120 mm wide mounted horizontally with 185 mm spacing between busbar centres. The wide spacing of busbars offers short-circuit ratings in excess of 100 kA. | | | | | | |
| **01230** | 30 - 120 mm | 10 mm | 3 | universal 185 mm busbar support | 2500A | **1 186.50** |
| **End covers for above busbar supports** | | | | *provides insulated protection of busbar ends* | | |
| **33341** | end cover | | 3 | for above **01230** busbar supports | | **1 207.50** |

## Accessories for busbar systems

### Busbar covers

| | | | | |
|---|---|---|---|---|
| **01245** | 30 | 10 | single busbar cover *(clips directly onto busbar)* | 1 m | **489.30** |
| **01252** | 30 | “H” profile | single busbar cover *(clips directly onto busbar)* | 2 m | **819.00** |
| **01025** | 3-pole reserve section cover *(requires **01026** support for cover)* | | | 0.7 m | **781.20** |
| **01026** | support for reserve section cover 32 mm high *(clips directly onto busbars)* | | | | **187.95** |
| **01320** | support for reserve section cover 107 mm high *(clips directly onto busbars)* | | | | **243.60** |

### System cover *(can be used to make up any sized cover for busbars, terminals etc.)*

| | | | | |
|---|---|---|---|---|
| **01136** | (left + right) support for cover section | *(clips directly onto busbars)* | | **575.40** |
| **01554** | front cover section | *(requires **01136** supports)* | 1.1 m | **1 113.00** |
| **01555** | top/bottom cover section | *(requires **01136** supports)* | 1.1 m | **717.15** |

## Surface/rail mount fuse holders and switch disconnectors

| type | no. poles | fuse size | description | rated current | price |
|---|---|---|---|---|---|
| **Cylindrical fuse holders** | | | | | |
| • Modular DIN rail mounting, shock protection to DIN VDE 0660, IEC/EN 60947-3<br>• Silicone and chlorine free, self extinguishing to UL94<br>• Creepage resistance CTI 200 | | | | | |
| **31110** DIN rail mounting | 1 | 10 x 38 | cylindrical fuse holder | 32A | **82.95** |
| **31113** DIN rail mounting | 3 | 10 x 38 | cylindrical fuse holder | 32A | **261.45** |
| **31115** DIN rail mounting | 1 | 14 x 51 | cylindrical fuse holder | 50A | **606.90** |
| **31118** DIN rail mounting | 3 | 14 x 51 | cylindrical fuse holder | 50A | **685.65** |
| **31120** DIN rail mounting | 1 | 22 x 58 | cylindrical fuse holder | 125A | **859.95** |
| **31123** DIN rail mounting | 3 | 22 x 58 | cylindrical fuse holder | 125A | **2 583.00** |

## NH fuse switch disconnectors

3-pole switching DIN VDE 0660, IEC/EN 60947-3

- Shock protection with integrated positive action closure and arc chambers
- Mechanical fuse retention in disconnector lid
- IP30 front degree of protection
- Silicone and chlorine free, self extinguishing to UL94
- See product datasheet for DC application rating

| | | | | | | |
|---|---|---|---|---|---|---|
| **33217** | fuse switch/holder | 3 | C00 | fuse switch disconnector | 125A | **1 711.50** |
| **33222** | fuse switch/holder | 3 | 00 | fuse switch disconnector | 165A | **1 449.00** |
| **33201** | fuse switch/holder | 3 | 1 | fuse switch disconnector | 250A | **4 641.00** |
| **33202** | fuse switch/holder | 3 | 2 | fuse switch disconnector | 400A | **7 476.00** |
| **33203** | fuse switch/holder | 3 | 3 | fuse switch disconnector | 630A | **9 586.50** |
| **33204** | fuse switch/holder | 3 | 4 | fuse switch disconnector | 1600A | **37 695.00** |

# Cable & Component Identification

MG4 is CEMBRE's newest solution for identification & labelling requirements, designed to offer a high quality and long-lasting print for text, logos, electrical symbols, QR codes and all kinds of vector images.



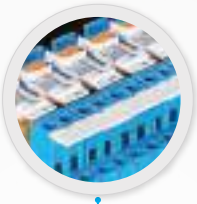


**Single Cables**

- Cable tags for holders
- Slide / clip on tags
- Wraparound cable markers
- Push in markers
- Cable & conduit tags

**Modular Components**

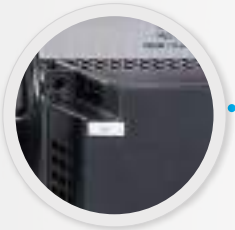
- Legends & labels
- Mounting rails



**Plates and Labels**

- Panel plates & covers
- Panel legends
- Security labels
- Warning labels

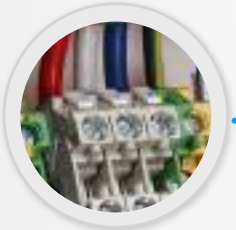




**Components & Equipment**

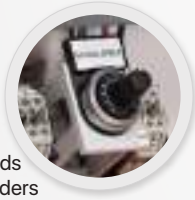
- Pre-cut legend





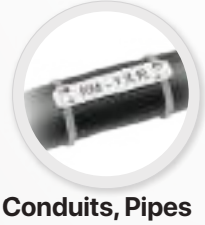
**Terminal Block Markers**

- Compatible with a wide range of brands



**Components & Equipment**

- PLC legends
- Rail mount legends
- Legends and holders
- Pushbutton holders & legends



**Conduits, Pipes & Multi-Core**

- Cable and conduit tags



- Legend holder

## Panel Marking Overview

Scan the QR code to watch **tutorial videos on how to mark** various media types using Cembre's identification media

Scan to watch



# MG4 FREEDOM TO PRINT EVERYWHERE

Scan to Watch

ALWAYS CONNECTED!

Share · Touch Display · USB · APP · Status Monitor · LAN · Wi-Fi Direct · Battery Rechargeable · Wi-Fi

## Thermal Transfer Sheet Printer Markingenius

With MG4, Cembre offers innovative solutions in order to improve the quality of work of its users by exploiting the technology and experience in industrial marking gained from 20 years within this business sector.

**MARKINGENIUS MG4 - Exclusively designed for the identification of conductors and electrical components.**

**Plug & Play Thermal Transfer Printer:** For tags, markers, legends, and labels on cables, pipes, tubes, terminal blocks, panels, components, and equipment .

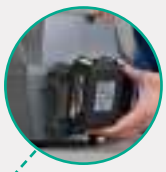
**Large on-Board Touch Screen:** Allows easy management of print projects. The MG4's reliability and robustness make it ideal for intensive use in various applications

**Versatile Power Options:** MG4 operates on mains power or optional CEMBRE rechargeable batteries. Use it in the office, production, or on-site. The interchangeable battery, compatible with all CEMBRE tools, ensures full portability.

**Efficient Ribbon Save System**: Each monochrome ribbon prints over 300,000 MG-TPMF 4x10 mm labels. Pigment dries instantly, making printed sheets immediately ready for use.




MG4



MG4 + CB1852L



CB1852L



ASC55-EU

## MARKINGENIUS MG4 printer *(H) 236 x (W) 240 x (D) 409 mm / 6.1 kg*

- **Speed:** Prints 112 MG-TPMF (4 x 10 mm) cable tags in less than 12 seconds
- **Convenience:** Software provides quick and easy upload of data to be printed
- **Economy:** Prints up to 300 000 MG-TPMF 4 x 10 cable tags with a single ribbon
- **Quality:** Printer resolution 300 x 600 dpi
- **Connectivity:** Via USB, LAN, WIFI or WIFI direct *(in the absent of a network)*
- **Training:** Continuous support service and free training post purchase via trained specialist

**Following supplied with MG4 printer:**

- MG2-PWC **(991000)** support template for tags **(MG-TPM)**
- MG2-PLT **(991002)** support template for legends, labels and signs and all serieFLAT media
- MG2-QTB **(991011)** support template for terminal block markers **(MG-CPM-01,02,03,04,07)**
- Mains/USB cable, protective cover, Black ribbon and take up core, installation/operating docs
- GENIUSPRO *(software - 5 multiple licences and manual)*

| type | description | |
|---|---|---|
| **MG4** | MARKINGENIUS MG4 thermal transfer printer for marking tags and legends | *see **Cat M** for pricing.* |

**Accessories and spares for MG4 Printers**

**MG2-ETR ribbons for MARKINGENIUS MG4** *thermal transfer printer ribbon*

| type | width (mm) | length *(meters)* | colour | description | Pantone ref. | price |
|---|---|---|---|---|---|---|
| **991600** | 120 | 200 | black | thermal transfer printer ribbon | Black C | **3 255.00** |
| **991601** | 120 | 200 | blue | thermal transfer printer ribbon | 2935C | **5 785.50** |
| **991602** | 120 | 200 | red | thermal transfer printer ribbon | 186C | **5 785.50** |
| **991606** | 120 | 200 | white | thermal transfer printer ribbon | – | **5 785.50** |
| **CVB-039** | canvas bag | | | transportation bag | – | **2 100.00** |
| **CB1852L** | battery | | | 18V - 5.2 Ah Li-Ion rechargeable battery | – | **3 171.00** |
| **ASC55-EU** | charger | | | 220 - 240 V battery charger **CB1852L** | – | **1 386.00** |

**Support templates for MG4 printer**

| | | | |
|---|---|---|---|
| **991000*** | MG2-PWC | support template for cable tags **MG-TPM** | **4 315.50** |
| **991002*** | MG2-PLT | support template for legends, labels, signs and all **serieFLAT** | **4 315.50** |
| **991011*** | MG2-QTB | support template for terminal markers **MG-CPM-01/02/03/04/07/11** | **4 315.50** |
| **991008** | MG2-QTB | support template for terminal markers **MG-CPM-01** | **4 315.50** |
| **991004** | MG2-WTB | support template for terminal markers **MG-CPM-05/12** | **4 315.50** |
| **991010** | MG2-PTM | support template for cable tags **MG-TDMO & MG-TDM** *(4 - 16 mm)* | **4 315.50** |

* *Usually supplied with MG4 printer*

| | | | |
|---|---|---|---|
| **991670** | MG2-CKP | print head cleaning kit *(template, pad & cleaning fluid)* | **5 187.00** |
| **992150** | MG2-CNP | replacement pads for above cleaning kit **MG2-CKP** *(5 pcs)* | **5 155.50** |
| **991671** | MG2-CHS | replacement cleaning fluid for above cleaning kit **MG2-CKP** | **1 806.00** |



42092B + 90010

## Cable tags precut 4 mm push-in marker tags for PMF holders - new "easy-entry" profile

**SeriesFLAT MG-TPMF** tags are used for marking cables, conduit, tubes, conductors and components. Presented in stem format, tags are simply snapped off their stems and inserted into appropriate holders for perfect protection against degradation by chemical and environmental agents over time.
Tag stems can also be labelled to indicate specific job or application notes.

| type | size (mm) | for cable (mm²) | SW code | colour | description | tags per sheet | tags per box | price per box |
|---|---|---|---|---|---|---|---|---|
| **MG-TPMF** | slide-in marking tags for **PMF** transparent holders - *"easy entry"* | | | | | | | |
| • Material: | Rigid PVC, self extinguishing class VO: UL 94 | | | | | | | |
| • Operating temperature: | -30°C...+60°C | | | | | | | |
| • Support template: | **991002** **MG2-PLT** *(usually supplied with MG4 printer)* | | | | | | | |
| **42091B** | 4 x 12 | – | **505** | white | slide-in tags for PMF holders | 80 | 4000 | **4 945.50** |
| **42092B** | 4 x 15 | – | **503** | white | slide-in tags for PMF holders | 80 | 4000 | **4 945.50** |
| **42093B** | 4 x 20 | – | **504** | white | slide-in tags for PMF holders | 64 | 1600 | **2 667.00** |
| **42096B** | 4 x 30 | – | **509** | white | slide-in tags for PMF holders | 48 | 1200 | **3 097.50** |
| **42097B** | 4 x 40 | – | **508** | white | slide-in tags for PMF holders | 32 | 800 | **2 730.00** |
| **42041B** | 4 x 12 | – | **505** | yellow | slide-in tags for PMF holders | 80 | 4000 | **5 953.50** |
| **42042B** | 4 x 15 | – | **503** | yellow | slide-in tags for PMF holders | 80 | 4000 | **5 953.50** |
| **42043B** | 4 x 20 | – | **504** | yellow | slide-in tags for PMF holders | 64 | 1600 | **3 234.00** |
| **42046B** | 4 x 30 | – | **509** | yellow | slide-in tags for PMF holders | 48 | 1200 | **3 507.00** |
| **42047B** | 4 x 40 | – | **508** | yellow | slide-in tags for PMF holders | 32 | 800 | **3 097.50** |

*Other colours available on request*


PMF-00

**PMF** transparent tag holders for **MG-TPMF seriesFLAT** pre-printed 4 mm cable tags

PMF holders are specifically designed to accommodate appropriately sized cables.
They slide on to cables to receive a pre-printed marking tag into a protected sleeve on the holder.

| type | for tag (mm) | for cable (mm²) | colour | description | std pack qty | price per pack |
|---|---|---|---|---|---|---|
| • Material: | Plasticised PVC, self extinguishing to class VO: UL 94 | | | | | |
| • Operating temperature: | -40°C...+80°C | | | | | |
| • Free of Cadmium, Lead, Silicon, Teflon. Resistant to alkali, alcohol, acids and solvents | | | | | | |
| **PMF-00** | *for cable ext. Ø diameter* | *1.3 - 2.2 mm* | | | | |
| **90010** | 4 x 12 | 0.25-0.5 | t/parent | slide-on transparent tag holder | 7000 | **2 814.00** |
| **90020** | 4 x 15 | 0.25-0.5 | t/parent | slide-on transparent tag holder | 6000 | **3 328.50** |
| **90040** | 4 x 20 | 0.25-0.5 | t/parent | slide-on transparent tag holder | 4000 | **2 572.50** |
| **90070** | 4 x 30 | 0.25-0.5 | t/parent | slide-on transparent tag holder | 2000 | **2 299.50** |
| **90090** | 4 x 40 | 0.25-0.5 | t/parent | slide-on transparent tag holder | 2500 | **3 412.50** |
| **PMF-01** | *for cable ext. Ø diameter* | *2 - 3.7 mm* | | | | |
| **90110** | 4 x 12 | 0.5 - 2.5 | t/parent | slide-on transparent tag holder | 5000 | **2 551.50** |
| **90120** | 4 x 15 | 0.5 - 2.5 | t/parent | slide-on transparent tag holder | 4000 | **2 320.50** |
| **90140** | 4 x 20 | 0.5 - 2.5 | t/parent | slide-on transparent tag holder | 3000 | **2 100.00** |
| **90170N** | 4 x 30 | 0.5 - 2.5 | t/parent | slide-on transparent tag holder | 1500 | **1 984.50** |
| **90190N** | 4 x 40 | 0.5 - 2.5 | t/parent | slide-on transparent tag holder | 500 | **703.50** |
| **PMF-02** | *for cable ext. Ø diameter* | *3.4 - 4.3 mm* | | | | |
| **90210** | 4 x 12 | 2.5 - 4 | t/parent | slide-on transparent tag holder | 4000 | **2 425.50** |
| **90220** | 4 x 15 | 2.5 - 4 | t/parent | slide-on transparent tag holder | 3000 | **1 984.50** |
| **90240** | 4 x 20 | 2.5 - 4 | t/parent | slide-on transparent tag holder | 2000 | **1 491.00** |
| **90270N** | 4 x 30 | 2.5 - 4 | t/parent | slide-on transparent tag holder | 500 | **703.50** |
| **90290N** | 4 x 40 | 2.5 - 4 | t/parent | slide-on transparent tag holder | 500 | **766.50** |
| **PMF-03** | *for cable ext. Ø diameter* | *4 - 6.3 mm* | | | | |
| **90310** | 4 x 12 | 4 - 10 | t/parent | slide-on transparent tag holder | 2000 | **1 323.00** |
| **90320** | 4 x 15 | 4 - 10 | t/parent | slide-on transparent tag holder | 2000 | **1 438.50** |
| **90340** | 4 x 20 | 4 - 10 | t/parent | slide-on transparent tag holder | 1000 | **948.15** |
| **90370N** | 4 x 30 | 4 - 10 | t/parent | slide-on transparent tag holder | 500 | **766.50** |
| **90390N** | 4 x 40 | 4 - 10 | t/parent | slide-on transparent tag holder | 500 | **887.25** |
| **PMF-04** | *for cable ext. Ø diameter* | *6 - 10 mm* | | | | |
| **90420** | 4 x 15 | 10 - 25 | t/parent | slide-on transparent tag holder | 1000 | **948.15** |
| **90440N** | 4 x 20 | 10 - 25 | t/parent | slide-on transparent tag holder | 1000 | **1 218.00** |
| **90470** | 4 x 30 | 10 - 25 | t/parent | slide-on transparent tag holder | 500 | **979.65** |
| **90490N** | 4 x 40 | 10 - 25 | t/parent | slide-on transparent tag holder | 250 | **638.40** |
| **PMF-05** | *for cable ext. Ø diameter* | *9 - 15 mm* | | | | |
| **90520N** | 4 x 15 | 25 - 70 | t/parent | slide-on transparent tag holder | 500 | **824.25** |
| **90540** | 4 x 20 | 25 - 70 | t/parent | slide-on transparent tag holder | 250 | **523.95** |
| **90570N** | 4 x 30 | 25 - 70 | t/parent | slide-on transparent tag holder | 250 | **795.90** |
| **90590** | 4 x 40 | 25 - 70 | t/parent | slide-on transparent tag holder | 100 | **427.35** |

*Larger sizes up to 240 mm² available on request*


PMF-01


PMF-03



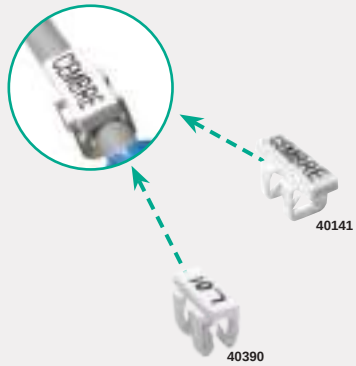
Above ZAR prices do not include VAT. E&OE

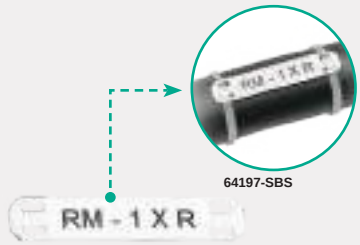
PC HF SF -40°C +130°C










New

**MG-KMP** - Wraparound cable markers




**Transparent tag holders to receive 4 mm pre-printed tags**

PMT holders are specifically designed to receive a pre-printed marking tag into a protected sleeve on the holder.

| type | for tag (mm) | mounting | | colour | description | std pack | price per pack |
|---|---|---|---|---|---|---|---|
| **PMF** | transparent holders for **MG-TPMF seriesFLAT** cable tags 4 mm | | | | | | |
| • Material: | Plasticised PVC, self extinguishing to class VO: UL 94 | | | | | | |
| • Free of Cadmium, Lead, Silicon, Teflon. Resistant to alkali, alcohol, acids and solvents | | | | | | | |
| **PMF-AC** | *self adhesive tag holders for surface mounting of 4 mm tags* | | | | | | |
| **66010N** | 4 x 12 | adhesive | | t/parent | self adhesive 4 mm tag holder | 4000 | **8 599.50** |
| **66020N** | 4 x 15 | adhesive | | t/parent | self adhesive 4 mm tag holder | 4000 | **11 445.00** |
| **66040N** | 4 x 20 | adhesive | | t/parent | self adhesive 4 mm tag holder | 3000 | **12 075.00** |
| **66070N** | 4 x 30 | adhesive | | t/parent | self adhesive 4 mm tag holder | 2000 | **11 130.00** |
| **66090N** | 4 x 40 | adhesive | | t/parent | self adhesive 4 mm tag holder | 1000 | **7 791.00** |
| **PMF-ET** | *tie-on tag holders for mounting on cables, hoses, tubes, conduits with cable ties* | | | | | | |
| • Tie on holder *(max cable tie width 6 mm)* | longitudinal mounting of cables, tubes, conduit | | | | | | |
| **63020** | 4 x 15 | tie mount | 1 tie | t/parent | tie-on transparent tag holder | 2000 | **3 990.00** |
| **63040N** | 4 x 20 | tie mount | 1 tie | t/parent | tie-on transparent tag holder | 2000 | **4 609.50** |
| **63070** | 4 x 30 | tie mount | 1 tie | t/parent | tie-on transparent tag holder | 1000 | **3 339.00** |
| **63090** | 4 x 40 | tie mount | 2 ties | t/parent | tie-on transparent tag holder | 500 | **1 890.00** |

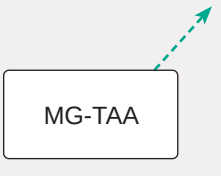
| type | size (mm) | for cable ($mm^2$) | **SW code** | colour | description | tags per sheet | tags per box | price per per box |
|---|---|---|---|---|---|---|---|---|
| **MG series** | one piece cable marking tags *(without holder - directly mounts onto cable)* | | | | | | | |
| MG one piece tags require no holders and can be directly mounted onto cable without tools<br>A sheet of tags takes 10 seconds to print. Partially printed sheets may be re-used to avoid wastage.<br>MG - one piece marking tags mount onto cables via the two range-taking apertures | | | | | | | | |
| • Material: | Polycarbonate, Halogen Free, self extinguishing to class VO: UL 94 | | | | | | | |
| **991010** | Use support template **MG2-PTM** for all MG series markers | | | | | | | **4 315.50** |
| **MG-TDM** | slide-on one piece marking tags *(pre - termination)* | | | | | | | |
| **MG-TDM-01** | for cable external Ø diameter | *1.6 - 3.25 mm* | | | | | | |
| **40141** | 4 x 16 | 0.5-1.5 | **123** | yellow | slide-on cable marker tags | 40 | 800 | **1 995.00** |
| **MG-TDM-02** | for cable external Ø diameter | *2 - 4.4 mm* | | | | | | |
| **40241** | 4 x 16 | 1 - 6 | **124** | yellow | slide-on cable marker tags | 40 | 640 | **1 596.00** |
| **MG2-TDMO** | clip-on one piece marking tags *(post termination)* | | | | | | | |
| **MG2-TDMO-01** | for cable external Ø diameter | *2 - 2.9 mm* | | | | | | |
| **40390** | 4 x 12 | 0.5 - 1.5 | **125** | white | slide-on cable marker tags | 40 | 880 | **2 005.50** |
| **40391** | 4 x 16 | 0.5 - 1.5 | **128** | white | slide-on cable marker tags | 40 | 880 | **2 247.00** |
| **MG2-TDMO-02** | for cable external Ø diameter | *2.9 - 3.5 mm* | | | | | | |
| **40490** | 4 x 12 | 1.5 - 2.5 | **126** | white | slide-on cable marker tags | 40 | 640 | **1 396.50** |
| **40491** | 4 x 16 | 1.5 -2.5 | **129** | white | slide-on cable marker tags | 40 | 640 | **1 596.00** |
| **MG2-TDMO-03** | for cable external Ø diameter | *4 - 4.6 mm* | | | | | | |
| **40590** | 4 x 12 | 4 - 6 | **127** | white | slide-on cable marker tags | 40 | 560 | **1 281.00** |
| **40591** | 4 x 16 | 4 - 6 | **130** | white | slide-on cable marker tags | 40 | 560 | **1 438.50** |
| **MG-ETF** | cable and conduit tags *(cable tie mounting)* | | | | | | | |
| • For marking large diameter cables, hoses, tubes and conduit | | | | | | | | |
| • Max. cable tie width: | 4.8 mm | | | | | | | |
| • Support template: | **991002** | **MG2-PLT** *(usually supplied with MG4 printer)* | | | | | | |
| **64193-SBS** | 13 x 57 | – | **581** | white | 11 x 35 mm tie mount cable tags | 14 | 800 | **6 657.00** |
| **64143-SBS** | 13 x 57 | – | **581** | yellow | 11 x 35 mm tie mount cable tags | 14 | 800 | **8 032.50** |
| **64293-SBS** | 15 x 95 | – | **584** | white | 13 x 73 mm tie mount cable tags | 5 | 250 | **5 197.50** |
| **64197-SBS** | 28 x 57 | – | **591** | white | 26 x 35 mm tie mount cable tags | 6 | 300 | **4 368.00** |
| **64147-SBS** | 28 x 57 | – | **591** | yellow | 26 x 35 mm tie mount cable tags | 6 | 300 | **5 092.50** |
| *Other colours, halogen free options, available on request.* | | | | | | | | |
| **MG-KMP** | Wraparound cable markers (self adhesive, precut, halogen free) | | | | | | | |
| Suitable for identifying large diameter cables, tubes and conduit. Printing is exceptionally clear and legible and is protected from chemical and atmospheric agents. | | | | | | | | |
| **49950-015** | 10 x 15 | 4.3 - 7 | 381 | white | tie mount cable tags | 18 | 900 | **10 437.00** |
| **49951-023** | 15 x 23 | 6 -10 | 385 | white | tie mount cable tags | 8 | 400 | **6 730.50** |

## 9 mm marking tags and holders








### MG-TAPW — 9 mm push-in precut marking legends for **PMT** series legend holders *(below)*

- Presented in stem format
- Tags are simply snapped off their stems and inserted into the appropriate holders
- Support template: **991002 MG2-PLT** *(usually supplied with MG4 printer)*

Material: Rigid PVC, self extinguishing to class VO: UL 94
Operating temperature: -30°C...+60°C

| type | size (mm) | SW code | colour | description | tags per sheet | tags per box | price per box |
|---|---|---|---|---|---|---|---|
| **49090N** | 9 x 20 | **362** | white | push-in legends for PMT holders | 55 | 2750 | **10 605.00** |
| **49091N** | 9 x 35 | **364** | white | push-in legends for PMT holders | 33 | 1650 | **9 975.00** |
| **49095N** | 9 x 70 | **378** | white | push-in legends for PMT holders | 11 | 550 | **11 655.00** |
| **49040N** | 9 x 20 | **362** | yellow | push-in legends for PMT holders | 55 | 2750 | **12 915.00** |
| **49041N** | 9 x 35 | **364** | yellow | push-in legends for PMT holders | 33 | 1650 | **12 075.00** |
| **49045N** | 9 x 70 | **378** | yellow | push-in legends for PMT holders | 11 | 550 | **10 479.00** |

### MG-TAA — 9 mm self adhesive, precut legends supplied on a sheet

- Self adhesive, can be applied to panels, components and equipment
- Support template: **991002 MG2-PLT** *(usually supplied with MG4 printer)*

Material: Rigid PVC, self extinguishing to class VO: UL 94
Operating temperature: -30°C...+60°C

| type | size (mm) | SW code | colour | description | tags per sheet | tags per box | price per box |
|---|---|---|---|---|---|---|---|
| **49290N** | 9 x 12 | **960** | white | precut self adhesive blank legends | 88 | 2200 | **8 778.00** |
| **49397N** | 9 x 15 | **961** | white | precut self adhesive blank legends | 77 | 1925 | **11 655.00** |
| **49190N** | 9 x 20 | **962** | white | precut self adhesive blank legends | 55 | 1375 | **9 030.00** |
| **49191N** | 9 x 35 | **964** | white | precut self adhesive blank legends | 33 | 825 | **10 605.00** |
| **49240N** | 9 x 12 | **960** | yellow | precut self adhesive blank legends | 88 | 2200 | **9 345.00** |
| **49347N** | 9 x 15 | **961** | yellow | precut self adhesive blank legends | 77 | 1925 | **11 130.00** |
| **49140N** | 9 x 20 | **962** | yellow | precut self adhesive blank legends | 55 | 1375 | **9 964.50** |
| **49141N** | 9 x 35 | **964** | yellow | precut self adhesive blank legends | 33 | 825 | **9 807.00** |


59042N




64040

### PMT — transparent legend holders to receive **MG-TAPW** 9 mm pre-printed tags *(above)*

Material: Plasticised PVC, self extinguishing to class VO: UL 94
Operating temperature: -40°C...+80°C
Free of Cadmium, Lead, Silicon and Teflon. Resistant to alkali, alcohol, acid and many other solvents

| type | for tags (mm) | mounting | colour | description | std pack qty | price per pack |
|---|---|---|---|---|---|---|
| | | | | self adhesive tag holder for surface mounting of 9 mm marking tags | | |
| **59042N** | 9 x 20 | adhesive | t/parent | self adhesive tag holder | 500 | **3 412.50** |
| **59050N** | 9 x 35 | adhesive | t/parent | self adhesive tag holder | 500 | **6 835.50** |
| **PMF-ET** | | | | tie-on tag holders for mounting on cables, hoses, tubes, conduits with cable ties | | |
| | | | | • Tie on holder (max cable tie width 6 mm) longitudinal mounting of cables, tubes, conduit | | |
| **64040** | 9 x 20 | 1 tie | t/parent | tie-on transparent tag holder | 1000 | **2 551.50** |
| **64050** | 9 x 35 | 2 tie | t/parent | tie-on transparent tag holder | 500 | **1 848.00** |
| **PMT-CT** | | | | tie-on tag holders for mounting on cables, hoses, tubes, conduits with cable ties | | |
| **54013** | 9 x 55 | 2 tie | t/parent | 55 mm t/parent tie-on tag holder | 500 | **2 163.00** |
| **54014** | 9 x 90 | 2 tie | t/parent | 90 mm t/parent tie-on tag holder | 250 | **1 732.50** |

### Rail holder and protective covers for 9 mm legends *(above)*

Legend rails provide an alternative to direct marking on components. 15 mm legends simply slide into rail and can be protected by using optional RT-CCP transparent protective strip.

- Legend rail for 9 mm labels
- Non-deformable up to 90°C
- Rigid dielectric high impact PVC. Lead-free, self extinguishing to class VO: UL 94


990506N

| | | | | | | |
|---|---|---|---|---|---|---|
| **RTA-TAPW** | *self adhesive rail, accepts 9 mm legends* | | | | | |
| **990506N** | 1 meter | adhesive | grey | adhesive rail holder for 9 mm legend | 25 | **5 197.50** |
| **RT-CCWS** | *transparent protective strip for above rail* | | | | | |
| **990734** | 1 meter | RT-CCWS | t/parent | protective strip for above 9 mm rails | 25 | **2 173.50** |



Above ZAR prices do not include VAT. E&OE




## 15 mm marking tags and holders

- Operating temperature: -30°C...+60°C
- Material: Rigid PVC, self extinguishing to class VO: UL 94
- Support template: **991002** **MG2-PLT** *(usually supplied with MG4 printer)*






| type | size (mm) | SW code | colour | description | tags per sheet | tags per box | price per box |
|---|---|---|---|---|---|---|---|
| **MG-TAP** | slide-in marking legends for **PMT-AC/ET/DT, PLR, PTPR** legend holders *(below)* | | | | | | |
| • Presented in stem format<br>• Tags are simply snapped off their stems and inserted into the appropriate holders | | | | | | | |
| **47090N** | 15 x 17 | **165** | white | slide-in markers for 15 mm holders | 42 | 1050 | **2 866.50** |
| **47091N** | 15 x 27 | **166** | white | slide-in markers for 15 mm holders | 28 | 1400 | **4 578.00** |
| **47092N** | 15 x 49 | **167** | white | slide-in markers for 15 mm holders | 14 | 700 | **5 218.50** |
| **47093** | 15 x 67 | **188** | white | slide-in markers for 15 mm holders | 14 | 350 | **4 851.00** |
| **MG-17.5-R** | marking legends for **RTR/RTA-TAP** rail *(overleaf)* | | | | | | |
| • For use with RTR/RTA-TAP 15 mm legend rails<br>• Modular legends to suit standard MCBs for distribution boards | | | | | | | |
| **990768N** | 15 x 17.5 | **321** | white | 1 module legend for rail holders | 42 | 1050 | **3 727.50** |
| **990766N** | 15 x 35 | **322** | white | 2 module legend for rail holders | 21 | 1050 | **5 848.50** |
| **990764N** | 15 x 52.5 | **323** | white | 3 module legend for rail holders | 14 | 700 | **7 518.00** |
| **990762** | 15 x 70 | **324** | white | 4 module legend for rail holders | 6 | 300 | **7 371.00** |
| **990798N** | 15 x 107.5 | **329** | white | 6 module legend for rail holders | 7 | 350 | **5 775.00** |
| **990883** | 15 x 140 | **331** | white | 8 module legend for rail holders | 7 | 350 | **7 518.00** |






| type | size (mm) | SW code | colour | description | tags per sheet | tags per box | price per box |
|---|---|---|---|---|---|---|---|
| **MG-TAA** | self adhesive precut legends | | | | | | |
| • Self adhesive - can be applied to panels, components and equipment<br>• Material: Rigid PVC - self extinguishing to class VO: UL 94<br>• Support template: **991002** **MG2-PLT** *(usually supplied with MG4 printer)* | | | | | | | |
| **49192N** | 15 x 17 | **965** | white | precut self adhesive blank legends | 42 | 1050 | **10 815.00** |
| **49193N** | 15 x 27 | **966** | white | precut self adhesive blank legends | 28 | 700 | **7 402.50** |
| **49194N** | 15 x 49 | **967** | white | precut self adhesive blank legends | 14 | 350 | **7 024.50** |
| **49195** | 15 x 67 | **977** | white | precut self adhesive blank legends | 14 | 350 | **14 175.00** |
| **MG-17.5-A** | self adhesive modular legends *(for modular MCBs)* | | | | | | |
| **990824** | 15 x 107.5 | **929** | white | 6 module self adhesive legends | 7 | 175 | **6 394.50** |
| **990880** | 15 x 140 | **931** | white | 8 module self adhesive legends | 7 | 175 | **6 489.00** |






PMT-AC



PMT-ET

| type | for tags (mm) | mounting | colour | description | std pack qty | price per pack |
|---|---|---|---|---|---|---|
| **PMT** | transparent legend holders for **MG-TAP** 15 mm pre-printed legends *(above)* | | | | | |
| PMT holders are specifically designed to receive a pre-printed marking tag into a protected sleeve on the holder. | | | | | | |
| • Material: Plasticised PVC, self extinguishing to class VO: UL 94<br>• Operating temperature: -40°C...+80°C<br>• Free of Cadmium, Lead, Silicon and Teflon. Resistant to alkali, alcohol, acids and solvents | | | | | | |
| **PMT-AC** | self adhesive legend holders for surface mounting of 15 mm marking legends | | | | | |
| **59002N** | 15 x 17 | adhesive | t/parent | self adhesive 15 mm tag holder | 500 | **4 242.00** |
| **59010N** | 15 x 27 | adhesive | t/parent | self adhesive 15 mm tag holder | 1000 | **10 605.00** |
| **59020N** | 15 x 49 | adhesive | t/parent | self adhesive 15 mm tag holder | 500 | **9 534.00** |
| **59030N** | 15 x 67 | adhesive | t/parent | self adhesive 15 mm tag holder | 250 | **6 919.50** |
| **PMF-ET** | *tie-on legend holders for mounting on cables, hoses, tubes and conduits with cable ties* | | | | | |
| • Tie on holder *(max cable tie width 6 mm)* longitudinal mounting of cables, tubes, conduit | | | | | | |
| **65000** | 15 x 17 | 1 tie | t/parent | tie-on transparent tag holder | 500 | **1 239.00** |
| **65010** | 15 x 27 | 1 tie | t/parent | tie-on transparent tag holder | 500 | **1 743.00** |
| **65020** | 15 x 49 | 2 tie | t/parent | tie-on transparent tag holder | 250 | **1 186.50** |
| **65030** | 15 x 67 | 2 tie | t/parent | tie-on transparent tag holder | 250 | **1 638.00** |

**Media** - Types



PC -40°C +115°C RoHS




## Legend holders/base to receive MG-TAP 15 mm pre-printed legends

**PMT** holders are specifically designed to receive a pre-printed marking legends into a protected sleeve.

| type | for tags (mm) | mount | colour | size (mm) | description | tags per sheet | tags per box | price per box |
|---|---|---|---|---|---|---|---|---|
| **Holder/base** to receive **MG-TAP** 15 mm pre-printed legends | | | | | | | | |
| **PLR** | *rectangular legend support/base - rivet fixing* | | | | | | | |
| **34202** | 15 x 17 | rivet | black | 17 x 20 | legend holder/base | | 100 | **1 774.50** |
| **34302** | 15 x 27 | rivet | black | 17 x 30 | legend holder/base | | 100 | **1 911.00** |
| **34402** | 15 x 49 | rivet | black | 17 x 52 | legend holder/base | | 100 | **2 362.50** |
| **34502** | 15 x 67 | rivet | black | 17 x 70 | legend holder/base | | 100 | **2 635.50** |
| **PTPR-22** | *legend holder for standard Ø 22.5 mm pushbuttons* | | | | | | | |
| **34102** | 15 x 27 | Ø 22.5 | black | 48 X 30 | rivet p/button legend | | 100 | **1 774.50** |
| **34702** | 15 x 27 | Ø 22.5 | black | 48 x 30 | adhesive p/button legend | | 100 | **2 425.50** |
| **MG-TAP-CCS** transparent protective covers for above legend supports | | | | | | | | |
| **990508N** | 15 x 17 | 165 | t/parent | | covers for legend supports | 42 | 1050 | **4 620.00** |
| **990510N** | 15 x 27 | 166 | t/parent | | covers for legend supports | 28 | 1400 | **8 998.50** |
| **990513N** | 15 x 49 | 167 | t/parent | | covers for legend supports | 14 | 700 | **8 599.50** |
| **990514N** | 15 x 67 | 168 | t/parent | | covers for legend supports | 14 | 350 | **8 274.00** |




New

## Rail holder and protective covers for MG-17.5 15 mm legends

Legend rails provide an alternative to direct marking on components. 15 mm legends simply slide into rail and can be protected by using optional RT-CCP transparent protective strip.

- Legend rail for 15 mm labels
- Rigid dielectric high impact PVC. Lead-free, self extinguishing to class VO: UL 94
- Non-deformable up to 90°C

| | | | | | price per 25 |
|---|---|---|---|---|---|
| **RTR-TAP** | *pre-drilled rail, accepts MG-17.5-R 15 mm legends* | | | | |
| **990454** | 430 mm | rivet | black | rail holder for 15 mm legend | 25 | **1 974.00** |
| **990664** | 650 mm | rivet | black | rail holder for 15 mm legend | 25 | **2 845.50** |
| **RTA-TAP** | *self adhesive rail, accepts MG-17.5-R 15 mm legends* | | | | |
| **990525N** | 1 meter | adhesive | black | adhesive rail holder for 15 mm legend | 25 | **4 158.00** |
| **RT-CCPS** | *transparent protective strip for above rail* | | | | |
| **990735** | 1 meter | RT-CCPS | t/parent | protective strip for above rails | 25 | **2 173.50** |




PC HF SF -40°C +130°C RoHS

## Push button legends Ø 22.5 mm precut

- Operating temperature: -30°C...+60°C
- Material: Rigid PVC, self extinguishing to class VO: UL 94
- Support template: **991002** **MG2-PLT** *(usually supplied with MG4 printer)*

| type | size (mm) | SW code | colour | description | tags per sheet | tags per box | price per box |
|---|---|---|---|---|---|---|---|
| **MG-PTS** | Ø22.5 mm precut legends for pushbuttons | | | | | | |
| **15090** | 40 x 30 | **1000** | white | Ø 22.5 mm pushbutton legend | 6 | 300 | **6 552.00** |
| **15040** | 40 x 30 | **1000** | yellow | Ø 22.5 mm pushbutton legend | 6 | 300 | **7 896.00** |
| **15000** | 40 x 30 | **1000** | black | Ø 22.5 mm pushbutton legend | 6 | 300 | **9 796.50** |
| **15091** | 50 x 30 | **1001** | white | Ø 22.5 mm pushbutton legend | 6 | 300 | **6 552.00** |
| **15041** | 50 x | **1001** | yellow | Ø 22.5 mm pushbutton legend | 6 | 300 | **7 896.00** |




PVC SF -30°C +60°C RoHS

## MG-VRT-A Panel plates self adhesive, customisable

Rigid PVC self adhesive panel plates used to create name plates, rating plates, data plates using company logos, technical data, serial numbers, certification, etc.

- Material: Rigid PVC - self extinguishing to class VO: UL 94
- Support template: **991002** **MG2-PLT** *(usually supplied with **MG4 printer**)*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **88916** | 25 x 50 | **853** | white | precut self adhesive blank labels | 8 | 200 | **5 197.50** |
| **88900N** | 32 x 58 | **200** | white | precut self adhesive blank labels | 6 | 150 | **5 323.50** |
| **88945** | 35 x 75 | **825** | white | precut self adhesive blank labels | 3 | 75 | **5 166.00** |
| **88918** | 50 x 50 | **858** | white | precut self adhesive blank labels | 4 | 100 | **5 145.00** |
| **88901** | 42 x 78 | **202** | white | precut self adhesive blank labels | 2 | 50 | **4 735.50** |
| **88902** | 62 x 88 | **203** | white | precut self adhesive blank labels | 1 | 25 | **5 281.50** |
| **88903** | 52 x 107 | **204** | white | precut self adhesive blank labels | 2 | 50 | **4 735.50** |
| **88913** | 92 x 118 | **813** | white | precut self adhesive blank labels | 1 | 25 | **5 281.50** |
| **88904** | 105 x 110 | **812** | white | precut self adhesive blank labels | 1 | 25 | **5 281.50** |






Above ZAR prices do not include VAT. E&OE

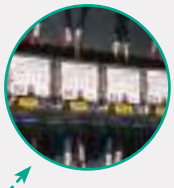
## Self adhesive precut legends for marking

- Self adhesive - can be applied to panels, components and equipment
- Material: Rigid PVC - self extinguishing to class VO: UL 94
- Support template: **991002 MG2-PLT** *(usually supplied with **MG4 printer**)*



MG-TAA

| type | size (mm) | SW code | colour | description | tags per sheet | tags per box | price per box |
|---|---|---|---|---|---|---|---|
| **MG-TAA** | self adhesive, precut legends | | | | | | |
| **49196** | 7 x 20 | **179** | white | precut self adhesive blank legends | 60 | 1500 | **7 308.00** |
| **49597** | 7 x 44 | **795** | white | precut self adhesive blank legends | 28 | 700 | **10 605.00** |
| **49498** | 8.5 x 30 | **720** | white | precut self adhesive blank legends | 33 | 825 | **10 605.00** |
| **49290N** | 9 x 12 | **960** | white | precut self adhesive blank legends | 88 | 2200 | **8 778.00** |
| **49397N** | 9 x 15 | **961** | white | precut self adhesive blank legends | 77 | 1925 | **11 655.00** |
| **49190N** | 9 x 20 | **962** | white | precut self adhesive blank legends | 55 | 1375 | **9 030.00** |
| **49191N** | 9 x 35 | **964** | white | precut self adhesive blank legends | 33 | 825 | **10 605.00** |
| **49193N** | 15 x 27 | **966** | white | precut self adhesive blank legends | 28 | 700 | **7 402.50** |
| **49194N** | 15 x 49 | **967** | white | precut self adhesive blank legends | 14 | 350 | **7 024.50** |
| **49195** | 15 x 67 | **977** | white | precut self adhesive blank legends | 14 | 350 | **14 175.00** |
| **49293** | 20 x 48 | **850** | white | precut self adhesive blank legends | 10 | 250 | **7 014.00** |
| **49294** | 20 x 72 | **851** | white | precut self adhesive blank legends | 5 | 125 | **8 074.50** |



MG-VYT

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MG-VYT** | self adhesive precut labels | | | | | | |
| **46915** | 6 x 15 | **181** | white | precut self adhesive blank labels | 105 | 5250 | **4 977.00** |
| **44891** | 7 x 10 | **191** | white | precut self adhesive blank labels | 120 | 6000 | **5 155.50** |
| **46928** | 7 x 15 | **182** | white | precut self adhesive blank labels | 60 | 3000 | **4 945.50** |
| **46935** | 7 x 20 | **190** | white | precut self adhesive blank labels | 60 | 3000 | **4 945.50** |
| **46914** | 9 x 12 | **160** | white | precut self adhesive blank labels | 80 | 4000 | **4 987.50** |
| **44895** | 9 x 15 | **161** | white | precut self adhesive blank labels | 70 | 3500 | **4 809.00** |
| **44896N** | 9 x 20 | **162** | white | precut self adhesive blank labels | 55 | 2750 | **5 134.50** |
| **46910N** | 9 x 35 | **164** | white | precut self adhesive blank labels | 33 | 1650 | **5 103.00** |
| **46921N** | 15 x 27 | **186** | white | precut self adhesive blank labels | 28 | 1400 | **5 376.00** |
| **46933N** | 15 x 49 | **187** | white | precut self adhesive blank labels | 14 | 700 | **4 987.50** |
| **46925** | 25 x 50 | **612** | white | precut self adhesive blank labels | 8 | 400 | **4 914.00** |
| **46926** | 25 x 80 | **613** | white | precut self adhesive blank labels | 4 | 200 | **4 914.00** |

*Other sizes available on request.*

- Dielectric PVC film labels used for internal and external marking
- Support template: **991002 MG2-PLT** *(usually supplied with MG4 printer)*



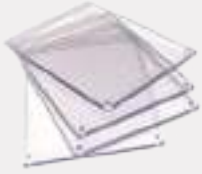
48900N + 47590

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **MG-VRT-R** | customisable panel plates | | | | | | |

Rigid PVC panel plates used to create name plates, rating plates, data plates using company logos, technical data, serial numbers, certification, etc. CPT transparent polycarbonate covers can be used for increased durability

- Material: Rigid PVC - self extinguishing to class VO: UL 94
- Support template: **991002 MG2-PLT** *(usually supplied with MG4 printer)*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **48900N** | 32 x 58 | **200** | white | precut customisable panel plates | 6 | 300 | **6 552.00** |
| **48901** | 42 x 78 | **202** | white | precut customisable panel plates | 2 | 100 | **6 142.50** |
| **48902** | 62 x 88 | **203** | white | precut customisable panel plates | 1 | 50 | **6 363.00** |
| **48903** | 52 x 107 | **204** | white | precut customisable panel plates | 2 | 100 | **6 142.50** |
| **48913** | 92 x 118 | **813** | white | precut customisable panel plates | 1 | 50 | **6 363.00** |



CPT

**CPT** transparent rivet fixing protection covers for panel plates *(above)*

Polycarbonate covers can be used to increase durability *(Ø 3 mm mounting holes)*

| | | | | | | | | pack qty | per pack |
|---|---|---|---|---|---|---|---|---|---|
| **47590** | 37 x 79 | – | t/parent | covers for | 32 x 58 | panel plates | | 10 | **977.55** |
| **47591** | 47 x 98 | – | t/parent | covers for | 42 x 78 | panel plates | | 10 | **1 022.70** |
| **47594** | 67 x 109 | – | t/parent | covers for | 62 x 88 | panel plates | | 10 | **1 144.50** |
| **47592** | 57 x 127 | – | t/parent | covers for | 52 x 107 | panel plates | | 10 | **1 042.65** |
| **47593** | 97 x 140 | – | t/parent | covers for | 92 x 118 | panel plates | | 10 | **2 047.50** |

## Metal Detectable - Media

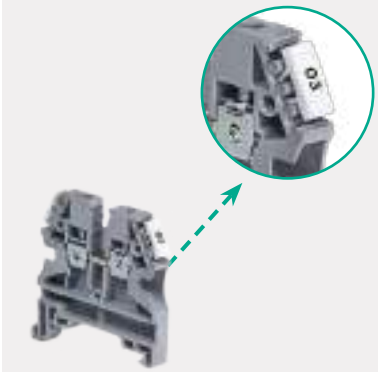
In food & beverage, pharmaceuticals, and cosmetics, maintaining top product quality is vital for end-user safety. **Cembre's new MD (Metal Detectable)** media ensure reliable detection with a special additive that is easily detected by metal detectors and X-rays.

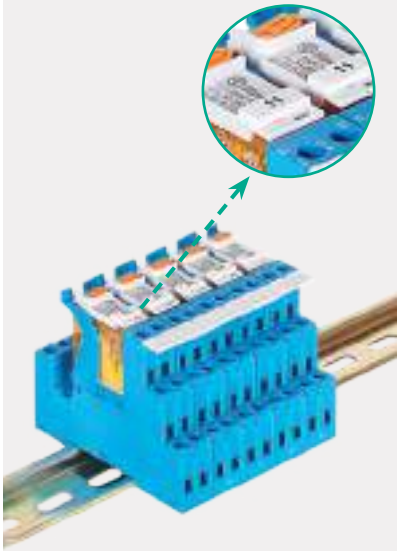


Scan to Learn

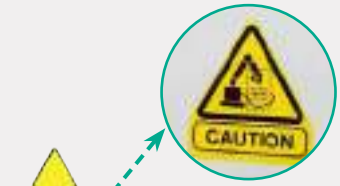











990701

New



990740

## MG-CPM terminal block markers

Terminal block markers are available in versions to suit the particular clip formats of the most widely used terminals, they provide an elevated mechanical robustness, high dimensional stability and are Halogen free. To optomise application time, additional data such as job details, location, etc - can be printed on the stems.

| type | size (mm) | SW code | colour | description | tags per sheet | tags per box | price per box |
|---|---|---|---|---|---|---|---|
| **MG-CPM** terminal block markers | | | | | | | |
| • Material: | | | | Polycarbonate, Halogen free self extinguishing to class VO: UL 94 | | | |
| • Support template: | | | | **991011** **MG2-QTB** *(usually supplied with **MG4 printer**)* | | | |
| **MG-CPM-01** | | | | | | | |
| For terminals - **Klemsan,** Weidmuller, ABB Entrelec, Wago, Allen Bradley, ContaClip, Connectwell | | | | | | | |
| **41094*** | 5 x 7 | **13** | white | terminal block marking tag | 56 | 1960 | **4 042.50** |
| **41090N** | 5 x 10 | **14** | white | terminal block marking tag | 56 | 1960 | **3 570.00** |
| **41190N** | 5 x 10 | **22** | white | terminal block marking tag | 48 | 1680 | **3 465.00** |
| **41091N** | 5 x 15 | **16** | white | offset terminal block marking tag | 48 | 1680 | **3 927.00** |
| **41095** | 6 x 10 | **17** | white | modular terminal block marking tag | 48 | 1680 | **3 465.00** |
| **41096** | 8 x 10 | **18** | white | modular terminal block marking tag | 32 | 1120 | **3 591.00** |
| * *Use support template* **991008** | | | | | | | |
| **MG-CPM-04** | | | | | | | |
| For terminals - Phoenix Contact UK/UT/ST, ABB Entrelec, Wago, Cabur, Connectwell | | | | | | | |
| **41390N** | 5 x 10 | **42** | white | terminal block marking tag | 48 | 1680 | **3 465.00** |
| **41391** | 6 x 10 | **45** | white | modular terminal block marking tag | 48 | 1344 | **2 772.00** |
| **41396** | 8 x 10 | **48** | white | modular terminal block marking tag | 32 | 1120 | **3 591.00** |
| **MG-CPM-05** | | | | | | | |
| For terminals - **Wieland,** Telemechanique, Legrand | | | | | | | |
| • Support template: | | | | **991004** **MG2-WTB** support template for **MG-CPM-05** | | | |
| **41490** | 5 x 10 | **51** | white | terminal block marking tag | 56 | 1960 | **4 042.50** |
| **41494** | 5 x 10 | **51** | white | modular terminal marking tag | 56 | 1960 | **4 042.50** |
| **MG-CPM-07** | | | | | | | |
| For terminals - Phoenix Contact ST/STU/STS/STI/STN/STTB, Siemens 8WH, Schlegel | | | | | | | |
| **41691** | 5 x 10 | **71** | white | terminal block marking tag | 48 | 1680 | **3 465.00** |
| **MG-CPM-11** | | | | | | | |
| For terminals - **Finder, Klemsan,** Allen Bradley, Weidmuller WDU, Conta Clip RK, Omron | | | | | | | |
| **46392** | 6 x 12 | **106** | white | terminal block marking tag | 48 | 1344 | **2 772.00** |
| **MG-CPM-13** | | | | | | | |
| For terminals - **Finder, Klemsan,** Allen Bradley, Weidmuller WDU, Conta Clip RK, Omron | | | | | | | |
| **41790** | 5 x 12 | **113** | white | terminal block marking tag | 56 | 1960 | **4 042.50** |
| **MG-CPM-15** | | | | | | | |
| For terminals - **Klemsan,** WAllen Bradley, Weidmuller, Conta Clip RK, Wago Top Job | | | | | | | |
| **42908** | 5 x 5 | 402 | white | terminal block marking tag | 48 | 1680 | **3 927.00** |
| **MG-SIGNS-VY** self adhesive **panel labels**, warning, hazard, prohibition | | | | | | | |
| • Material: | | | PVC film | | | | |
| **991104** | 50 | **260** | yellow | self adhesive triangle warning sign | 4 | 200 | **5 470.50** |
| **991105** | 100 | **242** | yellow | self adhesive triangle warning sign | 1 | 50 | **5 281.50** |
| **991109** | 34 x 74 | **246** | yellow | self adhesive rectangular label | 2 | 100 | **5 386.50** |
| **991110** | 52 x 105 | **247** | yellow | self adhesive rectangular label | 2 | 100 | **5 386.50** |
| **991106** | Ø 62 | **232** | yellow | round label for 22.5 mm hole | 1 | 50 | **5 281.50** |
| **991107** | Ø 90 | **233** | yellow | round label for 22.5 mm hole | 1 | 50 | **5 281.50** |



Above ZAR prices do not include VAT. E&OE


Rolly3000

## Thermal transfer printer for customised marking of tags on rolls

**ROLLY3000** is designed for volume printing of all Cembre flat material on rolls, eg. Cable tags for holders, tie-on, wraparound cable markers, legend strips and labels.

Carriage loading and unloading operations are rapid and support templates are easily interchangeable.
As pigment deposited from the ribbon dries instantaneously, printed sheets are immediately ready for use.

**ROLLY3000 package comprises:** *(H) 288 x (W) 252 x (D) 460 mm*

- ROLLY3000 printer
- Mains and USB cable, Black printer ribbon, installation/operating documentation, GENIUSPRO - software

| type | description | price |
|---|---|---|
| **ROLLY3000 printer** | Thermal transfer printer for marking of tags and legends | |
| • **Speed** | Prints 1000 TPM-ROLL 4 x 10 cable tags in less than 2 minutes | |
| • **Convenience** | Software provides quick and easy upload of data to be printed | |
| • **Economy** | Prints up to 140.000 TPM-ROLL 4 x 10 cable tags with a single ribbon | |
| • **Quality** | Printer resolution 300 dpi | |
| **ROLLY3000** | Thermal transfer printer for marking tags and legends on rolls | **135 450.00** |

### Accessories for ROLLY3000 printer

| type | width (mm) | length (met.) | colour | description | Pantone ref. | price |
|---|---|---|---|---|---|---|
| **842112** | 112 | 200 | black | TPS-060 thermal t/fer printer ribbon | Black C | **3 937.50** |

**TPM-ROLL** push-in 4 mm marking tags on a roll for **PMF, PMT-AC** tag holders

- Presented on a roll for ROLLY3000 printers
- Tags are simply inserted into appropriate holders and snapped off their branches

Material: Rigid PVC, self extinguishing to class VO: UL 94
Operating temperature: -30°C...+60°C


44091B

| type | size (mm) | **SW code** | colour | description | tags per roll | price per roll |
|---|---|---|---|---|---|---|
| **44091B** | 4 x 12 | **4022** | white | push-in tags for PMF 4 mm holders | 12552 | **16 380.00** |
| **44092B** | 4 x 15 | **4023** | white | push-in tags for PMF 4 mm holders | 12552 | **16 380.00** |
| **44093B** | 4 x 20 | **4005** | white | push-in tags for PMF 4 mm holders | 10200 | **17 850.00** |
| **44096B** | 4 x 30 | **4026** | white | push-in tags for PMF 4 mm holders | 6270 | **16 170.00** |
| **44097B** | 4 x 40 | **4007** | white | push-in tags for PMF 4 mm holders | 5005 | **15 435.00** |
| **44041B** | 4 x 12 | **4022** | yellow | push-in tags for PMF 4 mm holders | 12552 | **22 995.00** |
| **44042B** | 4 x 15 | **4023** | yellow | push-in tags for PMF 4 mm holders | 12552 | **22 995.00** |
| **44043B** | 4 x 20 | **4005** | yellow | push-in tags for PMF 4 mm holders | 10200 | **24 885.00** |
| **44046B** | 4 x 30 | **4026** | yellow | push-in tags for PMF 4 mm holders | 6270 | **23 310.00** |
| **44047B** | 4 x 40 | **4007** | yellow | push-in tags for PMF 4 mm holders | 5005 | **22 680.00** |

**TAR-ROLL** push-in 9 mm marking tags for **PMT and RT-TAPW** tag holders

| | | | | | | |
|---|---|---|---|---|---|---|
| **75098** | 9 x 20 | **4301** | white | push-in tags for PMT 9 mm holders | 5800 | **22 470.00** |
| **75099** | 9 x 70 | **4300** | white | push-in tags for PMT 9 mm holders | 1450 | **25 620.00** |
| **75049** | 9 x 70 | **4300** | yellow | push-in tags for PMT 9 mm holders | 1450 | **30 135.00** |


44192-SBS

**ETF-ROLL** tie-on, precut one piece 13 mm markers *(max cable tie width 4.8 mm)*

| | | | | | | |
|---|---|---|---|---|---|---|
| **44192-SBS** | 13 x 57 | **4400** | white | tie-on cable and conduit tags | 1775 | **15 120.00** |
| **44142-SBS** | 13 x 57 | **4400** | yellow | tie-on cable and conduit tags | 1775 | **18 795.00** |

**STRIP-ROLL-R** modular component legend strips on a roll

- For use with RTA-TAP rail legend holder *(page **L-53**)*
- **SW code - 5002** - 430 mm / **SW 5102** - 630 mm / **SW 502** - 1000 mm

| | | | | | | |
|---|---|---|---|---|---|---|
| **13160** | 15 mm | – | white | modular component legend strip | 25 meter | **9 229.50** |

**TTL** self-adhesive thermal transfer labels on a roll *(Polyester film)*


84...WPYG

| | | | | | | |
|---|---|---|---|---|---|---|
| **8400008WPYG** | 7 x 15 | **4102** | white | self adhesive labels on a roll | 32000 | **14 700.00** |
| **8401010WPYG** | 7 x 20 | **4101** | white | self adhesive labels on a roll | 24000 | **12 390.00** |
| **8400092WPYG** | 9 x 15 | **4107** | white | self adhesive labels on a roll | 26660 | **13 650.00** |
| **8400017WPYG** | 9 x 20 | **4106** | white | self adhesive labels on a roll | 19995 | **11 760.00** |
| **8400094WPYG** | 9 x 38 | **4108** | white | self adhesive labels on a roll | 13330 | **14 595.00** |
| **8401008WPYG** | 15 x 27 | **4120** | white | self adhesive labels on a roll | 13320 | **15 855.00** |
| **8400038WPYG** | 22 x 40 | **4164** | white | self adhesive labels on a roll | 4800 | **9 408.00** |
| **8400073WPYG** | 25 x 45 | **4168** | white | self adhesive labels on a roll | 5710 | **14 910.00** |
| **8400042WPYG** | 30 x 50 | **4175** | white | self adhesive labels on a roll | 2420 | **8 316.00** |
| **8400072WPYG** | 30 x 80 | **4176** | white | self adhesive labels on a roll | 2420 | **12 705.00** |
| **8400051WPYG** | 40 x 80 | **4188** | white | self adhesive labels on a roll | 2800 | **18 480.00** |
| **8400083WPYG** | 40 x 90 | **4121** | white | self adhesive labels on a roll | 1860 | **14 490.00** |


JOKARI
original
F205




# M

## Tools

Interactive Catalogue

# Cable & Testing Tools





Hand-operated cable strippers

M-1...2



Hand-operated crimping tools

M-3



Cable preparation tools

M-4



Hydraulic & Battery-operated cable preparation tools

M-5...7



DIN rail & Cable trunking cutters

M-8



Digital & Clamp multimeters

M-9...10



Portable network analyser

M-11



Thermal camera & Electrical installation tester

M-12...13



Training kits & Courses

M-14

Need help navigating the interactive catalogue?
Scan the QR code for a short tutorial video.

**Jokari** a market leader in stripping technology for all types of wires, cables and conductors. Producing professional tools for most application areas in which wires must be processed easily, quickly and safely.

- Highest standards of workmanship and material
- Durable, reliable performance guaranteed

| type | tool name | description | wire size | price |
|---|---|---|---|---|
| **Allrounder** | | *for stripping of standard round and flat cables up to 15 mm* | | |

For removing of the coating, longitudinal sections, stripping of solid or flexible wires for exposing of wire lengths for specific connections, and a broad working range.

- Round cables Ø 4...15 mm, Flat cables max. 15 mm wide and flexible wire 1.5...50 mm²
- Extra blade for longitudinal cut. 2 stripping notches with length stop for stripping conductors
- Removable length stop, suitable for left and right hand use, can be stored in the tool handle.

| | | | | |
|---|---|---|---|---|
| **30900** | **Allrounder** | universal stripper for round and flat cables | 4 - 15 mm² | **402.15** |


30199

| | | | | |
|---|---|---|---|---|
| **PV Strip Pro** | | *for stripping of solar / photovoltaic cables up to 15 mm* | | |

The Jokari PV-Strip Pro is a versatile tool designed for stripping solar and photovoltaic cables from 1.5 to 16 mm². Ideal for professionals, it ensures fast, efficient, and reliable cable stripping in various PV installations.

- Additional blade for making a longitudinal cut
- Precise alignment of the blades to standard solar cables
- Light weight because of body made of high-quality, wear-resistant polyamide,

| | | | | |
|---|---|---|---|---|
| **30199** | PV Strip Pro | universal stripper for solar cables | 1.5 - 16 mm² | **680.40** |


20100

| | | | | |
|---|---|---|---|---|
| **Secura 2K** | | *soft grip (professional wire stripper)* | | |

Automatic wire stripper for single, multiple and fine stranded cables 0.2...6.0 mm² with std insulation.

- No adjustment necessary for different cross-sections
- Integrated safety wire cutter for wires up to 2.5 mm²
- Strip length stopper adjustable 6 to 18 mm
- Ergonomic security soft grip handle *(non-tiring long operation)*

| | | | | |
|---|---|---|---|---|
| **20100** | **Secura 2K** | soft-grip wire stripper *(incorporating cutter)* | 0.2 - 6 mm² | **830.55** |
| **29100** | | spare blade set for above soft-grip stripper | | **345.45** |


20050

| | | | | |
|---|---|---|---|---|
| **Super 4 plus** | | *wire stripper (econo version)* | | |

- Automatic wire stripper for solid and standard wires 0.2 - 6 mm²
- Integrated safety cutter for wires up to max. 2.5 mm²
- Strip length stopper adjustable: 6 to 15 mm
- No adjustment necessary for different cross-sections

| | | | | |
|---|---|---|---|---|
| **20050** | **Super 4 plus** | econo wire stripper *(incorporating wire cutter)* | 0.2 - 6 mm² | **464.10** |

| | | | | |
|---|---|---|---|---|
| **No. 6-16** | | *stripper for larger wire sizes 6 - 16 mm²* | | |

Suitable for solid and stranded conductors 6...16 mm² for removing the outer sheath from PVC-Flex.

- Automatic wire stripper suitable for wires 6 - 16 mm² *(no adjustments required)*
- Special cut permits removal of outer sheath of 3 core-flex 3 x 0.75 mm and solar cables
- Adjustable strip length:15 - 18 - 20 mm

| | | | | |
|---|---|---|---|---|
| **20090** | **No.6-16** | wire stripper for larger cross-section wires | 6 - 16 mm² | **1 386.00** |

| | | | | |
|---|---|---|---|---|
| **Universal No.12 - Cable stripper** | | | | |

For quick, precise cable stripping of all common round and multicore cables Ø 8...13 mm.

- No adjustment of cutting depth necessary
- Ideal for cable stripping confined spaces such as in junction boxes
- Blades with special Titanium-Nitride coating (TIN) to achieve longer life, faster cutting and less wear

| | | | | |
|---|---|---|---|---|
| **30120** | **Universal No.12** | universal for all round cables *(no adjustment)* | Ø 8 - 13 mm | **308.70** |


20090

| | | | | |
|---|---|---|---|---|
| **Secura No.15 - Super stripper** | | | | |

- No cutting depth adjustments required
- Integrated, multi-functional slide-out blade
- Locking mechanism prevents unwanted opening of the tool
- Absolutely straight-forward longitudinal cuts - with innovative internal cable duct
- Special outlined blades for effortless stripping of wires of diameters 0.2 - 0.3 - 0.8 - 1.5 - 2.5 - 4.0 mm²

| | | | | |
|---|---|---|---|---|
| **30155** | **Secura No.15** | same as No.12 + wire stripper 0.2...4 mm² and blade | Ø 8 - 13 mm | **669.90** |

| | | | | |
|---|---|---|---|---|
| **Flat cable stripper** | | | | |

For PVC insulated and sheated cables e.g. Twin Flat Cable 2 x 1/1.5/2.5 mm²

Twin and Earth Cable 3 x 1.0 mm², 3 x 1.5 mm², 3 x 2.5 mm²

- Removes outer sheath and inner conductor insulation *(no adjustment necessary)*
- Adjustable strip length:15 - 18 - 20 mm

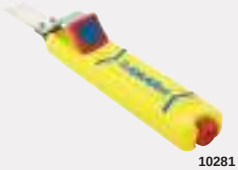
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|---|---|---|---|---|
| **20030** | **EM-Set FKZ** | for flat twin and twin + earth cables | 0.75...2.5 mm² | **1 270.50** |


30120

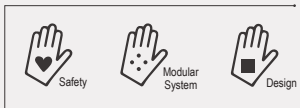


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100% MADE IN GERMANY made by JOKARI


10281


10350





70000


30161


62000

## Specialised wire strippers

- Highest standards of workmanship and material - durable, reliable performance guaranteed
- Blades with special Titanium-Nitride coating (TIN) to achieve longer life, faster cutting and less wear

| type | tool name | description | wire Ø | price |
|---|---|---|---|---|
| **Cable knives** | | *cable knife* | *contains spare blade (inside handle)* | |
| | | • For stripping outer sheath from all standard round cables<br>• Automatic swivel blade *(screw adjustable for cutting depth)* | | |
| **10160** | **Secura No.16** | cable knife *(adjustable blade depth)* | 4 - 16 mm | **290.85** |
| **10280** | **Secura No.28H** | cable knife with additional hooked blade | 8 - 28 mm | **321.30** |
| **10281** | **Secura No.28G** | cable knife with additional straight blade | 8 - 28 mm | **321.30** |
| **19000** | – | spare blade for above cable knives | *(3 pc set)* | **283.50** |
| **Cable knife system 4-70** | | *with newly developed hook blade protection mechanism* | | |
| | | • Bracket change system permits stripping of cables from Ø 4...70 mm diameter with just one tool<br>• Perfect ergonomic design ensures easy, comfortable handling | | |
| **70000** | **System 4-70** | knife with protected hook blade with bracket No. 28 | 8 - 28 mm | **951.30** |
| **79016** | **Bracket No. 16** | bracket for system 4 - 70 for cables with diameter | 4 - 16 mm | **270.90** |
| **79035** | **Bracket No. 35** | bracket for system 4 - 70 for cables with diameter | 27 - 35 mm | **306.60** |
| **79050** | **Bracket No. 50** | bracket for system 4 - 70 for cables with diameter | 35 - 50 mm | **306.60** |
| **79070** | **Bracket No. 70** | bracket for system 4 - 70 for cables with diameter | 50 - 70 mm | **306.60** |
| **19000** | – | spare blade for above cable knives | *(3 pc set)* | **283.50** |
| **Coax cable strippers** | | *for coaxial cables* | | |
| | | **Secura Coaxi No.1**, strips coaxial cables in two easy and quick motions, striping the outer sheathing and inner dielectric coat precisely without any damage to the wires or essential shielding.<br>• Quick, easy stripping of coaxial cable types - TV antenna cables, RG58/59, PVC-Flex 3 x 0.75 mm²<br>• No adjustment necessary, without damaging the inner metal shield | | |
| **30600** | **Coaxi No. 1** | Coax/RG59/59, CAT and PVC cables 3 x 0.75 mm² | Ø 4.8 - 7.5 mm | **336.00** |
| **PC-Strip** | | *for PVC-insulated data communications and control cables* | | |
| | | Special sheathing and insulation stripping tool for PVC-insulated data communications and control cables.<br>• No adjustment of cutting depth necessary *(wire stripping range 0.2 - 4.0 mm²)* | | |
| **30160** | **PC-Strip** | data/network/printer/control cables 0.2...4 mm² | Ø 5 - 15 mm | **744.45** |
| **PC-CAT** | | *for CAT5, CAT6, CAT7, Twisted-Pair-Cable* | | |
| | | For PVC-insulated data communications and control cables Cat5, Cat6, Cat7, twisted-pair, network and thinly insulated cables. Also for stripping individual wires *(0.2…0.8 mm²)*<br>• No adjustment of cutting depth necessary *(wire stripping range: 0.2…0.8 mm²)*<br>• Integrated, multi-functional slide-out blade | | |
| **30161** | **PC-CAT** | CAT5 / 6 / 7 cable or twisted pair 0.2...4 mm² | Ø 4.5 - 10 mm | **593.25** |
| **Quadro Plus** | | *4 functions in one* - **cutting - twisting - stripping - crimping** | | |
| | | Ergonomic, automatic wire stripper and crimping pliers for wires from 0.5...2.5 mm² wire stopper for perfect length, for quick precise stripping and crimping on insulated sleeves.<br>• Self adjusting blades cause no damage to conductors<br>• Integrated twisting device prevents splaying of wire strands<br>• Trapezium crimping to VDE 0609<br>• Cartridge accepts insulated ferrules *(in strips)* 0.5...2.5 mm²<br>• Incorporated side cutter for wires up to 2.5 mm² | | |
| **62000** | **Quadro** | insulated carrying case with 2 spare cartridges | 0.5 - 2.5 mm² | **4 798.50** |
| **60100** | **–** | spare quick-change cartridges for Quadro tool | – | **202.65** |



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4300-4661



4300-3129

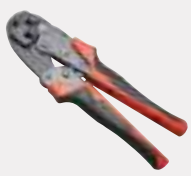
4300-3149



IT6L



JSL 1305-1



HNKE50

## Manual crimping tools for wire ferrules *(bootlace terminals)*

Proteus 10S - Professional self-adjusting crimping tool providing a square crimp cross section suitable for wire ferrules 0.14...10 mm². Ergonomically shaped handles with selected surface textures for comfortable, frequent use.

- Professional self-adjusting crimping tool providing a square crimp profile on wire ferrules
- Full cycle ratchet mechanism ensuring consistent, reliable crimp *(release on completion of crimping operation)*
- Ergonomic handles, light weight, low handle force and optimum opening for comfortable crimping
- Release lever to clear miscrimps and obstructions *(releases jaws before completion of crimp)*
- Non-slip rubber grip pad for applying pressure against a surface

| type | for terminals | conductor (mm²) | cable entry | description | price |
|---|---|---|---|---|---|
| **Pressmaster - Professional self-adjusting crimping tool** | | | | | |
| • High precision die geometry for a clearly defined square crimp shape of the ferrule<br>• Automatic self-adjustment to required wire size | | | | | |
| **4300-4661** | ferrules | 0.14…10 | side | professional self-adjusting crimping tool | **2 425.50** |
| **Mobile frame system - with interchangeable dies for various terminals** | | | | | |
| Lightweight, compact ratchet crimp tool designed for most types of mechanical, electrical and electronic connectors. Easily interchangeable crimp dies are kept together with a special pin to simplify handling.<br>• Reliable crimping performance consistent and accurate with a parallel action stroke.<br>• Easy-access release for fast, simple exchange of crimp dies *(no special tools required)* | | | | | |
| **4300-3149** | die dependant | | side | MCT frame only for interchangeable dies | **631.05** |
| **Interchangeable die sets for above tool frame**<br>• A wide range of crimp dies to cover all applications in just one tool frame.<br>• Dies are kept in pairs and delivered in a modular reusable box. | | | | | |
| **4300-3129** | insulated | 0.5 to 2.4 | side | red/blue insulated terminal crimping die set | **451.50** |
| **4300-3128** | insulated | 4 to 6 | side | yellow insulated terminal crimping die set | **386.40** |
| **4300-3137** | uninsulated | 0.75 to 2.5 | side | cable lug crimping die set | **386.40** |
| **4300-3139** | uninsulated | 4 to 10 | side | cable lug crimping die set | **386.40** |
| **4300-3127** | end sleeves | 0.25 to 10 | side | wire end sleeve crimping die set | **386.40** |
| **4300-3153** | end sleeves | 16 to 25 | side | wire end sleeve crimping die set | **386.40** |
| **4300-3154** | end sleeves | 35 to 50 | side | wire end sleeve crimping die set | **386.40** |
| **4300-3146** | open barrel | 0.5 to 6 | side | open barrel connector crimping die set | **631.05** |
| **4300-3136** | coaxial | RG58/59/62/71 | side | coaxial connector crimping die set | **450.45** |
| **Z&F - Crimping tools** *(for insulated and uninsulated ferrules)* | | | | | |
| **Crimpit 2.4** | end sleeves | 0.5 to 2.4 | | economic crimping tool *(front and side entry)* | **943.95** |
| **Crimping tool with ratchet closing control** | | | | | |
| **Crimpit F6L** | end sleeves | 0.5 to 6 | side | crimping tool for wire end ferrules *(5 profiles)* | **1 512.00** |
| **Crimpit F16L** | end sleeves | 6 to 16 | side | crimping tool for wire end ferrules *(3 profiles)* | **1 512.00** |
| **Crimpit F25L** | end sleeves | 6 to 25 | side | crimping tool for wire end ferrules *(4 profiles)* | **1 606.50** |
| **Crimpit IT6L** *(for pre-insulated cable lugs)*<br>• Crimping tool for PVC, PC and DPA insulated lugs, with ratchet closing control<br>• Crimping profiles for different wire cross-sections *(red/blue/yellow)* | | | | | |
| **Crimpit IT6L** | insulated | 0.5 to 6 | side | crimping tool for pre-insulated lugs *(3 profiles)* | **1 491.00** |
| **Jeesoon - Crimping tool for pre-insulated terminals** | | | | | |
| • With ratchet closing control<br>• Crimping profiles for different wire cross-sections *(red/blue/yellow)* | | | | | |
| **JSL 1305-1** | insulated | 0.5 to 6 | side | crimping tool for pre-insulated terminals | **689.85** |
| **Cembre - Crimpstar range - Ratchet crimping tools** | | | | | |
| • Ergonomically designed non-slip moulded plastic grips<br>• Factory-set ratchet for crimping control *(automatic release on completion of crimping operation)*<br>• Emergency release lever *(releases jaws before completion of crimp)* | | | | | |
| **HP3** | insulated | 0.25 to 6 | side | red/blue/yellow ratchet crimping tool | **1 774.50** |
| **HNN3** | insulated | 1.5 to 10 | side | manual indent ratchet crimping tool | **1 995.00** |
| **HNN4** | insulated | 10 to 16 | side | manual indent ratchet crimping tool | **1 900.50** |
| **HN-A25** | uninsulated | 10 to 25 | side | manual hexagona ratchet crimping tool | **3 202.50** |
| **HNKE4** | end sleeves | 0.5 to 4 | side | wire end sleeve crimping tool | **2 037.00** |
| **HNKE16** | end sleeves | 4 to 16 | side | wire end sleeve crimping tool | **2 289.00** |
| **HNKE50** | end sleeves | 25 to 50 | side | wire end sleeve crimping tool | **2 110.50** |

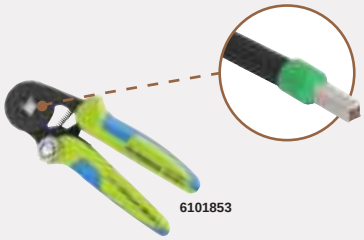


Above ZAR prices do not include VAT. E&OE


700 015 36


SC5X


610 001 0


6101853

## Professional hand tools for cable preparation

| type | wire sizes mm² | tool length | description | dimensions (mm) H | W | D | price |
|---|---|---|---|---|---|---|---|
| **Cable shears** *(cutters)* | | | | | | | |
| • For cutting single/multi-strand and fine wire aluminium and copper cables<br>• Easy, clean cut with one hand operation - no crushing or deformation of cables | | | | | | | |
| **700 015 36** | Cu 70 | 170 mm | cable shears for stranded conductors up to 70 mm² | | | | **746.55** |
| **Professional scissors** *supplied with carry case and swivel belt hook* | | | | | | | |
| **Robust-A** professional scissors with special steel frame for high resistance and a long life<br>• Safe and easy operation even when wearing work gloves<br>• Dual compound material - soft rubber inserts to maximise grip<br>• Extremely lightweight and robust for safe, easy handling and comfort<br>• Easy cutting of conductors up to 50 mm² using the shaped grooves in each blade | | | | | | | |
| **SC5X** | scissors | | professional workmans scissors | 162 | 77 | 18 | **577.50** |
| **Crimping tools for insulated and uninsulated ferrules** *(bootlace terminals)* | | | | | | | |
| Entry-level crimping tool for 0.25 – 2.5 mm² ferrules PE 7.1<br>• Forged body - milled trapezoidal crimp profile | | | | | | | |
| **610 001 0** | 0.25...2.5 | 150 mm | entry-level crimping tool for ferrules 0.25...2.5 mm² | | | | **576.45** |
| **Professional crimping tool for 0.08 - 16 mm² ferrules PEW 8.185 / PEW8.87**<br>• The established, patented tool further improved<br>• High-precision die geometry leads to a clearly defined square crimp shape of the ferrule<br>• Automatic self-adjustment to requested wire size | | | | | | | |
| **610 185 3** | 0.08-16 | side entry | professional crimping tool for ferrules 0.08 - 16 mm² | | | | **3 843.00** |
| **610 087 3** | 0.08-10 | front entry | professional crimping tool for ferrules 0.08 - 10 mm² | | | | **3 906.00** |


LC 100

## Automatic machines for cable preparation

| type | wire sizes (mm²) | measuring length (mm) | description | dimensions (mm) H | W | D | price |
|---|---|---|---|---|---|---|---|
| **Cable cutting machine** *supply voltage 100...240 VAC 50/60Hz*<br>**LC 100** offers significant potential savings. Measuring and transport rollers automatically adjust to wire diameter on insertion. Enter the desired length and quantity on the control panel and the production can begin. Included software enables recurring cutting jobs to be saved as projects.<br>• Easy to use, faster material change<br>• Cable cross-section is automatically detected<br>• Simple and fast data entry via clear graphical display and control panel<br>• High measuring accuracy through separate measuring and transporting roller | | | | | | | |
| **LC 100** | 0.8..10 | 2 mm...1000 meter | automatic wire cutter | 194 | 228 | 301 | **82 425.00** |


CS 60

| **CS 60 - Stripping machine** *supply voltage - 230 VAC 50Hz* | | | | | | | |
|---|---|---|---|---|---|---|---|
| **CS 60** settings are made by large user-friendly dials. A graphic display indicates values entered within seconds, the cross section settings and stripping length are performed. Insulation of cables not fully stripped to prevent fanning of the wire strands.<br>• Mobile use by carrying handle<br>• Fast setting of length and cross section<br>• Large graphic display facilitates adjustment<br>• The automatic clamping force adjustment protects sensitive insulations | | | | | | | |
| **CS 60** | 0.8...6 | 2...20 mm | automatic wire stripper | 221 | 141 | 363 | **78 645.00** |


MC 25

## Stripping and crimping machines *(combined)*

| type | wire sizes mm² | crimping length (mm) | description | dimensions (mm) H | W | D | price |
|---|---|---|---|---|---|---|---|
| **Electric stripping and crimping machine** *supply voltage - 230 VAC 50Hz*<br>Wire stripping and crimping done in one operation using belt strip ferrules in type K box dispensers Controlled by a sophisticated cam mechanism achieving a stable working process.<br>• Cycle time: 1.5s<br>• Easy to use, silent operation<br>• Cross-sectional change in a few simple steps. | | | | | | | |
| **MC 25** | 0.25...2.5 | 8 mm | automatic stripper/crimper | 270 | 165 | 320 | **163 800.00** |


HT45-E


KITHT51-1


RHC131


HT-TC026


TC050


PO7000

## Hydraulic crimping / cutting tools

| type | for terminals | conductor ($mm^2$) | crimping force (kN) | description | price |
|---|---|---|---|---|---|
| **HT and TC series - Hydraulic tools** | | | | *lightweight and compact* | |
| • Spring loaded handles, dies can be advanced using only one hand<br>• Pressure release system can easily be operated at any stage of compression<br>• For ease of operation and comfort of operator, tool head can be fully rotated 180°<br>• Supplied with sturdy plastic carrying case for tool with compartments. (*see dies sets)* | | | | | |
| **HT45 compact hydraulic crimping tool** | | | | | |
| **HT45-E** | die dependant | max. 150 | 50 kN | hydraulic crimping tool | **18 795.00** |
| **HT51 -2 speed hydraulic crimping tool** | | | | | |
| • Supplied with sturdy plastic carrying case for tool and *(included)* die sets: ME 5-50, 7-50, 10-50, 14-50, 19-50, 24-50, 30-50, 37-50 | | | | | |
| **KITHT51-1** | die dependant | max. 240 | 50 kN | hydraulic crimping tool | **30 765.00** |
| **HT131 hydraulic crimping tool for semi-circular slotted dies** | | | | | |
| • Supplied with sturdy plastic carrying case for tool and *(included)* die sets: ME 10-C, 14-C, 19-C, 24-C, 30-C, 37-C, 48-C | | | | | |
| **KITHT131-C-1** | die dependant | max. 400 | 130 kN | hydraulic crimping tool | **43 050.00** |
| **RH series - Hydraulic presshead** | | | | | |
| Hydraulic presshead complete with quick automatic coupler for connection to a hydraulic pump with a working pressure of 700 bar max. | | | | | |
| **RHC131** | die dependant | max. 400 | 130 kN | hydraulic presshead only | **16 800.00** |

## TC series - Hydraulic cutting tool

Hand operated hydraulic tool specifically designed to cut Copper, Aluminium-Steel cables. Double speed action: a fast advancing speed for rapid approach of blades to cable and a slower more powerful speed for cutting.

- **HT-TC...** can cut copper, aldrey, aluminium, aluminium-steel cables and steel ropes and steel rods

| type | max. cutting diameter Ø | length | width | description | price |
|---|---|---|---|---|---|
| **TC026 compact hydraulic cutting tool** | | | | *supplied with canvas carrying bag for tool* | |
| **HT-TC026** | Ø 25 mm | 382 mm | 129 mm | hydraulic cutting tool | **30 765.00** |
| **TC series -2 speed hydraulic cutting tool** | | | | *supplied with plastic carrying case for tool* | |
| **HT-TC041N** | Ø 45 mm | 550 mm | 144 mm | hydraulic cutting tool | **41 370.00** |
| **TC series hydraulic cutting head** | | | | *supplied with canvas carrying bag for tool* | |
| Hydraulic cutting head complete with quick automatic coupler for connection to a hydraulic pump with a working pressure of 700 bar max. | | | | | |
| **TC050** | Ø 50 mm | 325 mm | 112 mm | hydraulic cutting head | **27 825.00** |
| *Larger sizes available on request.* | | | | | |

## Hydraulic foot operated pump

- Pressure release can easily be operated at any stage of compression
- Supplied with 3 meter long high pressure flexible hose with self-lock quick coupler

**PO - Foot operated double speed pump** *develops a maximum pressure of 700 bar*

- Supplied with solid shaped stand providing stability during operation
- Supplied with sturdy plastic carrying case for tool

| | | | | | |
|---|---|---|---|---|---|
| **PO7000** | 700 BAR | 680 mm | 200 mm | hydraulic foot operated pump | **38 220.00** |

## Manual crimping tool

- Heat treated steel crimp jaws
- Handles of anti-slip plastic with hilt

**TN series** *(indent crimp)* *adjustable for different conductor sizes*

- Easily adjustable die positioning by knurled screw and reference vernier scale

| | | | | | |
|---|---|---|---|---|---|
| **TN70SE** | uninsulated | 6 to 70 | indent | adjustable manual crimping tool | **5 869.50** |
| **TN120SE** | uninsulated | 10 to 120 | indent | adjustable manual crimping tool | **6 888.00** |



Above ZAR prices do not include VAT. E&OE



KIT-BX500ND-1

## Cordless hydraulic crimping tools *(18.0 V Li-Ion high power batteries)*

- Pressure release button
- Extremely quiet, minimal vibration
- One hand operation, improved balance for better handling
- Tool head rotates 180° for ease of operation in confined spaces
- Durable moulded body with high resistance to wear and damage in all operating conditions

| type | for terminals | conductor ($mm^2$) | crimping force (kN) | description | price |
|---|---|---|---|---|---|
| **BX500 series - "Inline" type crimping tool** | | | | | |
| KIT-BX500ND-1 is a one-handed, inline cordless crimping tool designed for crimping electrical connectors on conductor cross sections up to 300 $mm^2$. Compatible with all CEMBRE 50kN die sets, it offers balanced control.<br>• Wide opening head, ideal for derivations from running conductors<br>• One Li-Ion 18.0V 2.0Ah batteries and charger included<br>• **Supplied with:**<br>A durable plastic carry case, 1 battery, charger, and die set for Cu lugs from 25 to 185 sqmm (ME5-50 to ME37-50) | | | | | |
| **KIT-BX500ND-1** | die dependant | max. 300 | 60 kN | battery operated crimping tool | **44 730.00** |
| **TC320 series - "inline" type cutting tool** | | | | | |
| B-TC320NDF is a cordless tool designed for cutting copper, aluminium, and telecommunication cables up to 32 mm. It features high-strength steel blades and a 180° rotating head for versatile operation, suitable for temperatures from -15 to +50°C.<br>• LED light illuminating working area<br>• Li-Ion 18.0V 2.0Ah high power battery<br>• Battery is equipped with led indicators that indicate the remaining battery life<br>• Specifically designed to cut Copper, Aluminium and Telecommunications cables<br>**Supplied with:**<br>• Plastic carrying case for tool, 2 x battery, charger and *(included)* die sets: | | | | | |
| **B-TC320NDF** | die dependant | max Ø 32 mm | | battery operated cutting tool | **54 075.00** |
| **FL750 series - "Pistol" portable punching tool** | | | | | |
| KIT-B-FL750-1 is a versatile cordless punching tool powered by an 18.0V lithium-ion battery. It features a 360° rotating and 180° pivoting head for easy access in tight spaces and can punch materials up to 3.5 mm thick.<br>**Supplied with:**<br>• Plastic carrying case for tool, battery, charger<br>• Kit includes round punch - KIT-RD 18.8, 20.5, 22.6, 28.5SS | | | | | |
| **KIT-B-FL750-1** | die dependant | max 140 mm | | battery operated punching tool | **59 640.00** |
| **B1300 series - Portable crimping tool** | | | | | |
| • LED light illuminating working area<br>• Li-Ion 18.0V 5.2Ah high power battery<br>• Crimping cycle data stored *(up to 200.000 events)* in memory for later transfer to PC<br>• Digital display indicating: crimp pressure, available battery life, service/maintenance information<br>• **Supplied with:**<br>Plastic carrying case for tool, 2 x battery, charger and *(included)* die sets: ME 10-C, 14-C, 19-C, 24-C, 30-C, 37-C, 48-C | | | | | |
| **KITB1300-C-1** | die dependant | max. 400 | 132 kN | battery operated crimping tool | **95 760.00** |
| *See dies sets* | | | | | |


KIT-B-FL750-1


B-TC320NDF

## MARKINGENIUS MG4 *(thermal transfer printer)* *(H) 236 x (W) 240 x (D) 409 mm / 6.1 kg*

Exclusively designed for the identification of conductors and electrical components.

**Plug & Play Thermal Transfer Printer:** For tags, markers, legends, and labels on cables, pipes, tubes, terminal blocks, panels, components, and equipment

**Large on-Board Touch Screen:** Allows easy management of print projects. The MG4's reliability and robustness make it ideal for intensive use in various applications

**Versatile Power Options:** MG4 operates on mains power or optional CEMBRE rechargeable batteries. Use it in the office, production, or on-site. The interchangeable battery, compatible with all CEMBRE tools, ensures full portability

**Efficient Ribbon Save System**: Each monochrome ribbon prints over 300,000 MG-TPMF 4x10 mm labels. Pigment dries instantly, making printed sheets immediately ready for use


MG4

| type | description | price |
|---|---|---|
| **MG4** | MARKINGENIUS MG4 thermal transfer printer for marking tags and legends | **71 400.00** |


ME1


ME7


MA1-50


MA19-50


MA7-C


MN2RF-50


MN10RF-50

## Die sets for hydraulic and battery operated crimping tools

| type | for terminals | conductor ($mm^2$) | crimping type | for crimping tool | price |
|---|---|---|---|---|---|
| **Die sets for uninsulated terminals** | | | | | |
| **ME1** | cable lugs | 4...6 | hexagonal | HT45-E | **966.00** |
| **ME2** | cable lugs | 10 | hexagonal | HT45-E | **759.15** |
| **ME3** | cable lugs | 16 | hexagonal | HT45-E | **759.15** |
| **ME5** | cable lugs | 25 | hexagonal | HT45-E | **759.15** |
| **ME7** | cable lugs | 35 | hexagonal | HT45-E | **759.15** |
| **ME10** | cable lugs | 50 | hexagonal | HT45-E | **759.15** |
| **ME14** | cable lugs | 70 | hexagonal | HT45-E | **759.15** |
| **ME19** | cable lugs | 95 | hexagonal | HT45-E | **759.15** |
| **ME24** | cable lugs | 120 | hexagonal | HT45-E | **759.15** |
| **ME30** | cable lugs | 150 | hexagonal | HT45-E | **759.15** |
| **ME1-50** | cable lugs | 4...6 | hexagonal | HT51/BX500ND | **1 060.50** |
| **ME2-50** | cable lugs | 10 | hexagonal | HT51/BX500ND | **759.15** |
| **ME3-50** | cable lugs | 16 | hexagonal | HT51/BX500ND | **759.15** |
| **ME5-50** | cable lugs | 25 | hexagonal | HT51/BX500ND | **759.15** |
| **ME7-50** | cable lugs | 35 | hexagonal | HT51/BX500ND | **759.15** |
| **ME10-50** | cable lugs | 50 | hexagonal | HT51/BX500ND | **759.15** |
| **ME14-50** | cable lugs | 70 | hexagonal | HT51/BX500ND | **759.15** |
| **ME19-50** | cable lugs | 95 | hexagonal | HT51/BX500ND | **759.15** |
| **ME24L-50** | cable lugs | 120 | hexagonal | BX500ND | **914.55** |
| **ME30L-50** | cable lugs | 150 | hexagonal | BX500ND | **914.55** |
| **ME24-50** | cable lugs | 120 | hexagonal | HT51/BX500ND | **914.55** |
| **ME30-50** | cable lugs | 150 | hexagonal | HT51/BX500ND | **914.55** |
| **ME37-50** | cable lugs | 185 | hexagonal | HT51/BX500ND | **914.55** |
| **ME48-50** | cable lugs | 240 | hexagonal | HT51/BX500ND | **2 856.00** |
| **MA1-50** | nest | 4...6 | indent | HT51/BX500ND | **689.85** |
| **MA2.3-50** | nest | 10 | indent | HT51/BX500ND | **689.85** |
| **MA5-50** | nest | 25 | indent | HT51/BX500ND | **689.85** |
| **PA5-50** | indentor | 4...25 | indent | HT51/BX500ND | **2 058.00** |
| **MA7-50** | nest | 35 | indent | HT51/BX500ND | **672.00** |
| **MA10-50** | nest | 50 | indent | HT51/BX500ND | **672.00** |
| **PA10-50** | indentor | 35...50 | indent | HT51/BX500ND | **2 058.00** |
| **MA14-50** | nest | 70 | indent | HT51/BX500ND | **717.15** |
| **MA19-50** | nest | 95 | indent | HT51/BX500ND | **717.15** |
| **PA19-50** | indentor | 70...95 | indent | HT51/BX500ND | **2 058.00** |
| **MA24-50** | nest | 120 | indent | HT51/BX500ND | **672.00** |
| **PA24-50** | indentor | 120 | indent | HT51/BX500ND | **2 058.00** |
| **ME7-C** | cable lugs | 35 | hexagonal | HT/RHC131/B1300 | **1 827.00** |
| **ME10-C** | cable lugs | 50 | hexagonal | HT/RHC131/B1300 | **1 827.00** |
| **ME14-C** | cable lugs | 70 | hexagonal | HT/RHC131/B1300 | **1 827.00** |
| **ME19-C** | cable lugs | 95 | hexagonal | HT/RHC131/B1300 | **1 827.00** |
| **ME24-C** | cable lugs | 120 | hexagonal | HT/RHC131/B1300 | **1 827.00** |
| **ME30-C** | cable lugs | 150 | hexagonal | HT/RHC131/B1300 | **1 827.00** |
| **ME37-C** | cable lugs | 185 | hexagonal | HT/RHC131/B1300 | **1 827.00** |
| **ME48-C** | cable lugs | 240 | hexagonal | HT/RHC131/B1300 | **1 827.00** |
| **ME60-C** | cable lugs | 300 | hexagonal | HT/RHC131/B1300 | **1 827.00** |
| **ME80-C** | cable lugs | 400 | hexagonal | HT/RHC131/B1300 | **1 827.00** |
| **MA7-C** | nest | 35 | indent | HT/RHC131/B1300 | **949.20** |
| **MA10-C** | nest | 50 | indent | HT/RHC131/B1300 | **949.20** |
| **PA10-C** | indentor | 10...50 | indent | HT/RHC131/B1300 | **2 100.00** |
| **MA14-C** | nest | 70 | indent | HT/RHC131/B1300 | **949.20** |
| **MA19-C** | nest | 95 | indent | HT/RHC131/B1300 | **949.20** |
| **MA24-C** | nest | 120 | indent | HT/RHC131/B1300 | **949.20** |
| **PA24-C** | indentor | 70...120 | indent | HT/RHC131/B1300 | **2 100.00** |
| **MA30-C** | nest | 150 | indent | HT/RHC131/B1300 | **949.20** |
| **MA37-C** | nest | 185 | indent | HT/RHC131/B1300 | **949.20** |
| **MA48-C** | nest | 240 | indent | HT/RHC131/B1300 | **949.20** |
| **PA48-C** | indentor | 150...240 | indent | HT/RHC131/B1300 | **2 100.00** |
| **MA60-C** | nest | 300 | indent | HT/RHC131/B1300 | **1 638.00** |
| **PA60-C** | indentor | 300 | indent | HT/RHC131/B1300 | **2 100.00** |
| **Die sets for insulated terminals** | | | | | |
| **MN2RF-50** | cable lugs | 10 | radial | HT51/BX500ND | **1 034.25** |
| **MN3RF-50** | cable lugs | 16 | radial | HT51/BX500ND | **1 034.25** |
| **MN5RF-50** | cable lugs | 25 | radial | HT51/BX500ND | **1 034.25** |
| **MN7RF-50** | cable lugs | 35 | radial | HT51/BX500ND | **1 034.25** |
| **MN10RF-50** | cable lugs | 50 | radial | HT51/BX500ND | **1 034.25** |



Above ZAR prices do not include VAT. E&OE



008328

## DIN rail cutter (professional)

**DIN rail cutter** *(for steel mounting rail only)*

DIN rail is often cut by saw or angle grinder creating dust, noise and a considerable risk of injury. The **RC200** is a high quality, professional DIN rail cutter designed for high output, offering "burr-free" precision cutting and trimming of standard DIN rails.

- Increased work safety and quiet operation
- Quick and professional burr-free processing
- Metric scale plate and table clamp *(optional)*
- Incorporates two cut profiles *(7.5 x 35 and 15 x 35 mm)* DIN rails.
- Precision "burr-free" cut and trim of DIN rail to length without waste

| type | rail cutter | for rail depth (mm) | description | | price |
|---|---|---|---|---|---|
| **DIN rail cutter** *(professional)* | | | | | |
| **RC200 DIN rail cutter** | | | *for DIN 35 rail 7.5 and 15 mm deep* | | |
| **008328** | cutter | 7.5 + 15 | DIN rail cutter *(2 profiles)* for 7.5/15 mm high x 35 mm rail | | **16 380.00** |
| **Accessories for above RC200 DIN rail cutter** | | | | | |
| **009465** | scale | | metric scale plate and length stop for above DIN rail cutter | RC200 | **2 856.00** |
| **009102** | clamp | | table clamp for above DIN rail cutter | RC200 | **1 197.00** |

Made in Italy MICOEL



VTC125

## Wiring duct cutter *(professional)*

| type | duct cutter | max. cut width | max. length stop | description | price |
|---|---|---|---|---|---|
| **Bench mounting wiring duct** *(slotted trunking)* **cutter** | | | | | |

VTC125 provides fast, precise and burr-free cutting of wiring ducts, without leaving chips behind. It enables low-noise and emission-free working. The scale with length stop ensures the wiring ducts are cut to length quickly and with millimetre precision

For fast, accurate cutting of wiring ducts to lengths, without burrs and with very little force

- Blade guard guarantees secure operation
- Burr-free cut edges - No noise, no chips or dust
- Quick and easy cutting - ducts cut precisely to the millimetre
- Supplied with a 1 meter graduated dimension rule with length stop
- Hardened *(replaceable)* cutting blade - max. cutting width 125 mm

| | | | | | |
|---|---|---|---|---|---|
| **VTC125** | cutter | 125 mm | 1000 mm | precision slotted wiring duct cutter | **19 740.00** |

**L-**Termination and wiring

EZI CANAL electrical cable ducting



TSL040040N

**Ezi Canal** slotted cable ducting features an improved cover design for ease of opening and closing, permitting easy access to wiring in control panels.

- Simple open/close cover design for easy access to wiring in control panel
- Double score-line permits finger/slot or complete sidewall removal
- Coining process for burr-free edges to protect hands and wiring from abrasion

Standard colour: Grey - others available on request *(volume dependant)*
Standard length: Supplied in two meter lengths, complete with covers

| type | dimensions (mm) (W) | (H) | colour | description | slot A (mm) | finger B (mm) | carton qty (L - 2 m) | price each |
|---|---|---|---|---|---|---|---|---|
| **Narrow slotted trunking** | | | Finger: 6 mm / Slot - 4 mm | | *(10 mm pitch)* | | | |
| • Narrow slot/finger design to closely fit spacing of high density terminal blocks and I/O modules | | | | | | | | |
| **KKC1518** | 15 | 18 | grey | PVC slotted cable trunking | 5 | 7.5 | 112 | |
| **TSL025025N** | 25 | 25 | grey | PVC slotted cable trunking | 4 | 6 | 48 | |
| **TSL025040N** | 25 | 40 | grey | PVC slotted cable trunking | 4 | 6 | 40 | |
| **TSL040040N** | 40 | 40 | grey | PVC slotted cable trunking | 4 | 6 | 24 | |
| **TSL060040N** | 60 | 40 | grey | PVC slotted cable trunking | 4 | 6 | 24 | |
| **TSL080040N** | 80 | 40 | grey | PVC slotted cable trunking | 4 | 6 | 18 | |

*see **Cat L** for pricing.*






P01191773

**Voltage Absence Tester (VAT)** CAT IV 1000 V

Installations connected to an electricity distribution network, require measurements to be performed with power off to avoid electrical hazards (EN 50110-1 standard, DIN VDE 0682-401, NF C 18-510, etc.)
Securing the installation to ensure that it is non-current-carrying, requires the use of a Voltage Absence Tester.

- **Comprehensive integrated autotest** - indication of type of fault also displays a text message for information.
- **IP65 protection** for indoor and outdoor use, significantly higher than the IP54 rating required by the standard.
- **Audible and visual continuity** indication up to 100 Ω, in compliance with standards recommendations.
- **Removable test probes** to meet specific requirements in certain applications *(various models available)*

**AC and DC voltage testing** Voltage detection takes priority, is automatic and indicated by distinct visual *(bargraph)* and intermittent beep. Stray voltages can be detected by pressing two buttons simultaneously to switch to low impedance mode.

**2-wire phase rotation with microprocessor** Simple and quick, the 2-wire phase rotation function with microprocessor is useful in all circumstances, including installations powered by an electrical generator set or behind an isolating transformer.

**Continuity and resistance testing** Checks that conductors are correctly connected. Continuity (R < 100 Ω) is indicated by a continuous audio signal whilst the resistance value is displayed directly.

**Residual Current Device (RCD) trip test up to 30 mA** By simultaneously pressing the double command, you can cause a fault current sufficient to trip the RCD to flow through a low-impedance load.

**Ergonomics specially designed for use in the field** Digital display, removable test probes ensure excellent handling. A built-in torch illuminates the point of measurement.

| type | model | description | price |
|---|---|---|---|
| **Voltage Absence Tester** | | **IP65** *enclosure* *228 x 60 x 39 mm* | |

| | |
|---|---|
| Display: | LEDs + backlit digital display |
| Voltage: | 12 VAC - 1.000 VAC / 12 VDC - 1.400 VDC |
| Impedance: | > 500 kΩ / Polarity indication |
| Android application: | Not applicable |
| RCD tripping: | By low-impedance load switching *(approx.30 mA at 230 V)* |
| Continuity & Resistance: | Buzzer trigger threshold 100 Ω typical *(150 Ω max.)* |
| Extended continuity test: | 0.5 Ω to 2.999 kΩ |
| Phase rotation: | 2-wire type with microprocessor - Ph/Ph voltage 50 V - 1 000 VAC |
| Buzzer: | Intermittent for Voltage Detection - Continuous for continuity |
| Standards and elec safety: | IEC 61243-3:2009, EN 61243-3:2010, IEC 61010 1.000 V CAT I |

***Delivered with:*** *manual, set removable test probes, 2x 1.5 V LR03/AAA batteries, Velcro strap.*

| | | | |
|---|---|---|---|
| **P01191773** | C.A 773 | CAT IV 1.000 V Voltage Absence Tester (VAT) | **4 777.50** |



P01196773

**Digital multimeter** (CAT IV 600 V) **IP54**

General-purpose professional measuring instrument with TRMS measurements *(sinusoidal, distorted and DC signals)* measurement accuracy, rugged design, reliability of an on-site instrument.

- Double backlit display
- Min/Max memorization
- Large 6000-count display
- Temperature and capacitance measurements

| | |
|---|---|
| Display: | 2 x 6000 counts, backlit |
| Bargraph: | *(63 elements)* Bi-mode *(full scale / central zero)* |
| Acquisition: | TRMS AC / DC |
| Measurement rate: | 5 measurements per second |
| Automatic / manual ranges: | Yes / Yes |
| AC/DC voltage: | 600 mV / 6 / 60 / 600 / 1.000 V - accuracy 0.2% - 40Hz to 3kHz |
| LowZ AC voltage: | Low-impedance setting with Low-pass Filter |
| AC/DC current: | 6.000 A / 10.00 A (20 A/30s) |
| Resistance measurement: | 600 / 6.000 Ω / 60 / 600 kΩ / 6 / 60 MΩ, Audible continuity, Diode test |
| Frequency: | 600 Hz / 6 kHz / 50 kHz |
| Capacitance: | 8 cal.: 6.000 nF to 60.00 mF |
| Temperature: | -59.6 to +1.200°C / -4 to +2.192°F |
| Hold facility: | Yes Min / MAX (100 ms) |
| Min / MAX (100 ms): | Yes |
| Automatic power-off: | Yes *(can be deactivated)* |
| Safety: | IEC 61010-1, IEC 61010-2-033 CAT IV 600 V / CAT III 1000V |
| Power supply: | 1x 9 V 6LR61 battery |
| Dimensions / weight: | 90 x 190 x 45 / 400 g |

*Delivered with:* *Set leads, set test probes, 1x 9V 6LR61 battery, K thermocouple temp sensor*

| | | | |
|---|---|---|---|
| **P01196773** | ***C.A5273*** | digital multimeter hand held for all applications | **6 573.00** |

**Accessories** *for above C.A5273 multimeter*

| | | |
|---|---|---|
| **P01298076** | carrying bag with MultiFix multi-position mounting accessory | **1 092.00** |



P01298076


Above ZAR prices do not include VAT. E&OE

1000V CAT IV | IP 54





P01120925

## Digital Power and harmonics clamp multimeter

Scan to watch video

General-purpose professional clamp-on measuring instrument with True RMS measurement accuracy, reliable and particularly resistant to falls.

| | | |
|---|---|---|
| Clamping diameter: | | **Ø34 mm** |
| Display: | | Large 6000-count, backlit LCD screen |
| Amp (RMS) | AC | 600 A |
| | DC, AC+DC | 900 A |
| Volt AC (RMS) | AC | 1000 V - 1% |
| Volt DC | DC, AC+DC | 1400 V - 1% |
| Automatic AC/DC detection: | | Yes (V and A) |
| Frequency for V/I: | | Yes / Yes |
| Resistance measurement: | | 60 kΩ |
| Audible continuity: | | Yes *(< 1 Ω…599Ω)* |
| Diode test: | | *(semi-conductor junction)* |
| Temperature (type K): | | -60.0 to +1000 °C |
| Power: | W, var, VA, PF | Yes - single-phase and total three-phase |
| Harmonic analysis: | | THDf / THDr |
| Phase rotation: | | *(2-wire method)* |
| Motor-inrush function: | | Yes |
| True-inrush function" | | Yes |
| "Min / Max" / Peak function: | | Yes / Yes |
| Auto Power off / "Hold" function: | | Yes |
| Low battery indication: | | Yes |
| Electrical safety as per: | | IEC 61010 CAT IV 600V, CAT III 1000 V |
| Dimensions / weight: | | 78 x 222 x 42 / 340g |

***Delivered with:*** *1 set of PVC leads (black/red) with insulated elbowed male banana plug / insulated straight male banana plug, 2 test probes / insulated female plug (black/red) 1 safety crocodile clip (black) 1 x 9 V 6LR61 battery, 1 Multifix shoulder bag, mini-CD containing the User Manual.*

| type | model | description | price |
|---|---|---|---|
| **P01120925** | ***F205*** | digital clamp multimeter/tong tester for all applications | **8 473.50** |

## Power and harmonics clamp multimeter IP54



P01120947

Current 1000 A, Voltage 1000 V, power, harmonics and recorder

| | | |
|---|---|---|
| Clamping diameter: | | **Ø48 mm** |
| Display: | | Large triple 10 000 count, backlit screen |
| Amp (RMS) | AC | 150mA to 1000 A - 1% |
| | DC, AC+DC | 150mA to 1500 A - 1% |
| Volt AC (RMS) | AC | 100 mV to 1000 V - 1% |
| Volt DC | DC, AC+DC | 100 mV to 1000 V - 1% |
| Automatic AC/DC detection: | | Yes (V and A) |
| Resistance measurement: | | 100 kΩ *(continuity buzzer)* |
| Audible continuity: | | Yes (< 40 Ω) |
| Frequency: | | 15Hz to 20kHz |
| Power: | W, VA, var | Yes - single-phase and total three-phase |
| PF and cos φ (DPF): | | Yes |
| Total Harmonic Distortion: | | THDf % / THDr % |
| Harmonic decomposition: | | Yes - up to 25th order |
| Crest factor (CF) / Motor InRush: | | Yes |
| Current surge *(True InRush):* | | Yes |
| "Min Max" / Peak function: | | Yes / Yes |
| Auto power off / "Hold" function: | | Yes |
| REC storage function: | | Yes - *(up to 3000 measurements)* |
| Data logging: | | Yes |
| PC / Bluetooth interface: | | Yes |
| Electrical safety as per: | | IEC 61010 CAT IV 1000V, CAT III 1000 V |

***Delivered with:*** *Multifix shoulder bag, Power Analyser Transfer (PAT) software, 2 voltage leads (red/black), 2 test probes (red/black), 2 crocodile clips (red/black), 4x 1.5 V AA alkaline batteries, operating manual.*

| | | | |
|---|---|---|---|
| **P01120947** | ***F407*** | digital clamp multimeter/tong tester for all applications | **13 125.00** |

### Accessories for above F205\F407 multimeters

| | | | |
|---|---|---|---|
| **P01102100Z** | mounting | hands free mounting clip | **477.75** |

1000V CAT IV



P01157151

## Chauvin Arnoux - PEL103 Power & Energy Loggers IP54 *casing*

*Portable, advanced yet simple to use Power and Energy logger, designed for energy audits (ISO 50001 standard) or one-off measurements of the Power and Energy values in low-voltage electrical networks (1000 V CAT III)*

**PEL100** series Power and Energy loggers provide a complete solution to measuring and identifying energy consumption in any industry, they can be used handsfree, remotely without interruption to the mains power.

The logger tracks even the slightest consumption in an electrical network, providing all Power and Energy measurement recording on the internal 2GB SD card, while simultaneously permitting real-time monitoring on its backlit 4 line LCD display.

Recordings are time/date stamped for ease of comparing measured gains achieved before and after installation modification. Easily transfer recorded data to a PC via the free PEL data transfer software and SD card with USB adaptor *(included).*

Designed to fit inside most electrical cabinets thanks to its magnetic base or hook for easy mounting.

**Key Features of the PEL103 include:**

Measurements and display of:

- RMS frequency, voltage and current measurements
- Voltage measurement ranges 10 to 1000V AC/DC +/- 0.2 % + 0.5 V
- Current measurement ranges 5 mA to 10 kA AC / 50 mA to 1.4 kA DC ±0.5 %
- VA, W and var power values
- Power Factor (PF), cos φ, tan ϕ and crest factor
- Total Harmonic Distortion (THD) for currents and voltages
- DC, 50 Hz, 60 Hz and 400 Hz measurements
- Phase rotation indication and MIN/MAX indication of all parameters
- VAh, Wh *(source, load)* and varh *(4 quadrant)* energy values, total energy
- Harmonics: up to the 50th order for currents and voltages *(an essential feature to help identify problems)*

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- **Network types include:** Three phase *(with or without neutral)*, split phase, single phase
- **Automatic recognition:** Of the type of sensor connected
- **Communication / Data transfer:** USB, Ethernet and Bluetooth / PEL transfer PC software *(included)*
- **Records:** Measurements and calculatiown results on SD card *(included)*
- **Acquisition rate:** 128s/period



P01157151 + P01102204

**PEL 103 Power and Energy logger (KIT)** *(created as a complete kit with following accessories)*

| | |
|---|---|
| **1** x PEL103 Power and Energy Logger: | Analyser with backlit LCD screen |
| **3** x MA193 (450 mm) flexible current clamps: | MINIFLEX MA193 flexible current sensors - 200mA to 10 kA |
| **4** x Measurement leads and crocodile clips: | Robust high quality test leads for frequent use/built to last |
| **1** x Set of coloured rings and Inserts: | For easy identification of connections and leads |
| **1** x 2GB SD card *(internal):* | SD card to USB adaptor |

*SD card to USB adapter, USB cable, mains cable, MultiFIX mounting system, operating manual (on CD)*
*PEL transfer PC software enabling data to be transferred to PC, all in a convenient canvas carrying bag.*

| type | model | description | dimensions (mm) (H) | (W) | (D) | price (ea) |
|---|---|---|---|---|---|---|
| **PEL 103 Power and Energy logger (KIT)** | | | | | | |
| **P01157151** | PEL103 **(KIT)** | portable power and energy logger/analyser | 256 | 125 | 37 | **63 735.00** |
| **Accessories for PEL103 Power and Energy logger** | | | | | | |
| **P01120434B** | MN 93A | compact tong clamps for PEL102/3 | Ø20 mm | 0.005 - 100A | | **6 573.00** |
| **P01120323B** | C193 | compact tong clamps for PEL102/3 | Ø52 mm | 1 - 1000A | | **9 429.00** |
| **P01120580** | MA193-250 | Ampflex 250 mm flexible current sensor | Ø70 mm | 200mA - 10kA | | **5 817.00** |
| **P01120526B*** | A193-450 | Ampflex 450 mm flexible current sensor | Ø140 mm | 100mA - 10kA | | **5 817.00** |
| **P01101959** | CA833X-F | for reading from 5A secondary CT's | | 5A adaptor | | **31 395.00** |
| **P01102204** | self-power | mains adaptor for self powering PEL from supply | | mains adaptor | | **6 625.50** |
| **P01295174*** | mains lead | mains power cable - (2P EUR) | | | | **334.95** |
| **P01295476*** | test leads | spare measurement leads (3m) with crocodile clips | | KIT *(black)* | | **3 108.00** |
| **P01102080*** | set | ID rings and inserts *(for ends of leads and sensors)* | | diff. colours | | **910.35** |
| **P01298078*** | bag no.23 | canvas carrying bag for PEL analyser and access | | | | **1 806.00** |

* *Items supplied with standard **PEL KIT**.*



P01120580

**Data processing software** *power quality & installation supervision*

Automatically recognizes the instrument connected to the PC and opens the corresponding menu, providing direct access to the configuration and saved data. Includes many predefined report templates for quick generation in compliance with applicable standards.
Users can create personalised models to fit their requirements and add comments directly.

- Configuration of all the functions of instruments connected to a PC or via Bluetooth
- Recovery of the recorded measurement data and backup of measurement files
- Opening of saved files / processing and creation of reports (EN50160)
- Export into an Excel spreadsheet or PDF format / Database management

| | | | |
|---|---|---|---|
| **P01102095** | DataView | powerful configuration/transfer/measurement data processing software | **14 385.00** |



Above ZAR prices do not include VAT. E&OE

1000V CAT IV

IP 54

## DIACAM 2 series - Thermal Camera

**DIACAM 2** is a high performance thermal camera making it simple to perform thermal inspections for energy audits, ensuring trouble-free industrial, electrical or mechanical maintenance.

The wide 2.8-inch screen with auto brightness adjustment provides comfortable reading with a field of view of 38° x 28° and the camera is focus-free. A built-in sliding cover protects the highly sensitive lens.
Contextual help guides users step-by-step, limiting the risk of errors. Particularly rugged, with IP54 ingress protection, the camera can withstand falls from 2 metres.

**Industrial maintenance** For electrical maintenance, can detect electrical equipment malfunctions, particularly abnormal overheating before a fault occurs, avoiding the considerable cost of halting production to carrying out repairs.

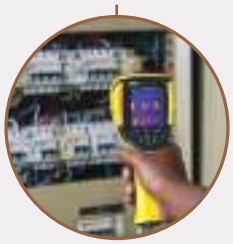
**Report creation** The supplied CAmReport® software, used to create automatic reports can be exported in Word or PDF format, simplifying printing and archiving.

### Features:

- Flexible use thanks to its Laser pointer and focus-free capability with 38° x 28° field of view
- Exceptional 9-hour continuous use
- Recovery of data from other measuring instruments *(current, humidity, dew point, etc.)*
- Recording and storage in memory of the configurations for each application
- Allows you to record voice comments directly on the image
- Comfortable grip, perfect balance with direct access to all functions with just one hand
- Wide 2.8-inch screen with automatic or manual brightness control
- Slide-down protective lens cover
- Quick start-up



P01651904



### Detector:

| | |
|---|---|
| Type: | UFPA microbolometer, 8 ~14 µm |
| Frequency: | 9 Hz |
| Sensitivity (N.E.T.D): | 80 mK @ 30°C (0.08 °C @ 30 °C) |

Scan to watch video

### Temperature Measurement:

| | |
|---|---|
| Temperature range: | -20 °C to +250 °C |
| Accuracy: | ±2 °C or ±2 % of reading |

### Image Performance:

| | |
|---|---|
| Thermal image: | -20 °C to +250 °C |
| Field of view: | 38° x 28° |
| IFOV *(spatial resolution):* | 4.1 mrad |
| Focus: | Fixed |
| Minimum focal distance: | 30 cm |
| Real image: | Yes *(320 x 240 pixels)* |
| Display mode: | Thermal image, real image with automatic parallax compensation *(merging of both images possible with PC software)* |

### Analytical Functions:

| | |
|---|---|
| Measuring Tools: | Manual cursor + automatic detection + Min Max Avg on adjustable area + temperature profile + isotherm |
| Parameter settings: | Emissivity, environmental temperature, distance, relative humidity |
| Vocal comments: | Yes via Bluetooth *(earphones provided)* |
| Data storage: | On 2 GB micro SD card *(approx. 4.000 images)* replaceable up to 32 GB |
| Image format: | PNG - thermal and real images recorded simultaneously |
| Laser pointer: | Yes |

### Image Display:

| | |
|---|---|
| Settings: | Automatic or manual adjustment of the min max for the palette |
| Freezing of image: | Animated or fixed image |
| Display of image: | Multi-palette |
| Screen: | 2.8 inch |

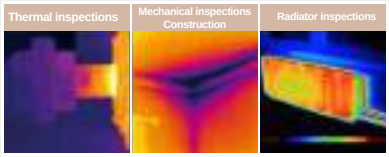
### Power Supply:

| | |
|---|---|
| Type: | NiMH rechargeable batteries with low self-discharge |
| Recharging method: | External charger *(supplied)* |
| Battery life: | 9 hrs *(typical)* / 50% brightness and Bluetooth deactivated |
| Dimensions / weight: | *225 x 125 x 83 / 700 g* |

***Delivered with:*** *C.A 1954 thermal camera in a site-proof case with 4 NiMH batteries and battery charger, micro SD HC card, USB cable, Bluetooth earpiece, specimen measurement report, CAm Report® software on CD-Rom and user's manual.*

**Thermal Camera - DIACAM 2** **IP54**

| type | model | description | price |
|---|---|---|---|
| **P01651904** | ***C.A 1954*** | high performance thermal camera | **43 365.00** |





1000V CAT IV

IP 54

## Electrical installation tester

Designed for checking safety on electrical installations, the **C.A 6133** tester can be used to test new before powering up, installations check existing installations whether in operation or not, and troubleshoot malfunctions. For certification organizations, these portable instruments are simple, effective and, above all, compliant with applicable standards.

The C.A 6133 is designed to be exceptionally simple to use. All measurements and functions are accessible directly on the front panel of these compact, lightweight instruments. Explicit markings on terminals prevent any risk of connection errors.

- Earth measurement by stake and loop methods
- Continuity measurement at 0.2A
- Insulation testing
- RCD testing: Current and trip time
- Automatic test sequences
- Storage of test results
- ANDROID application for report generation
- Power supply by mains-rechargeable batteries, USB socket or vehicle cigarette lighter

The C.A 6133 is equipped with a cable compensation function to ensure reliable measurements and can be used for Voltage, Continuity, Resistance, Insulation and Loop measurements. Current can be measured with *(optional)* MN73A external clamp. The tester also checks the phase rotation and can test type A & AC RCDs in ramp or pulse mode. To save time the C.A6133 can automatically run test sequences and store the results.
For example, it is possible to store a sequence such as AUTO LOOP - RCD - MΩ to speed up work in the field.

### Ergonomics:

- Stand for positioning on a bench or table
- Magnetized casing for magnetic mounting
- 4-point strap for effortless hands-free use
- Backlit screen for easy reading, even in low light conditions
- Terminals with explicit markings *(L, N, PE, H, S, E , +, com connections)* prevent connection errors
- Remote-control probe for starting tests remotely
- A three-pole cable for direct measurements on 2P + E sockets

The "IT Report" dedicated to electrical installation testing enables users to download test results via Bluetooth and to generate and view the measurement report.

| | | |
|---|---|---|
| Voltage measurement: | | 550 VAC / 800 VDC |
| Continuity: | | At 200mA, |
| Resistance: | | From 1 to 99.99 kΩ |
| Insulation: | test voltage | 250V, 500V or 1.000 V (0.01 - 999.9 MΩ / 10 kΩ or 100 kΩ / ± (3% R + 3 cts) |
| Type AC & A RCDs: | | 30mA, 100mA, 300 mA, 500 mA, 650 mA |
| RCD in pulse mode: | | Tripping time |
| RCD in ramp mode (30 mA): | | Tripping current |
| Phase rotation: | | 45 to 550V; 45 to 65 Hz |
| Frequency measurement: | | 30 Hz to 999.9 Hz |
| Insulation: | | Additional 1.000 V test voltage |
| 3P earth (stakes): | | Up to 2.000 Ω |
| Automatic RCD test sequence: | | No trip - pulse - ramp |
| Automatic test sequence: | | Loop - RCD - MΩ |
| Data storage: | | 30 sites with 99 tests each |
| Power supply: | | By rechargeable batteries with built-in charger |
| Bluetooth communication: | | Yes |

Recharging possible via the mains, USB socket or vehicle cigarette lighter socket
Automatic recognition of the optional MN73A external clamp

***Delivered with:*** *Carrying bag containing: 1 neck strap, 1 three-pole EURO mains cable, 3 safety cables with crocodile clips, 1 test probe, USB 2A power supply + USB cable, 6 Ni MH rechargeable batteries, test report with measurement report*



P01146013

| type | model | description | price |
|---|---|---|---|
| **P01146013** | ***C.A 6133*** | electrical installation tester for all applications | **18 480.00** |

### Accessories for above C.A 6133 Installation tester

| | | | |
|---|---|---|---|
| **P01120439** | MN73A | current clamp for above electrical installation tester | **8 998.50** |
| **P01102157** | | remote-control probe for electrical installation tester | **1 396.50** |



Above ZAR prices do not include VAT. E&OE

Take Your **Automation Skills** to the Next Level

**Delta training kit** *(Practical tools for industrial automation training and simulation)*

The Delta PLC starter kit and EMPower rig offers the ultimate training solutions for advancing your skills in industrial automation.

Designed for both professionals and students, these kits provide a comprehensive, real-world experience that bridges the gap between theory and application.

Whether you're just starting or looking to deepen your expertise, the Delta PLC starter kit and EMPower rig ensure you are fully equipped to tackle the challenges of modern industrial automation.

**Register now and start your journey towards mastering industrial automation.**

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**Sign up for our comprehensive training program today!**

## Delta PLC starter kit offers:

- **Simplified entry into automation:** Whether you're a beginner or an expert, this kit simplifies your entry into Delta PLCs and HMIs, providing the tools needed to build a solid foundation in automation technology.
- **Hands-on experience:** Work with real hardware to gain the practical skills necessary for success in manufacturing, process control, building automation, material handling, and energy management.

**PLC starter kits** *training kits for simplified entry into PLC and HMI applications*

PLC starter kits are ideal for experts as well as beginners, simplifies entry into the world of Delta PLCs and HMIs, familiarising users with the programming environment.

| type | description | price |
|---|---|---|
| **UT-14SS2-A** | starter kit for learning programming of PLC /HMI | **6 562.50** |
| **UT-12SE-A1** | as above, but with hardware for Ethernet communication | **10 815.00** |
| **UT-AS332-C** | starter kit for learning programming of PLC | **7 990.50** |



PLC starter kit

## "All-in-one" training rig offers:

- **Realistic training environment:** This desktop unit integrates key components such as an AS218 PLC, DOP-107 HMI, and ME300 VFD, along with other essential automation elements, into a single, cohesive training system that simulates real-world automation scenarios.
- **Comprehensive learning:** Design and program control systems, visualise data, and execute automation tasks just like in actual industrial applications.
- **Interconnected systems:** Expand your learning by interlinking up to two additional rigs, simulating complex multi-system environments.

**EMPOWER rig** *desktop "all-in-one" automation kit*

The EMPower rig is the latest all in one automation training kit. This desktop type unit consists of an AS218 PLC, DOP-107 HMI, and ME300 VFD, as well as other complementary items, all integrated into a single station.

Additionally up to 2 additional rigs can be interlinked to simulate larger systems.


EMPOWER-RIG

| type | description | price |
|---|---|---|
| **EMPOWER-RIG** | all-in-one automating training rig | **13 125.00** |

## All-In-One - Training kit

**Comprising of:**

1. ME300 VFD
2. DOP-107 HMI
3. AS218 PLC

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*Scan to watch official Delta training videos*



## Indicative rated motor current conversion table

| Rated power | | 3-phase 3-pole 50 hz | | | | |
|---|---|---|---|---|---|---|
| | | 400V | 415V | 440V | 500V | 690V |
| kW | Hp | A | A | A | A | A |
| 0.37 | 0.5 | 0.7 | 0.6 | 0.6 | 0.5 | 0.4 |
| 0.55 | 0.75 | 1.0 | 1.0 | 0.9 | 0.8 | 0.6 |
| 0.75 | 1 | 1.4 | 1.3 | 1.2 | 1.1 | 0.8 |
| 1.1 | 1.5 | 2.0 | 1.9 | 1.8 | 1.6 | 1.2 |
| 1.5 | 2 | 2.7 | 2.6 | 2.5 | 2.2 | 1.6 |
| 2.2 | 3 | 4.0 | 3.8 | 3.6 | 3.2 | 2.3 |
| 4 | 5.5 | 7.2 | 7.0 | 6.6 | 5.8 | 4.2 |
| 5.5 | 7.5 | 9.9 | 9.6 | 9.0 | 7.9 | 5.8 |
| 7.5 | 10 | 13.5 | 13.0 | 12.3 | 10.8 | 7.8 |
| 10 | 13.5 | 18.0 | 17.4 | 16.4 | 14.4 | 10.5 |
| 11 | 15 | 19.8 | 19.1 | 18.0 | 15.9 | 11.5 |
| 15 | 20 | 27.1 | 26.1 | 24.6 | 21.7 | 15.7 |
| 18.5 | 25 | 33.4 | 32.2 | 30.3 | 26.7 | 19.4 |
| 22 | 30 | 40 | 38 | 36 | 32 | 23 |
| 30 | 40 | 54 | 52 | 49 | 43 | 31 |
| 37 | 50 | 67 | 64 | 61 | 53 | 39 |
| 45 | 60 | 81 | 78 | 74 | 65 | 47 |
| 55 | 75 | 99 | 96 | 90 | 79 | 58 |
| 75 | 100 | 135 | 130 | 123 | 108 | 78 |
| 90 | 125 | 162 | 157 | 148 | 130 | 94 |
| 110 | 150 | 198 | 191 | 180 | 159 | 115 |
| 132 | 180 | 238 | 230 | 217 | 191 | 138 |
| 160 | 220 | 289 | 278 | 262 | 231 | 167 |
| 200 | 270 | 361 | 348 | 328 | 289 | 209 |
| 220 | 300 | 397 | 383 | 361 | 318 | 230 |
| 250 | 340 | 451 | 435 | 410 | 361 | 261 |
| 315 | 430 | 568 | 548 | 517 | 455 | 329 |
| 355 | 480 | 641 | 617 | 582 | 512 | 371 |
| 375 | 500 | 677 | 652 | 615 | 541 | 392 |

| Single phase | |
|---|---|
| 220V | 240V |
| A | A |
| 3.9 | 3.6 |
| 5.2 | 4.8 |
| 6.6 | 6.1 |
| 9.6 | 8.8 |
| 13 | 12 |
| 19 | 17 |
| 32 | 29 |
| 41 | 38 |
| 7.5 | 10 |

**Note:** Rated 3Ø current calculated with a power factor of 0,8
Consult contactor supplier data sheet for maximum power application
3Ø motor power calculation: P = √3 I V cosφ
1Ø motor power calcualtion : P = I V cosφ

| Contactor utilisation | |
|---|---|
| **Category AC-1** | Continuous current rating:<br>All AC loads with a power factor<br>0.95 - heating, distribution |
| **Category AC-2** | Starting, plugging and inching of slip ring motors<br>• starting + 2.5 times rated motor current<br>• stopping < mains supply voltage |
| **Category AC-2** | Starting and stopping squirrel cage motors<br>• closing and opening at 6 to 8 times rated motor current<br>• stopping the voltage is at + 20% of mains supply voltage<br>• light breaking |
| **Category AC-4** | Plugging and inching of squirrel cage<br>• closing and opening 6 to 8 times rated motor current<br>• severe breaking |

| Switch category of use | |
|---|---|
| **A** | Connecting and disconnecting under no-load conditions |
| **B** | Switching of resistive loads, including moderate overloads |

| AC switch utilisation category (IEC 60947-3) | |
|---|---|
| **Category AC-20** | Connecting and disconnecting under no-load conditions |
| **Category AC-21** | Switching of resistive loads, including moderate overloads |
| **Category AC-22** | Switching of mixed resistive and and inductive loads, including moderate overloads |
| **Category AC-23** | Switching of motor loads or highly inductive loads |

| DC switch utilisation category (IEC 60947-5-1) | |
|---|---|
| **Category DC-20** | Connecting and disconnecting under no-load conditions |
| **Category DC-21** | Switching of resistive loads, including moderate overloads |
| **Category DC-22** | Switching of mixed resistive and and inductive loads, including moderate overloads |

## Type 2 co-ordination tables

### 80kA 400V (IEC/EN60947-4-1), Direct-on-line starters with fuses

| Motor | | | Fuse rating | | | | |
|---|---|---|---|---|---|---|---|
| Rated output (KW) | Rated current (A) | Fuse switch type | gG | aM | Contactor | Thermal overload | Current range (A) |
| 0.37 | 1.1 | 3631 3003 | 6 | 4 | BF09A | RF380160 | 1-1.6 |
| 0.55 | 1.5 | 3631 3003 | 10 | 4 | BF09A | RF380160 | 1-1.6 |
| 0.75 | 1.9 | 3631 3003 | 10 | 4 | BF09A | RF380250 | 1.6-2.5 |
| 1.1 | 2.7 | 3631 3003 | 16 | 6 | BF09A | RF380400 | 2.5-4 |
| 1.5 | 3.6 | 3631 3003 | 16 | 10 | BF09A | RF380400 | 2.5-4 |
| 2.2 | 4.9 | 3631 3003 | 25 | 10 | BF09A | RF380650 | 4-6.5 |
| 3 | 6.5 | 3631 3003 | 32 | 16 | BF12A | RF381000 | 6.3-10 |
| 4 | 8.5 | 3631 3003 | 32 | 20 | BF16A | RF381000 | 6.3-10 |
| 5.5 | 11.5 | 3831 3011 | 50 | 25 | BF25A | RF381400 | 9-14 |
| 7.5 | 15.5 | 3831 3011 | 63 | 32 | BF32A | RF381800 | 13-18 |
| 11 | 22 | 3831 3011 | 80 | 40 | BF32A | RF382500 | 20-25 |
| 15 | 29 | 3831 3011 | 100 | 63 | BF50 | RF95333 | 20-22 |
| 18.5 | 35 | 3831 3011 | 125 | 80 | BF50 | RF95342 | 28-32 |
| 22 | 41 | 3831 3024 | 160 | 100 | BF65 | RF95350 | 35-50 |
| 30 | 55 | 3831 3024 | 200 | 100 | BF95 | RF95365 | 46-65 |
| 37 | 66 | 3831 3024 | 200 | 125 | BF95 | RF95382 | 60-82 |
| 45 | 80 | 3831 3024 | 250 | 160 | BF160 | RF200100 | 60-100 |
| 55 | 97 | 3831 3039 | 315 | 200 | BF195 | RF200100 | 90-150 |
| 75 | 132 | 3831 3039 | 400 | 250 | B250 | RF200150 | 120-200 |
| 90 | 160 | 3831 3039 | 400 | 315 | B250 | RF420250 | 150-250 |
| 110 | 195 | 3831 3039 | 400 | 355 | B310 | RF420250 | 150-250 |
| 132 | 230 | 3811 3063 | 630 | 400 | B400 | RF420250 | 150-250 |
| 160 | 280 | 3811 3063 | 630 | 500 | B400 | RF420300 | 180-300 |
| 200 | 350 | 3811 3063 | 630 | 630 | B500 | RF420400 | 250-420 |

### 80kA 400V (IEC/EN60947-4-1), Star-Delta starters with fuses

| Motor | | | Fuse rating | | | | | |
|---|---|---|---|---|---|---|---|---|
| Rated output (KW} | Rated current (A) | Fuse switch type | gG | aM | Line | Delta | Star | Current range (A) |
| 4 | 8.6 | 3631 3003 | 20 | 10 | BF9A | BF9A | BF9A | |
| 5.5 | 11.5 | 3631 3003 | 25 | 16 | BF12A | BF12A | BF9A | |
| 7.5 | 15.2 | 3631 3003 | 32 | 20 | BF16A | BF16A | BF9A | 6.3-10 |
| 11 | 22 | 3631 3005 | 40 | 25 | BF25A | BF25A | BF9A | 9-14 |
| 15 | 29 | 3631 3005 | 50 | 32 | BF25A | BF25A | BF12A | 13-18 |
| 18.5 | 35 | 3638 3011 | 63 | 40 | BF25A | BF25A | BF18A | 17-23 |
| 22 | 41 | 3638 3011 | 80 | 50 | BF32A | BF32A | BF18A | 24-32 |
| 30 | 55 | 3638 3011 | 100 | 63 | BF38A | BF38A | BF25A | 32-38 |
| 37 | 66 | 3638 3011 | 125 | 80 | BF50 | BF50 | BF32A | 35-50 |
| 45 | 80 | 3638 3011 | 125 | 100 | BF65 | BF65 | BF32A | 35-50 |
| 55 | 97 | 3831 3024 | 160 | 125 | BF80 | BF80 | BF38A | 46-65 |
| 75 | 132 | 3831 3024 | 200 | 160 | BF80 | BF80 | BF50 | 60-100 |
| 90 | 160 | 3831 3024 | 250 | 200 | B115 | B115 | BF65 | 90-150 |
| 110 | 195 | 3831 3024 | 250 | 200 | B115 | B115 | BF65 | 120-200 |
| 132 | 230 | 3831 3039 | 315 | 250 | BF160 | BF160 | BF80 | 120-200 |
| 160 | 280 | 3831 3039 | 400 | 315 | BF195 | BF195 | B115 | 120-200 |
| 250 | 430 | 3811 3063 | 500 | 500 | B250 | B250 | BF160 | 150-250 |
| 295 | 540 | 3811 3063 | 630 | 630 | B310 | B310 | BF195 | 240-400 |

### 50kA 400V, between SM circuit breakers and contactors series BG and BF

| P(kW) | I0(A) | Current adjustment | Circuit breaker | Contactor |
|---|---|---|---|---|
| <0.6 | - | 0.1 - 0.16 | SM1R0016 | BG6... |
| 0.06 | - | 0.16 - 0.25 | SM1R0025 | BG6... |
| 0.09 | - | 0.25 - 0.4 | SM1R0040 | BG6... |
| 0.12 | - | 0.4 - 0.63 | SM1R0063 | BG6... |
| 0.25 | 0.85 | 0.63 - 1 | SM1R0100 | BG6... |
| 0.55 | 1.4 | 1 - 1.6 | SM1R0160 | BG6... |
| 0.75 | 1.9 | 1.6 - 2.5 | SM1R0250 | BG6... |
| 1.5 | 3.5 | 2.5 - 4 | SM1R0400 | BG6... |
| 2.2 | 4.8 | 4 - 6.5 | SM1R0650 | BG6... |
| 4 | 8 | 6.3 - 10 | SM1R1000 | BG9.../BF9... |
| 5.5 | 11 | 9 - 14 | SM1R1400 | BF12... |
| 7.5 | 15 | 13 - 18 | SM1R1800 | BF16... |
| 11 | 21 | 20 - 25 | SM1R2500 | BF25... |
| 15 | 29 | 22 - 32 | SM1R3200 | BF32... |
| 18.5 | 35 | 28 - 40 | SM1R4000 | BF40... |
| 22 | 41 | 40 - 50 | SM2R5000 | BF50... |
| 30 | 55 | 45 - 63 | SM2R6300 | BF65... |
| 37 | 67 | 57 - 75 | SM3R7500 | BF80... |
| 45 | 80 | 80 - 100 | SM3R9900 | BF95... |

## Brake resistor chart for Delta drives

| Drive FRAME | Resistor connection per brake unit | Resistor | ME 300 | MS 300 | C2000+ | ED | Breaking Unit(s) | Total qty resistors |
|---|---|---|---|---|---|---|---|---|
| **230V 1ph drives - 125% Braking torque/ 10 % ED** | | | | | | | | |
| 200W | Single | RXLG-80W/750RJ | Yes | Yes | | | Built in | 1 |
| 400W | Single | RXLG-80W/200RJ | Yes | Yes | | | Built in | 1 |
| 750W | Single | RXLG-80W/200RJ | Yes | Yes | | | Built in | 1 |
| 1.5kW | Single | RXLG-200W/91RJ | Yes | Yes | | | Built in | 1 |
| 2.2kW | Single | RXLG-300W/70RJ | Yes | Yes | | | Built in | 1 |
| 3.7kW | 2 in parallel | RXLG-300W/70RJ | | | | Yes | Built in | 2 |
| **400V 3ph drives - 125% Braking torque/ 10 % ED** | | | | | | | | |
| 400W | Single | RXLG-80W/750RJ | Yes | Yes | | | Built in | 1 |
| 750W | Single | RXLG-80W/750RJ | Yes | Yes | Yes | | Built in | 1 |
| 1.5kW | Single | RXLG-200W/360RJ | Yes | Yes | Yes | | Built in | 1 |
| 2.2kW | Single | RXLG-300W/250RJ | Yes | Yes | Yes | Yes | Built in | 1 |
| 4kW | 2 in parallel | RXLG-300W/250RJ | Yes | Yes | Yes | Yes | Built in | 1 |
| 5.5kW | Single | RXLG-1KW/75RJ | Yes | Yes | Yes | Yes | Built in | 1 |
| 7.5kW | Single | RXLG-1KW/75RJ | Yes | Yes | Yes | Yes | Built in | 1 |
| 11kW | Single | RXLG-1.5KW/43RJ | | Yes | Yes | Yes | Built in | 1 |
| 15kW | Single | RXLG-2kW/32RJ | | Yes | Yes | Yes | Built in | 1 |
| 18.5kW | Single | RXLG-2kW/32RJ | | Yes | Yes | Yes | Built in | 1 |
| 22kW | Single | RXLG-3kW/26RJ | | Yes | Yes | Yes | Built in | 1 |
| 30kW | Single | RXLG-4,8KW/16RJ | | | Yes | Yes | Built in | |
| 37kW | Single | RXLG-4,8KW/16RJ | | | Yes | Yes | VFDB4045 | 1 |
| 45kW | Single | RXLG-6KW/14RJ | | | Yes | Yes | VFDB4045 | 1 |
| 55kW | Single | RXLG-4KW/20RJ | | | Yes | | VFD4030 *2 | 2 |
| 75kW | Single | RXLG-4,8KW/16RJ | | | Yes | | VFD4045 *2 | 2 |
| 90kW | Single | RXLG-6KW/14RJ | | | Yes | | VFD4045 *2 | 2 |
| 110kW | 2 in parallel | RXLG-6KW/14RJ '2 | | | Yes | | VFDB4110 | 2 |
| 132kW | 4 in parallel | RXLG-4,8KW/16RJ •4 | | | Yes | | VFDB4160 | 4 |
| 160kW | 4 in parallel | RXLG-4,8KW/16RJ '4 | | | Yes | | VFDB4160 | 4 |
| 185kW | 4 in parallel | RXLG-6KW/14RJ •4 | | | Yes | | VFDB4185 | 4 |
| 200kW | 2 in parallel | RXLG-6KW/14RJ "2 | | | Yes | | VFDB4110*2 | 4 |
| 220kW | 2 in parallel | RXLG-6KW/14RJ "2 | | | Yes | | VFDB4110*2 | 4 |
| 250kW | 4 in parallel | RXLG-4,8KW/16RJ •4 | | | Yes | | VFDB4160*2 | 8 |
| 280kW | 4 in parallel | RXLG-4,8KW/16RJ •4 | | | Yes | | VFDB4160*2 | 8 |
| 315kW | 4 in parallel | RXLG-4,8KW/16RJ •4 | | | Yes | | VFDB4160*2 | 8 |
| 355kW | 4 in parallel | RXLG-6KW/14RJ •4 | | | Yes | | VFDB4185*2 | 8 |
| 400kW | 3 in parallel | RXLG-6KW/14RJ •3 | | | Yes | | VFDB4160*3 | 9 |
| 450kW | 3 in parallel | RXLG-6KW/14RJ •3 | | | Yes | | VFDB4185*3 | 9 |
| 500kW | 4 in parallel | RXLG-6KW/14RJ •4 | | | Yes | | VFDB4185*3 | 12 |
| 560kW | 3 in parallel | RXLG-6KW/14RJ •3 | | | Yes | | VFDB4160*4 | 12 |

## Drive rating chart C2000 525 - 690V for Delta drives

| Drive series | Light Duty (Default) 120% of rated current can endure for 1 minute | | | | Heavy Duty 150% of rated current can endure for 1 minute, 180% can endure for 3 seconds | | | |
|---|---|---|---|---|---|---|---|---|
| | 525V kW | 575V kW | 690V kW | Rated Amps | 525V kW | 575V kW | 690V kW | Rated Amps |
| **Nominal voltage range 525V - 600V (- 15% - + 10%)** | | | | | | | | |
| VFD037C53A-21 | 3.3 | 3.7 | - | 6.7 | 2 | 2.2 | - | 4.6 |
| VFD055C53A-21 | 5 | 5.5 | - | 9.9 | 3.3 | 3.7 | - | 6.9 |
| VFD075C53A-21 | 6.8 | 7.5 | - | 12.1 | 3.3 | 3.7 | - | 8.3 |
| VFD110C53A-21 | 10 | 11 | - | 18.7 | 6.8 | 7.5 | - | 13 |
| VFD150C53A-21 | 13 | 15 | - | 24.2 | 6.8 | 7.5 | - | 16.8 |
| **Nominal voltage range 525V - 690V (- 15% - + 10%)** | | | | | | | | |
| VFD220C63B-21 | 17 | 18 | 22 | 30 | 11.41 | 12.5 | 15 | 20 |
| VFD300C63B-21 | 22 | 25 | 30 | 36 | 14 | 15.4 | 18.5 | 24 |
| VFD370C63B-21 | 28 | 31 | 37 | 45 | 16.73 | 18.3 | 22 | 30 |
| VFD450C63B-21 | 34 | 38 | 45 | 54 | 22.82 | 25 | 30 | 36 |
| VFD550C63B-21 | 42 | 46 | 55 | 67 | 28.15 | 30.8 | 37 | 45 |
| VFD750C63B-21 | 57 | 63 | 75 | 86 | 34.23 | 37.5 | 45 | 54 |
| VFD900C63B-21 | 68 | 75 | 90 | 104 | 41.84 | 45.8 | 55 | 67 |
| VFD1100C63B-21 | 84 | 92 | 110 | 125 | 57 | 62.5 | 75 | 86 |
| VFD1320C63B-21 | 100 | 110 | 132 | 150 | 68.47 | 75 | 90 | 104 |
| VFD1600C63B-21 | 122 | 133 | 160 | 180 | 95.1 | 91.6 | 110 | 125 |
| VFD2000C63B-21 | 152 | 167 | 200 | 220 | 100.43 | 110 | 132 | 150 |
| VFD2500C63B-21 | 190 | 208 | 250 | 290 | 121.73 | 133.3 | 160 | 180 |
| VFD3150C63B-21 | 240 | 262 | 315 | 350 | 152.17 | 166.6 | 200 | 220 |

## Drive rating chart C2000+

| Drive series | (Default) Heavy Duty | | Super Heavy Duty | |
|---|---|---|---|---|
| | 150% (60sec) /180% (3 sec) | | 150% (60sec) / 200% (3 sec) | |
| | kW | Rated Amps | kW | Rated Amps |
| VFD007C4EA-21* | 0.75 | 3 | 0.4 | 1.7 |
| VFD015C4EA-21* | 1.5 | 4 | 0.75 | 3 |
| VFD022C4EA-21* | 2.2 | 6 | 1.5 | 4 |
| VFD040C4EA-21* | 4 | 10.5 | 3.7 | 9 |
| VFD055C4EA-21* | 5.5 | 12 | 4 | 10.5 |
| VFD075C4EA-21* | 7.5 | 18 | 5.5 | 12 |
| VFD110C4EA-21* | 11 | 24 | 7.5 | 18 |
| VFD150C4EA-21* | 15 | 32 | 11 | 24 |
| VFD185C4EA-21* | 18.5 | 38 | 15 | 32 |
| VFD220C4EA-21* | 22 | 45 | 18.5 | 38 |
| VFD300C4EA-21* | 30 | 60 | 22 | 45 |
| VFD370C43S-00 | 37 | 73 | 30 | 60 |
| VFD450C43S-00 | 45 | 91 | 37 | 73 |
| VFD550C43A-00 | 55 | 110 | 45 | 91 |
| VFD750C43A-00 | 75 | 150 | 55 | 110 |
| VFD900C43A-00 | 90 | 180 | 75 | 150 |
| VFD1100C43A-00 | 110 | 220 | 90 | 180 |
| VFD1320C43A-00 | 132 | 260 | 110 | 220 |
| VFD1600C43A-00 | 160 | 310 | 132 | 260 |
| VFD1850C43A-00 | 185 | 370 | 160 | 310 |
| VFD2000C43A-00 | 200 | 395 | 160 | 310 |
| VFD2200C43A-00 | 220 | 460 | 185 | 370 |
| VFD2500C43A-00 | 250 | 481 | 200 | 395 |
| VFD2800C43A-00 | 280 | 550 | 220 | 460 |
| VFD3150C43A-00 | 315 | 616 | 280 | 550 |
| VFD3550C43A-00 | 355 | 683 | 315 | 616 |
| VFD4000C43A-00 | 400 | 770 | 355 | 683 |
| VFD4500C43A-00 | 450 | 866 | 355 | 683 |
| VFD5000C43A-00 | 500 | 930 | 450 | 866 |
| VFD5600C43A-00 | 560 | 1094 | 500 | 930 |

## Drive rating chart CP2000 / CFP2000

| Drive series | (Default) Light Duty | | Normal Duty | |
|---|---|---|---|---|
| | 120% (1min) | | 120% (1min) / 160% (3 sec) | |
| | kW | Rated Amps | kW | Rated Amps |
| VFD015CP/FP | 1.5 | 4.2 | 0.75 | 3 |
| VFD022CP/FP | 2.2 | 5.5 | 1.5 | 4 |
| VFD040CP/FP | 4 | 10.5 | 3.7 | 9 |
| VFD055CP/FP | 5.5 | 13 | 4 | 10.5 |
| VFD075CP/FP | 7.5 | 18 | 5.5 | 12 |
| VFD110CP/FP | 11 | 24 | 7.5 | 18 |
| VFD150CP/FP | 15 | 32 | 11 | 24 |
| VFD185CP/FP | 18.5 | 38 | 15 | 32 |
| VFD220CP/FP | 22 | 45 | 18.5 | 38 |
| VFD300CP/FP | 30 | 60 | 22 | 45 |
| VFD370CP/FP | 37 | 73 | 30 | 60 |
| VFD450CP/FP | 45 | 91 | 37 | 73 |
| VFD550CP/FP | 55 | 110 | 45 | 91 |
| VFD750CP/FP | 75 | 150 | 55 | 110 |
| VFD900CP/FP | 90 | 180 | 75 | 150 |
| VFD1100CP/FP | 110 | 220 | 90 | 180 |
| VFD1320CP/FP | 132 | 260 | 110 | 220 |
| VFD1600CP/FP | 160 | 310 | 132 | 260 |
| VFD1850CP/FP | 185 | 370 | 160 | 310 |
| VFD2200CP/FP | 220 | 460 | 185 | 370 |
| VFD2800CP/FP | 280 | 530 | 220 | 460 |
| VFD3150CP/FP | 315 | 616 | 280 | 550 |
| VFD3550CP/FP | 355 | 683 | 315 | 616 |
| VFD4000CP/FP | 400 | 770 | 355 | 683 |

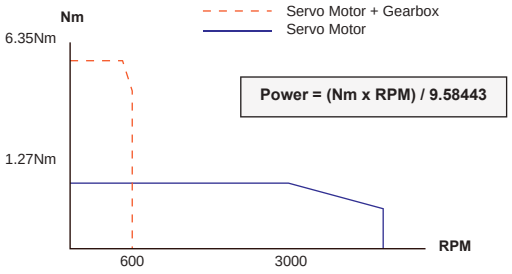
## Drive dual rating chart ME300 / MS300

Dual rating allows drives to be used across a range of applications according to overload capacity required, for example:

**Light Duty / Normal Duty - Fan and pump application**
**Heavy Duty - Compressor, crusher, spindle and conveyor**

| Drive series | (Default) Heavy Duty | | Normal Duty | |
|---|---|---|---|---|
| | 150% (60sec) / 200% (3sec) | | 120% (60sec) / 150% (3sec) | |
| | kW | Rated Amps | kW | Rated Amps |
| VFD1A6ME/MS21 | 0.2 | 1.6 | 0.3 | 1.8 |
| VFD2A8ME/MS21 | 0.4 | 2.8 | 0.55 | 3.2 |
| VFD4A8ME/MS21 | 0.75 | 4.8 | 0.9 | 5 |
| VFD7A5ME/MS21 | 1.5 | 7.5 | 1.8 | 8.5 |
| VFD11AME/MS21 | 2.2 | 11 | 3 | 12.5 |
| VFD1A5ME/MS43 | 0.4 | 1.5 | 0.55 | 1.8 |
| VFD2A7ME/MS43 | 0.75 | 2.7 | 1.1 | 3 |
| VFD4A2ME/MS43 | 1.5 | 4.2 | 1.6 | 4.6 |
| VFD5A5ME/MS43 | 2.2 | 5.5 | 2.8 | 6.5 |
| VFD9A0ME/MS43 | 4 | 9 | 4.5 | 10.5 |
| VFD13AME/MS43 | 5.5 | 13 | 6 | 15.7 |
| VFD17AME/MS43 | 7.5 | 17 | 8.5 | 20.5 |
| VFD25AMS43AFS | 11 | 25 | 12 | 28 |
| VFD32AMS43AFS | 15 | 32 | 17 | 36 |
| VFD38AMS43AFS | 18.5 | 38 | 20 | 41.5 |
| VFD45AMS43AFS | 22 | 45 | 24 | 49 |

## Gear ratio chart




**Example**

**Servo Motor** - ECMA-C10604RS
**Rated Torque** - 1.27 Nm
**Rated Speed** - 3000 RPM

**Gearbox** - WAB-060-005-K-P1
**Ratio** - 5:1
**Rated Torque** - 60 Nm

$T_{out} = T_m \times R$
$T_{out} = 1.27 \times 5$
$T_{out} = 6.35Nm$

$S_{out} = S_m / R$
$S_{out} = 3000 / R$
$S_{out} = 600$ RPM

$T_{out}$ = Torque Output
$S_{out}$ = Speed Output
$T_m$ = Motor rated Torque
$S_m$ = Motor rated Speed
$R$ = Gearbox reduction ratio

# Cascading according to IEC 60947-2 MCCB x160, x250, x630, P630, h1000, h1600

Cascading value in kA according to IEC 60947-2. Network: 3 phases + neutral, 380-415 VAC

## Upstream Circuit Breaker

### MCBs

| | | | Reference | MJT | MA | NF | NFN | NGN | NCN | NRN | | | HLF | HMD | HMC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | IEC 60947-2 | 6kA | 6kA | 10kA | 10kA | 10kA | 15kA | 25kA | 20kA | 15kA | 10kA | 15kA | 15kA |
| | | | | | | | | | | | | | | | |
| | | | IN MAX | 40A | 63A | 40A | 63A | 63A | 63A | 6-25A | 32/40A | 50/63A | 125A | 125A | 125A |
| | | | Curve | C | C | C | C | D | C | C | C | C | C | D | C |
| MJT | 6kA | | 40A | C | | | | | | | | | | | |
| MA | 6kA | | 63A | C | | | | | | | | | | | |
| NF | 10kA | | 40A | C | | | | | | | | | | | |
| NFN | 10kA | | 63A | C | | | | | | | | | | | |
| NGN | 10kA | | 63A | D | | | | | | | | | | | |
| NCN | 15kA | | 63A | C | | | | | | | | | | | |
| NRN | 25kA | | 6-25A | C | | | | | | | | | | | |
| | 20kA | | 32/40A | C | | | | | | | | | | | |
| | 15kA | | 50/63A | C | | | | | | | | | | | |
| HLF | 10kA | | 125A | C | | | | | | | | | | | |
| HMD | 15kA | | 125A | D | | | | | | | | | | | |
| HMC | 15kA | | 125A | C | | | | | | | | | | | |

### MCCBs

| HHA | HNA | HHB | HNB | HMJ | HEJ | HMW | HEW | HNE | HEE | HNF | HEF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25kA | 40kA | 25kA | 40kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA | 50kA | 70kA |
| x160 | x160 | x250 | x250 | x630 | | P630 | | h1000 | | h1600 | |
| 160A | 160A | 250A | 250A | 630A | | 630A | | 1000A | | 1600A | |
| Thermal Magnetic | | | | | | Electronic | | | | | |
| 25 | 40 | 20 | 20 | | | | | | | | |
| 25 | 40 | 25 | 40 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| 25 | 40 | 25 | 40 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| 25 | 40 | 25 | 40 | 25 | 25 | 20 | 20 | 20 | 20 | 20 | 20 |
| 25 | 40 | 25 | 40 | 25 | 25 | 20 | 20 | 20 | 20 | 20 | 20 |
| 25 | 40 | 25 | 40 | 25 | 25 | 20 | 20 | 20 | 20 | 20 | 20 |
| 25 | 40 | 25 | 40 | 50 | 55 | 30 | 30 | 30 | 30 | 30 | 30 |
| 25 | 40 | 25 | 40 | 50 | 70 | 25 | 25 | 25 | 25 | 25 | 25 |
| 25 | 40 | 25 | 40 | 25 | 25 | 20 | 20 | 20 | 20 | 20 | 20 |
| 25 | 40 | 25 | 40 | 27 | 27 | 33 | 33 | 15 | 15 | 15 | 15 |
| 25 | 40 | 25 | 40 | 27 | 27 | 33 | 33 | 15 | 15 | 15 | 15 |
| 25 | 40 | 25 | 40 | 27 | 27 | 33 | 33 | 15 | 15 | 15 | 15 |

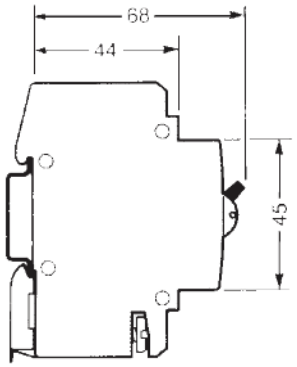
## Downstream Circuit Breaker

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HHA | 25kA | x160 | 160A | Thermal Magnetic | | | | | | | | | | | | | |
| HNA | 40kA | | | | | | | | | | | | | | | | |
| HHB | 25kA | x250 | 250A | | | | | | | | | | | | | | |
| HNB | 40kA | | | | | | | | | | | | | | | | |
| HMJ | 50kA | x630 | 630A | | | | | | | | | | | | | | |
| HEJ | 70kA | | | | | | | | | | | | | | | | |
| HMW | 50kA | P630 | 630A | Electronic | | | | | | | | | | | | | |
| HEW | 70kA | | | | | | | | | | | | | | | | |
| HNE | 50kA | h1000 | 1000A | | | | | | | | | | | | | | |
| HEE | 70kA | | | | | | | | | | | | | | | | |
| HNF | 50kA | h1600 | 1600A | | | | | | | | | | | | | | |
| HEF | 70kA | | | | | | | | | | | | | | | | |

| | | 25 | 40 | 50 | 70 | 50 | 70 | 45 | 45 | 28 | 28 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 40 | 50 | 70 | 50 | 70 | 50 | 70 | 50 | 50 |
| | | | | 50 | 70 | 50 | 70 | 45 | 45 | 28 | 28 |
| | | | | 50 | 70 | 50 | 70 | 50 | 70 | 50 | 50 |
| | | | | 50 | 70 | 50 | 70 | 50 | 70 | 50 | 70 |
| | | | | | 70 | | 70 | | 70 | | 70 |
| | | | | 50 | 70 | 50 | 70 | 50 | 70 | 50 | 70 |
| | | | | | 70 | | 70 | | 70 | | 70 |
| | | | | | | | | 50 | 70 | 50 | 70 |
| | | | | | | | | | 70 | | 70 |
| | | | | | | | | | | 50 | 70 |
| | | | | | | | | | | | 70 |

*Note: Cascading table based on 3Ph 415V networks. MJT - only for 230V networks.*

## Use of MCBs in DC systems




Protection and control of circuits against overloads and short circuits – in commercial and industrial electrical distribution systems

EN 60898-1
NF C 61-410
IEC 60947-2
SANS 60947-2

### DC applications

Because of their quick make and break design and excellent arc quenching capabilities, Hager circuit breakers are suitable for use on DC. When selecting a circuit breaker for any DC application it is necessary to consider 2 main points:

### a) System voltage

The system voltage and the type of system determines the number of poles required to provide the necessary breaking capacity and arc control. The table gives the maximum DC voltage and breaking capacity for one pole or two poles connected in the series.

The positioning of these breaking poles in the system depends on whether the system is earthed or insulated and if it is earthed whether one polarity is earthed or the centre point is earthed.

### b) Type of DC systems: 3 different types

- Network connected to the earth - one polarity earthed (+ve or -ve):
  If -ve is earthed, all poles will be placed in series in the +ve leg.
  If the +ve is earthed, all poles will be placed in the -ve leg.
  Note: an extra pole will be needed on the earthed polarity to provide isolation.
- Network connected to the earth - middle point earthed:
  The number of poles required to break Isc should be placed on each polarity.
- Network insulated to the earth:
  The number of poles required to break Isc should be split between the two polarities.

**Table 1**

| Range | In | No. of poles in series needed for breaking | Breaking capacity (kA) L/R = 15ms ≤48V | 60V | 125V | 250V | 500V |
|---|---|---|---|---|---|---|---|
| **MV** | 6 to 40A | 1P | 15 | – | – | – | – |
| **MA** | 2 to 63A | 1P | 15 | – | – | – | – |
| | | 2P | 20 | 20 | – | – | – |
| | | 3P | 25 | 25 | 20 | – | – |
| | | 4P | 35 | 35 | 25 | – | – |
| **NF** | 2 to 40A | 1P | 15 | – | – | – | – |
| | | 2P | 20 | 20 | – | – | – |
| | | 3P | 25 | 25 | 20 | – | – |
| | | 4P | 35 | 35 | 25 | – | – |
| **NFN** | 50 to 63 A | 1P | 15 | 15 | 10 | – | – |
| | | 2P | 20 | 20 | 15 | 6 | – |
| | | 3P | 25 | 25 | 20 | 10 | – |
| | | 4P | 35 | 35 | 25 | 15 | 10 |
| **NGN, NCN** | 2 to 63A | 1P | 15 | 15 | 10 | – | – |
| | | 2P | 20 | 20 | 15 | 6 | – |
| | | 3P | 25 | 25 | 20 | 10 | – |
| | | 4P | 35 | 35 | 25 | 15 | 10 |
| **NRN** | 6 to 25A | 1P | 25 | 25 | 20 | – | – |
| | | 2P | 35 | 35 | 25 | 15 | – |
| | | 3P | 40 | 40 | 35 | 20 | – |
| | | 4P | 45 | 45 | 40 | 25 | 10 |
| | 32 to 40A | 1P | 20 | 20 | 15 | – | – |
| | | 2P | 25 | 25 | 20 | 10 | – |
| | | 3P | 30 | 30 | 30 | 15 | – |
| | | 4P | 35 | 35 | 35 | 20 | 10 |
| | 50 to 63A | 1P | 15 | 15 | 10 | – | – |
| | | 2P | 20 | 20 | 15 | 6 | – |
| | | 3P | 25 | 25 | 20 | 10 | – |
| | | 4P | 35 | 35 | 25 | 15 | 10 |
| **HLF** | 80 to 125A | 1P | 12 | 12 | 8 | – | – |
| | | 2P | 15 | 15 | 10 | 4 | – |
| | | 3P | 25 | 25 | 25 | 10 | – |
| | | 4P | 30 | 30 | 30 | 15 | 5 |
| **HMC, HMD** | 80 to 125A | 1P | 15 | 15 | 10 | – | – |
| | | 2P | 20 | 20 | 15 | 6 | – |
| | | 3P | 30 | 30 | 30 | 15 | – |
| | | 4P | 35 | 35 | 35 | 20 | 10 |

**Table 2**
magnetic trip

| | | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| | | $I_{t1}$ | $I_{t2}$ | $I_{rm1}$ | $I_{rm2}$ |
| Curve B | AC 50Hz | 1.13 In | 1.45 In | 3 In | 5 In |
| | DC | 1.13 In | 1.45 In | 4 In | 7 In |
| Curve C | AC 50Hz | 1.13 In | 1.45 In | 5 In | 10 In |
| | DC | 1.13 In | 1.45 In | 7 In | 15 In |
| Curve D | AC 50Hz | 1.13 In | 1.45 In | 10 In | 20 In |
| | DC | 1.13 In | 1.45 In | 15 In | 30 In |

## DC applications for DF Electric gG fuse-links

**DC applications for DF gG fuse-links**

Fuses are generally suitable for both AC and DC applications. The DC performance of fuse-links is different and AC ratings cannot be used for DC applications.

### NH gG 500V (L/R = 15ms)

| Size | Rated Current | Max. DC Voltage | DC Breaking Capacity |
|---|---|---|---|
| 000<br>00 | 2A...100A<br>125A...160A | 250 VDC | 80 kA |
| 0<br>0S | 6A...160A<br>200A...250A | 250 VDC<br>125 VDC | 80 kA |
| 1 | 50A...250A<br>315A...355A | 250 VDC<br>80 VDC | 80 kA |
| 2 | 63A...400A<br>425A...500A | 250 VDC<br>80 VDC | 80 kA |
| 3 | 250A...630A<br>800A | 250 VDC<br>80 VDC | 80 kA |
| 4 | 315A...1000A<br>1250A | 250 VDC<br>80 VDC | 80 kA |

### NH gG 690V (L/R = 15ms)

| Size | Rated Current | Max. DC Voltage | DC Breaking Capacity |
|---|---|---|---|
| 000/00 | 2A...100A | 250 VDC | 25 kA |
| 0 | 6A...100A | 440 VDC | 25 kA |
| 1 | 50A...200A | 440 VDC | 25 kA |
| 2 | 63A...315A | 440 VDC | 25 kA |
| 3 | 250A...500A | 440 VDC | 25 kA |
| 4 | 400A...800A | 440 VDC | 25 kA |

## DF Electric aR NH semiconductor fuse-link charts

Due to the high power dissipation of NH aR fuse links, it is necessary to apply a derating factor that determines the maximum allowable continuous current when these fuse links are installed in open type NH bases or in a fuse switch disconnector.

### Fuse load constant $C_L$ — $I_{MAX.} = In \times C_L$

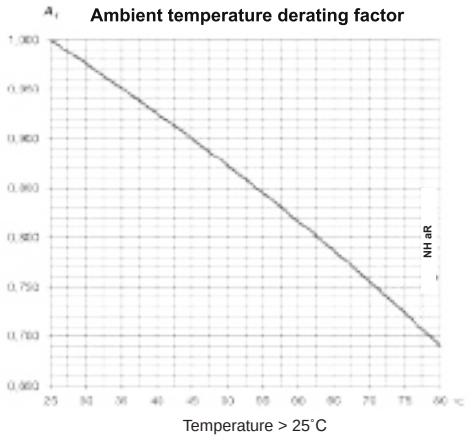
| Size | In (A) | Open Type Bases | Fuse Switch Disconnectors |
|---|---|---|---|
| NH000 | 16 | 1 | 1 |
| | 20 | 1 | 1 |
| | 25 | 1 | 1 |
| | 32 | 1 | 1 |
| | 40 | 1 | 1 |
| | 50 | 1 | 1 |
| | 63 | 1 | 1 |
| | 80 | 1 | 0.95 |
| | 100 | 1 | 0.90 |
| | 125 | 0.95 | 0.85 |
| | 160 | 0.90 | 0.75 |
| | 200 | 0.80 | 0.70 |
| | 250 | 0.80 | 0.60 |
| NH1 | 40 | 1 | 0.95 |
| | 50 | 0.90 | 0.85 |
| | 63 | 0.90 | 0.85 |
| | 80 | 0.90 | 0.85 |
| | 100 | 0.90 | 0.85 |
| | 125 | 0.75 | 0.70 |
| | 160 | 0.75 | 0.70 |
| | 200 | 0.75 | 0.70 |
| | 250 | 0.75 | 0.70 |
| | 315 | 0.75 | 0.65 |
| | 350 | 0.70 | 0.65 |
| | 400 | 0.70 | 0.60 |

### Fuse load constant $C_L$ — $I_{MAX.} = In \times C_L$

| Size | In (A) | Open Type Bases | Fuse Switch Disconnectors |
|---|---|---|---|
| NH2 | 200 | 0.70 | 0.65 |
| | 250 | 0.70 | 0.65 |
| | 315 | 0.70 | 0.65 |
| | 350 | 0.70 | 0.65 |
| | 400 | 0.70 | 0.65 |
| | 450 | 0.65 | 0.60 |
| | 500 | 0.65 | 0.60 |
| | 550 | 0.65 | 0.60 |
| | 630 | 0.65 | 0.55 |
| | 700 | 0.65 | 0.55 |
| NH3 | 500 | 0.70 | 0.65 |
| | 550 | 0.70 | 0.65 |
| | 630 | 0.70 | 0.65 |
| | 700 | 0.70 | 0.60 |
| | 800 | 0.70 | 0.60 |
| | 900 | 0.65 | 0.55 |
| | 1000 | 0.60 | 0.50 |

**Ambient temperature correction coefficient ($A_1$)**

When the utilization ambient temperature is higher than 25˚C, the fuse-link must be “de-rated”. The rated current of fuse link must be multiplied by a derating factor A1 to find the maximum operating current.
Imax = In x A1




Temperature > 25˚C

## Calculating capacitor size requirements for power factor correction

It is imperative that correct capacitor sizes be selected when calculating capacitor requirements. In the case of group compensation it is recommended that the first capacitor step be equal to half the value of the following steps, to allow a smooth overall more finely tuned correction system.

Table 2 below will assist in calculating capacitor values required in specific applications. Prior knowledge of the following is required:

a) Power factor before applying capacitors *(left column)*

b) Required power factor after applying capacitors *(top row)*

c) Total consumption in kW (per kW)

The correct capacitor size can then be calculated by crossing the horizontal and vertical values of table 2.

**Example:**

1. Convert the plant load to kW (kVA x Power Factor = kW)
   400 kVA x 0.70 PF = 280kW (useful power).
2. To correct a load of 400 kVA at 0.70 PF to 0.96. Follow the 0.70 value (in the left vertical column table 2) horizontally until below the 0.96 value (in the top horizontal row) the value is 0.729.
3. Capacitor required to correct from 0.70 to 0.96 ( Power x Capacitor from table value )
   280kW x 0.729 = 204.12 kVAr

**Savings:** 280kW at 0.70 PF = 400 kVA
280kW at 0.96 PF = 292 kVA
Reduction = 108 kVA ( 27% less of transformer load )



**Try the EM PFC Calculator.**
*Visit our website*
*www.em.co.za/powerfactor*

**Table 2**

| PF load before applying capacitors | Target power factor | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.80 | 0.85 | 0.90 | 0.91 | 0.92 | 0.93 | 0.94 | 0.95 | 0.96 | 0.97 | 0.98 | 0.99 | Unity |
| 0.40 | 1.537 | 1.668 | 1.805 | 1.832 | 1.861 | 1.924 | 1.959 | 1.988 | 2.037 | 2.003 | 2.085 | 2.146 | 2.288 |
| 0.41 | 1.474 | 1.605 | 1.742 | 1.769 | 1.798 | 1.831 | 1.860 | 1.896 | 1.935 | 1.973 | 2.021 | 2.082 | 2.225 |
| 0.42 | 1.413 | 1.544 | 1.681 | 1.709 | 1.738 | 1.771 | 1.800 | 1.836 | 1.874 | 1.913 | 1.961 | 2.022 | 2.164 |
| 0.43 | 1.356 | 1.487 | 1.624 | 1.651 | 1.680 | 1.713 | 1.742 | 1.778 | 1.816 | 1.855 | 1.903 | 1.964 | 2.107 |
| 0.44 | 1.290 | 1.421 | 1.558 | 1.585 | 1.614 | 1.647 | 1.677 | 1.712 | 1.751 | 1.790 | 1.837 | 1.899 | 2.041 |
| 0.45 | 1.230 | 1.360 | 1.501 | 1.532 | 1.561 | 1.592 | 1.626 | 1.659 | 1.695 | 1.737 | 1.784 | 1.846 | 1.988 |
| 0.46 | 1.179 | 1.309 | 1.446 | 1.473 | 1.502 | 1.533 | 1.567 | 1.600 | 1.636 | 1.677 | 1.725 | 1.786 | 1.929 |
| 0.47 | 1.130 | 1.260 | 1.397 | 1.425 | 1.454 | 1.485 | 1.519 | 1.552 | 1.588 | 1.629 | 1.677 | 1.758 | 1.881 |
| 0.48 | 1.076 | 1.206 | 1.343 | 1.370 | 1.400 | 1.430 | 1.464 | 1.497 | 1.534 | 1.575 | 1.623 | 1.684 | 1.826 |
| 0.49 | 1.030 | 1.160 | 1.297 | 1.326 | 1.355 | 1.386 | 1.420 | 1.453 | 1.489 | 1.530 | 1.578 | 1.639 | 1.782 |
| 0.50 | 0.982 | 1.112 | 1.248 | 1.276 | 1.303 | 1.337 | 1.369 | 1.403 | 1.441 | 1.481 | 1.529 | 1.590 | 1.732 |
| 0.51 | 0.936 | 1.066 | 1.202 | 1.230 | 1.257 | 1.291 | 1.323 | 1.357 | 1.395 | 1.435 | 1.483 | 1.544 | 1.686 |
| 0.52 | 0.894 | 1.024 | 1.160 | 1.188 | 1.215 | 1.249 | 1.281 | 1.315 | 1.353 | 1.393 | 1.441 | 1.502 | 1.644 |
| 0.53 | 0.850 | 0.980 | 1.116 | 1.144 | 1.171 | 1.205 | 1.237 | 1.271 | 1.309 | 1.349 | 1.397 | 1.458 | 1.600 |
| 0.54 | 0.809 | 0.939 | 1.075 | 1.103 | 1.130 | 1.164 | 1.196 | 1.230 | 1.268 | 1.308 | 1.356 | 1.417 | 1.559 |
| 0.55 | 0.769 | 0.899 | 1.035 | 1.063 | 1.090 | 1.124 | 1.156 | 1.190 | 1.228 | 1.268 | 1.316 | 1.377 | 1.519 |
| 0.56 | 0.730 | 0.860 | 0.996 | 1.024 | 1.051 | 1.085 | 1.117 | 1.151 | 1.189 | 1.229 | 1.277 | 1.338 | 1.480 |
| 0.57 | 0.692 | 0.822 | 0.958 | 0.986 | 1.013 | 1.047 | 1.079 | 1.113 | 1.151 | 1.191 | 1.239 | 1.300 | 1.442 |
| 0.58 | 0.655 | 0.785 | 0.921 | 0.949 | 0.976 | 1.010 | 1.042 | 1.076 | 1.114 | 1.154 | 1.202 | 1.263 | 1.405 |
| 0.59 | 0.618 | 0.748 | 0.884 | 0.912 | 0.939 | 0.973 | 1.005 | 1.039 | 1.077 | 1.117 | 1.165 | 1.226 | 1.368 |
| 0.60 | 0.584 | 0.714 | 0.849 | 0.878 | 0.905 | 0.939 | 0.971 | 1.005 | 1.043 | 1.083 | 1.131 | 1.192 | 1.334 |
| 0.61 | 0.549 | 0.679 | 0.815 | 0.843 | 0.870 | 0.904 | 0.936 | 0.970 | 1.008 | 1.048 | 1.096 | 1.157 | 1.299 |
| 0.62 | 0.515 | 0.645 | 0.781 | 0.809 | 0.836 | 0.870 | 0.902 | 0.934 | 0.974 | 1.014 | 1.062 | 1.123 | 1.265 |
| 0.63 | 0.483 | 0.613 | 0.749 | 0.777 | 0.804 | 0.838 | 0.870 | 0.904 | 0.942 | 0.982 | 1.030 | 1.091 | 1.233 |
| 0.64 | 0.450 | 0.580 | 0.716 | 0.744 | 0.771 | 0.805 | 0.837 | 0.871 | 0.909 | 0.949 | 0.997 | 1.058 | 1.200 |
| 0.65 | 0.419 | 0.549 | 0.685 | 0.713 | 0.740 | 0.774 | 0.806 | 0.840 | 0.878 | 0.918 | 0.966 | 1.027 | 1.169 |
| 0.66 | 0.388 | 0.518 | 0.654 | 0.682 | 0.709 | 0.743 | 0.775 | 0.809 | 0.847 | 0.887 | 0.935 | 0.996 | 1.138 |
| 0.67 | 0.358 | 0.488 | 0.624 | 0.652 | 0.679 | 0.713 | 0.745 | 0.779 | 0.817 | 0.857 | 0.905 | 0.966 | 1.108 |
| 0.68 | 0.329 | 0.459 | 0.595 | 0.623 | 0.650 | 0.684 | 0.716 | 0.750 | 0.788 | 0.828 | 0.876 | 0.937 | 1.079 |
| 0.69 | 0.299 | 0.429 | 0.565 | 0.593 | 0.620 | 0.654 | 0.686 | 0.720 | 0.758 | 0.798 | 0.840 | 0.907 | 1.049 |
| 0.70 | 0.270 | 0.400 | 0.536 | 0.564 | 0.591 | 0.625 | 0.657 | 0.691 | **0.729** | 0.769 | 0.811 | 0.878 | 1.020 |
| 0.71 | 0.242 | 0.372 | 0.508 | 0.536 | 0.563 | 0.597 | 0.629 | 0.663 | 0.701 | 0.741 | 0.783 | 0.850 | 0.992 |
| 0.72 | 0.213 | 0.343 | 0.479 | 0.507 | 0.534 | 0.568 | 0.600 | 0.634 | 0.672 | 0.712 | 0.754 | 0.821 | 0.963 |
| 0.73 | 0.186 | 0.316 | 0.452 | 0.480 | 0.507 | 0.541 | 0.573 | 0.607 | 0.645 | 0.685 | 0.727 | 0.794 | 0.936 |
| 0.74 | 0.159 | 0.289 | 0.425 | 0.453 | 0.480 | 0.514 | 0.546 | 0.580 | 0.618 | 0.658 | 0.700 | 0.767 | 0.909 |
| 0.75 | 0.132 | 0.262 | 0.398 | 0.426 | 0.453 | 0.487 | 0.519 | 0.553 | 0.591 | 0.631 | 0.673 | 0.740 | 0.882 |
| 0.76 | 0.105 | 0.235 | 0.371 | 0.399 | 0.426 | 0.460 | 0.492 | 0.526 | 0.564 | 0.604 | 0.652 | 0.713 | 0.855 |
| 0.77 | 0.079 | 0.209 | 0.345 | 0.373 | 0.400 | 0.434 | 0.466 | 0.500 | 0.538 | 0.578 | 0.620 | 0.687 | 0.829 |
| 0.78 | 0.053 | 0.183 | 0.319 | 0.347 | 0.374 | 0.408 | 0.440 | 0.474 | 0.512 | 0.552 | 0.594 | 0.661 | 0.803 |
| 0.79 | 0.026 | 0.156 | 0.292 | 0.320 | 0.347 | 0.381 | 0.413 | 0.447 | 0.485 | 0.525 | 0.567 | 0.634 | 0.776 |
| 0.80 | - | 0.130 | 0.266 | 0.294 | 0.321 | 0.355 | 0.387 | 0.421 | 0.549 | 0.499 | 0.541 | 0.608 | 0.750 |
| 0.81 | - | 0.104 | 0.240 | 0.268 | 0.295 | 0.329 | 0.361 | 0.395 | 0.433 | 0.473 | 0.515 | 0.582 | 0.724 |
| 0.82 | - | 0.078 | 0.214 | 0.242 | 0.269 | 0.303 | 0.335 | 0.369 | 0.407 | 0.447 | 0.489 | 0.556 | 0.698 |
| 0.83 | - | 0.052 | 0.188 | 0.216 | 0.243 | 0.277 | 0.309 | 0.343 | 0.381 | 0.421 | 0.463 | 0.530 | 0.672 |
| 0.84 | - | 0.026 | 0.162 | 0.190 | 0.217 | 0.251 | 0.283 | 0.317 | 0.355 | 0.395 | 0.437 | 0.504 | 0.645 |
| 0.85 | - | - | 0.136 | 0.164 | 0.191 | 0.225 | 0.257 | 0.291 | 0.329 | 0.369 | 0.417 | 0.478 | 0.620 |
| 0.86 | - | - | 0.109 | 0.140 | 0.167 | 0.198 | 0.230 | 0.264 | 0.301 | 0.343 | 0.390 | 0.450 | 0.593 |
| 0.87 | - | - | 0.083 | 0.114 | 0.141 | 0.172 | 0.204 | 0.238 | 0.275 | 0.317 | 0.364 | 0.424 | 0.567 |
| 0.88 | | - | 0.054 | 0.085 | 0.112 | 0.143 | 0.175 | 0.209 | 0.246 | 0.288 | 0.335 | 0.395 | 0.538 |
| 0.89 | - | - | 0.028 | 0.059 | 0.086 | 0.117 | 0.149 | 0.183 | 0.230 | 0.262 | 0.309 | 0.369 | 0.512 |
| 0.90 | - | - | - | 0.031 | 0.058 | 0.089 | 0.121 | 0.155 | 0.192 | 0.234 | 0.281 | 0.341 | 0.484 |
| 0.91 | - | - | - | - | 0.027 | 0.058 | 0.090 | 0.124 | 0.161 | 0.203 | 0.250 | 0.310 | 0.453 |
| 0.92 | - | - | - | - | - | 0.031 | 0.063 | 0.097 | 0.134 | 0.176 | 0.223 | 0.283 | 0.426 |
| 0.93 | - | - | - | - | - | - | 0.032 | 0.066 | 0.103 | 0.145 | 0.192 | 0.252 | 0.395 |

## Capacitor ratings at different voltages

| kVAr at | | | | capacitance | capacitance | current in delta (A) | | | | line curent (A) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 525V | 440V | 415V | 400V | total (uF) | in delta (uF) | 525V | 440V | 415V | 400V | 525V | 440V | 415V | 400V |
| | 10 | 9 | 8 | 164 | 82 | | 8 | 7 | 7 | | 13 | 12 | 12 |
| | 15 | 13 | 12 | 247 | 123 | | 11 | 11 | 10 | | 20 | 19 | 18 |
| | 20 | 18 | 17 | 329 | 164 | | 15 | 14 | 14 | | 26 | 25 | 24 |
| | 25 | 22 | 21 | 411 | 206 | | 19 | 18 | 17 | | 33 | 31 | 30 |
| | 30 | 27 | 25 | 493 | 247 | | 23 | 21 | 21 | | 39 | 37 | 36 |
| | 40 | 36 | 33 | 658 | 329 | | 30 | 29 | 28 | | 52 | 50 | 48 |
| | 45 | 40 | 37 | 740 | 370 | | 34 | 32 | 31 | | 59 | 56 | 54 |
| | 50 | 44 | 41 | 822 | 411 | | 38 | 36 | 34 | | 66 | 62 | 60 |
| | 60 | 53 | 50 | 987 | 493 | | 45 | 43 | 41 | | 79 | 74 | 72 |
| | 75 | 67 | 62 | 1234 | 617 | | 57 | 54 | 52 | | 98 | 93 | 89 |
| | 80 | 71 | 66 | 1316 | 658 | | 61 | 57 | 55 | | 105 | 99 | 95 |
| | 90 | 80 | 74 | 1480 | 740 | | 68 | 64 | 62 | | 118 | 111 | 107 |
| | 100 | 89 | 83 | 1645 | 822 | | 76 | 71 | 69 | | 131 | 124 | 119 |
| | 120 | 107 | 99 | 1974 | 987 | | 91 | 86 | 83 | | 157 | 149 | 143 |
| | 125 | 111 | 103 | 2056 | 1028 | | 95 | 89 | 86 | | 164 | 155 | 149 |
| | 150 | 133 | 124 | 2467 | 1234 | | 114 | 107 | 103 | | 197 | 186 | 179 |
| | 175 | 156 | 145 | 2879 | 1439 | | 133 | 125 | 121 | | 230 | 217 | 209 |
| | 180 | 160 | 149 | 2961 | 1480 | | 136 | 129 | 124 | | 236 | 223 | 215 |
| | 200 | 178 | 165 | 3290 | 1645 | | 152 | 143 | 138 | | 262 | 248 | 239 |
| | 210 | 187 | 174 | 3454 | 1727 | | 159 | 150 | 145 | | 276 | 260 | 251 |
| | 225 | 200 | 186 | 3701 | 1851 | | 170 | 161 | 155 | | 295 | 278 | 268 |
| | 240 | 214 | 198 | 3948 | 1974 | | 182 | 171 | 165 | | 315 | 297 | 286 |
| | 250 | 222 | 207 | 4112 | 2056 | | 189 | 179 | 172 | | 328 | 309 | 298 |
| | 270 | 240 | 223 | 4441 | 2221 | | 205 | 193 | 186 | | 354 | 334 | 322 |
| | 275 | 245 | 227 | 4524 | 2262 | | 208 | 196 | 189 | | 361 | 340 | 328 |
| | 300 | 267 | 248 | 4935 | 2467 | | 227 | 214 | 207 | | 394 | 371 | 358 |
| | 325 | 289 | 269 | 5346 | 2673 | | 246 | 232 | 224 | | 426 | 402 | 388 |
| | 330 | 294 | 273 | 5428 | 2714 | | 250 | 236 | 227 | | 433 | 408 | 394 |
| | 350 | 311 | 289 | 5757 | 2879 | | 265 | 250 | 241 | | 459 | 433 | 418 |
| | 360 | 320 | 298 | 5922 | 2961 | | 273 | 257 | 248 | | 472 | 446 | 429 |
| | 375 | 334 | 310 | 6169 | 3084 | | 284 | 268 | 258 | | 492 | 464 | 447 |
| | 400 | 356 | 331 | 6580 | 3290 | | 303 | 286 | 275 | | 525 | 495 | 477 |
| | 420 | 374 | 347 | 6909 | 3454 | | 318 | 300 | 289 | | 551 | 520 | 501 |
| | 425 | 378 | 351 | 6991 | 3496 | | 322 | 304 | 293 | | 558 | 526 | 507 |
| | 450 | 400 | 372 | 7402 | 3701 | | 341 | 322 | 310 | | 590 | 557 | 537 |
| | 475 | 423 | 393 | 7814 | 3907 | | 360 | 339 | 327 | | 623 | 588 | 567 |
| | 480 | 427 | 397 | 7896 | 3948 | | 364 | 343 | 331 | | 630 | 594 | 573 |
| | 500 | 445 | 413 | 8225 | 4112 | | 379 | 357 | 344 | | 656 | 619 | 596 |
| | 600 | 534 | 496 | 9870 | 4935 | | 455 | 429 | 413 | | 787 | 743 | 716 |
| | 700 | 623 | 579 | 11515 | 5757 | | 530 | 500 | 482 | | 919 | 866 | 835 |
| 10 | 7 | 6 | 6 | 116 | 58 | 6 | 5 | 5 | 5 | 11 | 9 | 9 | 8 |
| 20 | 14 | 12 | 12 | 231 | 116 | 13 | 11 | 10 | 10 | 22 | 18 | 17 | 17 |
| 30 | 21 | 19 | 17 | 347 | 173 | 19 | 16 | 15 | 15 | 33 | 28 | 26 | 25 |
| 40 | 28 | 25 | 23 | 462 | 231 | 25 | 21 | 20 | 19 | 44 | 37 | 35 | 34 |
| 50 | 35 | 31 | 29 | 578 | 289 | 32 | 27 | 25 | 24 | 55 | 46 | 43 | 42 |
| 60 | 42 | 37 | 35 | 693 | 347 | 38 | 32 | 30 | 29 | 66 | 55 | 52 | 50 |
| 70 | 49 | 44 | 41 | 809 | 404 | 44 | 37 | 35 | 34 | 77 | 65 | 61 | 59 |
| 80 | 56 | 50 | 46 | 924 | 462 | 51 | 43 | 40 | 39 | 88 | 74 | 70 | 67 |
| 90 | 63 | 56 | 52 | 1040 | 520 | 57 | 48 | 45 | 44 | 99 | 83 | 78 | 75 |
| 100 | 70 | 62 | 58 | 1155 | 578 | 63 | 53 | 50 | 48 | 110 | 92 | 87 | 84 |
| 120 | 84 | 75 | 70 | 1387 | 693 | 76 | 64 | 60 | 58 | 132 | 111 | 104 | 101 |
| 140 | 98 | 87 | 81 | 1618 | 809 | 89 | 74 | 70 | 68 | 154 | 129 | 122 | 117 |
| 160 | 112 | 100 | 93 | 1849 | 924 | 102 | 85 | 80 | 77 | 176 | 147 | 139 | 134 |
| 180 | 126 | 112 | 104 | 2080 | 1040 | 114 | 96 | 90 | 87 | 198 | 166 | 156 | 151 |
| 200 | 140 | 125 | 116 | 2311 | 1155 | 127 | 106 | 100 | 97 | 220 | 184 | 174 | 168 |
| 220 | 155 | 137 | 128 | 2542 | 1271 | 140 | 117 | 110 | 106 | 242 | 203 | 191 | 184 |
| 240 | 169 | 150 | 139 | 2773 | 1387 | 152 | 128 | 120 | 116 | 264 | 221 | 209 | 201 |
| 260 | 183 | 162 | 151 | 3004 | 1502 | 165 | 138 | 130 | 126 | 286 | 240 | 226 | 218 |
| 280 | 197 | 175 | 163 | 3235 | 1618 | 178 | 149 | 141 | 135 | 308 | 258 | 243 | 235 |
| 300 | 211 | 187 | 174 | 3466 | 1733 | 190 | 160 | 151 | 145 | 330 | 276 | 261 | 251 |
| 320 | 225 | 200 | 186 | 3697 | 1849 | 203 | 170 | 161 | 155 | 352 | 295 | 278 | 268 |
| 400 | 281 | 250 | 232 | 4622 | 2311 | 254 | 213 | 201 | 193 | 440 | 369 | 348 | 335 |

Standard rated capacitor voltage 440V or 525V

**Notes:**
1. “capacitance total” refers to total calculated capacitance of the delta connected capacitor at rated capacitor voltage
2. “capacitance in delta” refers to calculated capacitance between any two terminals of delta wired capacitor
3. “line current” refers to calculated current at terminals of delta capacitor
4. calculated values may vary in practice due to tolerances allowed in manufacturing standards, and the effect of cables, discharge resistors, etc

## Capacitor selection regarding harmonics

| | Capacitor without reactor | Capacitor without reactor | Capacitor with reactor | Capacitor with reactor |
|---|---|---|---|---|
| | | Standard type | Standard class | Reinforced class |
| S.H / S.T | | 15-25% | 25-35% | 35-50% |
| THDU/ THDI | | ≤ 3% / ≤ 10% | ≤ 4% / ≤ 20% | ≤ 6% / ≤ 40% |

**Notes:**
S.H and S.T are given in kVA
S.H: weighted power of harmonic generators in kVA
S.T: power of the transformer HV/LV

## Servo combination selection chart

| Step 1: Select a Servo Drive | Step 2 : Select a Servo Motor | | | | | | | Step 3: Select Power Cable | | | | Step 4: Select Encoder Cable | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Servo Drive | A3/B3 Motor | OR | A2 Motor | OR | A3/B3 Motor + Brake IP67 | OR | A2 Motor + Brake | Power Cable A3/ B3 Motor IP67 | Power Cable A2 Motor | B3/A3 Power Cable + Brake IP67 | Power Cable + Brake A2 | Encoder Cable A3/ B3 IP67 | Encoder Cable A2 |
| ASD-B3A-0121-x | ECM-B3L-CM0401RJ1 | | ECMA-C10401RS | | | | | ACS3-CAPW5105 | ASD-ABPW0005 | | | ACS3-CAEN1105 | ASD-ABEN0005 + ACS3-CABDC2 |
| ASD-B3A-0421-x | ECM-B3M-CM0604RJ1 | | ECMA-C10604RS | | ECM-B3M-CM0604SJ1 | | | ACS3-CAPW5105 | ASD-ABPW0005 | ACS3-CAPW6105 | | ACS3-CAEN1105 | ASD-ABEN0005 + ACS3-CABDC2 |
| ASD-B3A-0721-x | ECM-B3M-CM0807RJ1 | | ECMA-C10807RS | | ECM-B3M-CM0807SJ1 | | ECMA-C10807SS | ACS3-CAPW5105 | ASD-ABPW0005 | ACS3-CAPW6105 | ASD-ABPW0105 | ACS3-CAEN1105 | ASD-ABEN0005 + ACS3-CABDC2 |
| ASD-B3A-1021-x | ECM-B3M-C21010RS1 | | ECMA-C11010RS | | | | ECMA-C11010SS | ACS3-CAPWA205 | ASD-CAPW1005 | | ASD-CAPW1105 | ACS3-CAENA105 | ASD-CAEN1005 + ACS3-CABDC2 |
| ASD-B3A-1521-x | ECM-B3M-E21315RS1 | | ECMA-E11315RS | | | | ECMA-E11315SS | ACS3-CAPWA205 | ASD-CAPW1005 | | ASD-CAPW1105 | ACS3-CAENA105 | ASD-CAEN1005 + ACS3-CABDC2 |
| ASD-A3-0121-x | ECM-B3L-CM0401RJ1 | | ECMA-C10401RS | | | | | ACS3-CAPW5105 | ASD-ABPW0005 | | | ACS3-CAEN1105 | ASD-ABEN0005 + ACS3-CAADC2 |
| ASD-A3-0421-x | ECM-B3M-CM0604RJ1 | | ECMA-C10604RS | | ECM-B3M-CM0604SJ1 | | | ACS3-CAPW5105 | ASD-ABPW0005 | ACS3-CAPW6105 | | ACS3-CAEN1105 | ASD-ABEN0005 + ACS3-CAADC2 |
| ASD-A3-0721-x | ECM-B3M-CM0807RJ1 | | ECMA-C10807RS | | ECM-B3M-CM0807SJ1 | | ECMA-C10807SS | ACS3-CAPW5105 | ASD-ABPW0005 | ACS3-CAPW6105 | ASD-ABPW0105 | ACS3-CAEN1105 | ASD-ABEN0005 + ACS3-CAADC2 |
| ASD-A3-1021-x | ECM-B3M-C21010RS1 | | ECMA-C11010RS | | | | ECMA-C11010SS | ACS3-CAPWA205 | ASD-CAPW1005 | | ASD-CAPW1105 | ACS3-CAENA105 | ASD-CAEN1005 + ACS3-CAADC2 |
| ASD-A3-1521-x | ECM-B3M-E21315RS1 | | ECMA-E11315RS | | | | ECMA-E11315SS | ACS3-CAPWA205 | ASD-CAPW1005 | | ASD-CAPW1105 | ACS3-CAENA105 | ASD-CAEN1005 + ACS3-CAADC2 |
| ASD-A3-2043-x | ECM-B3M-K21320RS1 | | | | | | ECMA-K11320SS | ACS3-CAPWA205 | | | ASD-CAPW1305 | ACS3-CAENA105 | ASD-CAEN1005 + ACS3-CAADC2 |
| ASD-A3-3043-x | ECM-B3M-L21830RS1 | | | | | | ECMA-L11830SS | ACS3-CAPWC405 | | | ASD-CAPW2305 | ACS3-CAENA105 | ASD-CAEN1005 + ACS3-CAADC2 |
| ASD-A3-4543-x | ECM-B3M-L21845RS1 | | | | | | ECMA-L11845SS | ACS3-CAPWC405 | | | ASD-CAPW2305 | ACS3-CAENA105 | ASD-CAEN1005 + ACS3-CAADC2 |
| ASD-A3-5543-x | ECM-B3M-L21855R31 | | | | | | | ACS3-CAPWE605 | | | | ACS3-CAENA105 | |
| ASD-A3-7543-x | ECM-B3M-LA1875R31 | | | | | | | ACS3-CAPWE605 | | | | ACS3-CAENA105 | |
| ASD-A3R-1B43-x | ECM-B3M-LA221BR31 | | | | | | | ACS3-CAPWE605 | | | | ACS3-CAENA105 | |
| ASD-A3R-1F43-x | ECM-B3M-LA221FR31 | | | | | | | ACS3-CAPWE605 | | | | ACS3-CAENA105 | |
| ASD-A2-0121-M | | | ECMA-C10401RS | | | | | | ASD-ABPW0005 | | | | ASD-ABEN0005 |
| ASD-A2-0421-M | | | ECMA-C10604RS | | | | | | ASD-ABPW0005 | | | | ASD-ABEN0005 |
| ASD-A2-0721-M | | | ECMA-C10807RS | | | | ECMA-C10807SS | | ASD-ABPW0005 | | ASD-ABPW0105 | | ASD-ABEN0005 |
| ASD-A2-1021-M | | | ECMA-C11010RS | | | | ECMA-C11010SS | | ASD-CAPW1005 | | ASD-CAPW1105 | | ASD-CAEN1005 |
| ASD-A2-1521-M | | | ECMA-E11315RS | | | | ECMA-E11315SS | | ASD-CAPW1005 | | ASD-CAPW1105 | | ASD-CAEN1005 |

## TEKNOMEGA TOP busbar support fault level chart

| | |
|---|---|
| **Icc pk** | Short-circuit current peak value expressed in kA |
| **Icc rms** | Effective value of short-circuit, duration equal to 1 second, expressed in kA |

| Icc pk (kA) | 53 kA | | | | 74 kA | | | | | 110 kA | | | | | 143 kA | | | | | 165 kA | | | 187 kA | | | 220 kA | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Icc rms (kA) | 25 kA | | | | 35 kA | | | | | 50 kA | | | | | 65 kA | | | | | 75 kA | | | 85 kA | | | 100 kA | | |
| Space between phases (mm) | 50 | 75 | 100 | 125 | 50 | 75 | 100 | 125 | 150 | 50 | 75 | 100 | 125 | 150 | 50 | 75 | 100 | 125 | 150 | 100 | 125 | 150 | 100 | 125 | 150 | 100 | 125 | 150 |
| **TOP 1010 (Top 2/5TN)** | | | | | | | | | | | **(1 x 5mm bar per phase)** | | | | | | | | | | | | | | | | | |
| 30 x 5 | **225** | 280 | 320 | 360 | **160** | 200 | 230 | 260 | - | **110** | 135 | 155 | 175 | - | - | 100 | 120 | 130 | - | - | - | - | - | - | - | - | - | - |
| 40 x 5 | **265** | 320 | 370 | 415 | **190** | 230 | 265 | 300 | - | **125** | 155 | 180 | 200 | - | - | 120 | 135 | 155 | - | - | - | - | - | - | - | - | - | - |
| 50 x 5 | **295** | 360 | 415 | 465 | **210** | 260 | 300 | 335 | - | **140** | 175 | 200 | 225 | - | **110** | 130 | 155 | 170 | - | - | - | - | - | - | - | - | - | - |
| 60 x 5 | **330** | 405 | 470 | 525 | **235** | 290 | 335 | 375 | - | **160** | 195 | 225 | 250 | - | **120** | 150 | 170 | 195 | - | - | - | - | - | - | - | - | - | - |
| 80 x 5 | **370** | 455 | 530 | 585 | **265** | 325 | 375 | 420 | - | **180** | 220 | 250 | 285 | - | **135** | 170 | 195 | 220 | - | - | - | - | - | - | - | - | - | - |
| **TOP 1010 (Top 2/5TN)** | | | | | | | | | | | **(2 x 5mm bars per phase)** | | | | | | | | | | | | | | | | | |
| 30 x 5 | **320** | 390 | 450 | 510 | **230** | 280 | 320 | 360 | - | **150** | 190 | 220 | 240 | - | **120** | 150 | 170 | 190 | - | - | - | - | - | - | - | - | - | - |
| 40 x 5 | **370** | 450 | 520 | 580 | **260** | 320 | 370 | 420 | - | **180** | 220 | 250 | 280 | - | **140** | 170 | 190 | 220 | - | - | - | - | - | - | - | - | - | - |
| 50 x 5 | **410** | 510 | 580 | 650 | **300** | 360 | 420 | 470 | - | **200** | 240 | 280 | 310 | - | **150** | 190 | 220 | 240 | - | - | - | - | - | - | - | - | - | - |
| 60 x 5 | **460** | 570 | 660 | 730 | **330** | 410 | 470 | 520 | - | **220** | 270 | 320 | 350 | - | **170** | 210 | 240 | 270 | - | - | - | - | - | - | - | - | - | - |
| 80 x 5 | **520** | 640 | 740 | 830 | **370** | 460 | 530 | 590 | - | **250** | 310 | 360 | 400 | - | **165** | 240 | 250 | 310 | - | - | - | - | - | - | - | - | - | - |
| **TOP 1025 (Top 1/10T)** | | | | | | | | | | | **(1 x 10mm bars per phase)** | | | | | | | | | | | | | | | | | |
| 30 x 10 | **455** | 555 | 640 | 720 | **325** | 400 | 460 | 520 | - | **220** | 270 | 310 | 350 | - | **170** | 205 | 240 | 265 | - | - | - | - | - | - | - | - | - | - |
| 40 x 10 | **525** | 645 | 745 | 835 | **375** | 460 | 530 | 600 | - | **255** | 310 | 360 | 400 | - | **195** | 240 | 275 | 310 | - | - | - | - | - | - | - | - | - | - |
| 50 x 10 | **590** | 720 | 830 | 935 | **420** | 515 | 595 | 665 | - | **285** | 350 | 400 | 450 | - | **200** | 255 | 310 | 345 | - | - | - | - | - | - | - | - | - | - |
| 60 x 10 | **645** | 790 | 900 | 900 | **460** | 565 | 650 | 730 | - | **310** | 380 | 490 | 490 | - | **200** | 255 | 340 | 380 | - | - | - | - | - | - | - | - | - | - |
| 80 x 10 | **745** | 900 | 900 | 900 | **535** | 650 | 750 | 845 | - | **335** | 440 | 565 | 565 | - | **200** | 300 | 390 | 435 | - | - | - | - | - | - | - | - | - | - |
| 100 x 10 | **830** | 900 | 900 | 900 | **590** | 730 | 840 | 900 | - | **335** | 490 | 635 | 635 | - | **200** | 300 | 400 | 490 | - | - | - | - | - | - | - | - | - | - |
| 120 x 10 | **900** | 900 | 900 | 900 | **650** | 790 | 900 | 900 | - | **335** | 500 | 690 | 690 | - | **200** | 300 | 400 | 500 | - | - | - | - | - | - | - | - | - | - |

| Icc pk (kA) | 53 kA | | | 74 kA | | | | 110 kA | | | | 143 kA | | | | | 165 kA | | | | 187 kA | | | | 220 kA | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Icc rms (kA) | 25 kA | | | 35 kA | | | | 50 kA | | | | 65 kA | | | | | 75 kA | | | | 85 kA | | | | 100 kA | | | |
| Space between phases (mm) | 75 | 100 | 125 | 75 | 100 | 125 | 150 | 75 | 100 | 125 | 150 | 75 | 100 | 125 | 150 | 175 | 100 | 125 | 150 | 175 | 100 | 125 | 150 | 175 | 100 | 125 | 150 | 175 |
| **TOP 1040 (Top 2/10TN)** | | | | | | | | | | | | **(2 x 10mm bars per phase)** | | | | | | | | | | | | | | | | |
| 30 x 10 | **785** | 900 | 900 | **560** | 650 | 720 | 790 | **380** | 440 | 490 | 530 | **270** | 335 | 370 | 410 | - | **240** | 265 | - | - | **205** | 270 | 320 | 310 | - | - | - | - |
| 40 x 10 | **900** | 900 | 900 | **650** | 750 | 840 | 900 | **440** | 500 | 560 | 620 | **270** | 365 | 430 | 470 | - | **275** | 310 | - | - | **205** | 270 | 340 | 320 | - | - | - | - |
| 50 x 10 | **900** | 900 | 900 | **720** | 840 | 900 | 900 | **460** | 560 | 630 | 690 | **270** | 365 | 455 | 530 | - | **310** | 345 | - | - | **205** | 270 | 340 | 320 | - | - | - | - |
| 60 x 10 | **900** | 900 | 900 | **790** | 900 | 900 | 900 | **460** | 610 | 690 | 750 | **270** | 365 | 455 | 545 | - | **340** | 380 | - | - | **205** | 270 | 340 | 320 | - | - | - | - |
| 80 x 10 | **900** | 900 | 900 | **900** | 900 | 900 | 900 | **460** | 610 | 770 | 870 | **270** | 365 | 455 | 545 | - | **390** | 435 | - | - | **205** | 270 | 340 | 320 | - | - | - | - |
| 100 x 10 | **900** | 900 | 900 | **900** | 900 | 900 | 900 | **460** | 610 | 770 | 900 | **270** | 365 | 455 | 545 | - | **400** | 490 | - | - | **205** | 270 | 340 | 320 | - | - | - | - |
| 120 x 10 | **900** | 900 | 900 | **900** | 900 | 900 | 900 | **460** | 610 | 770 | 900 | **270** | 365 | 455 | 545 | - | **400** | 500 | - | - | **205** | 270 | 340 | 320 | - | - | - | - |
| **TOP 1050 (Top 3/10TN)** | | | | | | | | | | | | **(3 x 10mm bars per phase)** | | | | | | | | | | | | | | | | |
| 30 x 10 | - | 900 | 900 | - | 790 | 890 | 900 | - | 530 | 600 | 650 | - | 410 | 460 | 500 | 540 | **350** | 400 | 440 | 470 | **275** | 345 | 380 | 420 | - | - | - | - |
| 40 x 10 | - | 900 | 900 | - | 900 | 900 | 900 | - | 620 | 690 | 750 | - | 470 | 530 | 580 | 630 | **350** | 440 | 500 | 540 | **275** | 345 | 440 | 480 | - | - | - | - |
| 50 x 10 | - | 900 | 900 | - | 900 | 900 | 900 | - | 690 | 770 | 840 | - | 470 | 590 | 650 | 700 | **350** | 440 | 530 | 610 | **275** | 345 | 415 | 480 | - | - | - | - |
| 60 x 10 | - | 900 | 900 | - | 900 | 900 | 900 | - | 750 | 840 | 900 | - | 470 | 590 | 710 | 770 | **350** | 440 | 530 | 620 | **275** | 345 | 415 | 480 | - | - | - | - |
| 80 x 10 | - | 900 | 900 | - | 900 | 900 | 900 | - | 870 | 900 | 900 | - | 470 | 590 | 710 | 825 | **350** | 440 | 530 | 620 | **275** | 345 | 415 | 480 | - | - | - | - |
| 100 x 10 | - | 900 | 900 | - | 900 | 900 | 900 | - | 900 | 900 | 900 | - | 470 | 590 | 710 | 825 | **350** | 440 | 530 | 620 | **275** | 345 | 415 | 480 | - | - | - | - |
| 120 x 10 | - | 900 | 900 | - | 900 | 900 | 900 | - | 900 | 900 | 900 | - | 470 | 590 | 710 | 825 | **350** | 440 | 530 | 620 | **275** | 345 | 415 | 480 | - | - | - | - |

## TOP junior compact busbar supports

| Icc pk (kA) | 53 kA | 74 kA | 110 kA | 132 kA |
|---|---|---|---|---|
| Icc rms (kA) | 25 kA | 35 kA | 50 kA | 60 kA |
| Space between phases (mm) | 70 mm | | | |
| **TOP Junior 1/10 (1 x 10mm bar per phase)** | | | | |
| 30 x 10 | 540 | 385 | 260 | 200 |
| 40 x 10 | 610 | 445 | 285 | 200 |
| 50 x 10 | 695 | 495 | 285 | 200 |
| 60 x 10 | 760 | 545 | 285 | 200 |
| 80 x 10 | 870 | 630 | 285 | 200 |

| Icc pk (kA) | 53 kA | 74 kA | 110 kA | 132 kA |
|---|---|---|---|---|
| Icc rms (kA) | 25 kA | 35 kA | 50 kA | 60 kA |
| Space between phases (mm) | 70 mm | | | |
| **TOP Junior 2/5 (1 x 5mm bar per phase)** | | | | |
| 30 x 10 | 270 | 190 | 130 | 105 |
| 40 x 10 | 310 | 220 | 150 | 125 |
| 50 x 10 | 350 | 250 | 165 | 129 |
| 60 x 10 | 380 | 275 | 180 | 129 |
| 80 x 10 | 390 | 310 | 210 | 129 |

| Icc pk (kA) | 53 kA | 74 kA | 110 kA | 132 kA |
|---|---|---|---|---|
| Icc rms (kA) | 25 kA | 35 kA | 50 kA | 60 kA |
| Space between phases (mm) | 70 mm | | | |
| **TOP Junior 2/5 (2 x 5mm bar per phase)** | | | | |
| 30 x 10 | 380 | 270 | 180 | 150 |
| 40 x 10 | 440 | 310 | 210 | 165 |
| 50 x 10 | 490 | 350 | 235 | 165 |
| 60 x 10 | 540 | 385 | 240 | 165 |
| 80 x 10 | 620 | 445 | 240 | 165 |

## Socomec busbar support fault levels

Adhering to the maximum distances between two supports ensures the busbar supports are able to withstand the given short circuit current values. At these values, deformation of the copper bars may occur. These deformations are permitted by standard IEC 60439-1 as long as they adhere to the insulation distances.

### SBC 10 Busbar supports

| Peak Isc | | 15kA | 24kA | 48kA | 63kA | 82kA | 114kA | space between phases | in cabinet 45°C bars 80°C |
|---|---|---|---|---|---|---|---|---|---|
| Rms Isc | | 9kA | 12kA | 23kA | 30kA | 39kA | 52kA | | |
| Bar (mm) | No. | Max. L (distance between centres of sets of supports in mm) | | | | | | d (mm) | Iz (A) |
| 25 x 10 | 1 | 1000 | 1000 | 500 | 375 | 275 | 200 | 65 | - |
| 25 x 10 | 2 | 1000 | 1000 | 525 | 400 | 300 | 200 | 90 | 850 |
| 40 x 10 | 1 | 1000 | 1000 | 650 | 475 | 375 | 250 | 65 | 700 |
| 40 x 10 | 2 | 1000 | 1000 | 700 | 525 | 400 | 275 | 90 | 1250 |
| 50 x 10 | 1 | 1000 | 1000 | 725 | 550 | 425 | 300 | 65 | 850 |
| 50 x 10 | 2 | 1000 | 1000 | 800 | 600 | 475 | 325 | 90 | 1550 |
| 60 x 10 | 1 | 1000 | 1000 | 800 | 625 | 475 | 325 | 65 | 1000 |
| 60 x 10 | 2 | 1000 | 1000 | 900 | 675 | 525 | 350 | 90 | 1800 |
| 80 x 10 | 1 | 1000 | 1000 | 975 | 725 | 550 | 400 | 65 | 1300 |
| 80 x 10 | 2 | 1000 | 1000 | 1000 | 850 | 650 | 350 | 90 | 2300 |
| 100 x 10 | 1 | 1000 | 1000 | 1000 | 850 | 650 | 400 | 65 | 1550 |
| 100 x 10 | 2 | 1000 | 1000 | 1000 | 975 | 675 | 350 | 90 | 2750 |

### SBC ER Busbar supports

| Peak Isc | | 63kA | 82kA | 114kA | 152kA | 165kA | 187kA | space between phases | in cabinet 45°C bars 80°C |
|---|---|---|---|---|---|---|---|---|---|
| Rms Isc | | 30kA | 39kA | 52kA | 69kA | 75kA | 85kA | | |
| Bar (mm) | No. | Max. L (distance between centres of sets of supports in mm) | | | | | | d (mm) | Iz (A) |
| 50 x 5 | 1 | 600 | 500 | 325 | 175 | 150 | - | 70 | 600 |
| 50 x 5 | 2 | 600 | 500 | 325 | 175 | 150 | 100 | 70 | 1050 |
| 60 x 5 | 1 | 625 | 525 | 350 | 200 | 175 | - | 70 | 700 |
| 60 x 5 | 2 | 625 | 525 | 350 | 200 | 175 | 125 | 70 | 1250 |
| 80 x 5 | 1 | 625 | 525 | 350 | 200 | 175 | 125 | 70 | 900 |
| 80 x 5 | 2 | 625 | 525 | 350 | 200 | 175 | 125 | 70 | 1550 |
| 100 x 5 | 1 | 650 | 550 | 375 | 225 | 200 | 175 | 70 | 1100 |
| 100 x 5 | 2 | 650 | 550 | 375 | 225 | 200 | 175 | 70 | 1900 |
| 50 x 10 | 1 | 1000 | 1000 | 650 | 250 | 200 | 150 | 70 | 850 |
| 50 x 10 | 2 | 1000 | 1000 | 650 | 250 | 200 | 150 | 70 | 1550 |
| 60 x 10 | 1 | 1000 | 1000 | 675 | 275 | 225 | 175 | 70 | 1050 |
| 60 x 10 | 2 | 1000 | 1000 | 675 | 275 | 225 | 175 | 70 | 1850 |
| 80 x 10 | 1 | 1000 | 1000 | 700 | 300 | 250 | 175 | 70 | 1300 |
| 80 x 10 | 2 | 1000 | 1000 | 700 | 300 | 250 | 175 | 70 | 2300 |
| 100 x 10 | 1 | 1000 | 1000 | 725 | 325 | 275 | 175 | 70 | 1550 |
| 100 x 10 | 2 | 1000 | 1000 | 725 | 325 | 275 | 175 | 70 | 2750 |
| 120 x 10 | 1 | 1000 | 1000 | 725 | 350 | 275 | 200 | 70 | 1900 |
| 120 x 10 | 2 | 1000 | 1000 | 725 | 350 | 275 | 200 | 70 | 3350 |

### SBE 44 Busbar supports

| Peak Isc | | 10kA | 15kA | 24kA | 38kA | 48kA | 63kA | space between phases | in cabinet 45°C bars 80°C |
|---|---|---|---|---|---|---|---|---|---|
| Rms Isc | | 6kA | 9kA | 12kA | 19kA | 23kA | 30kA | | |
| Bar (mm) | No. | Max. L (distance between centres of sets of supports in mm) | | | | | | d (mm) | Iz (A) |
| 15 x 3 | 1 | 950 | 625 | 400 | 250 | 175 | - | 35 | 160 |
| 15 x 5 | 1 | 1000 | 825 | 500 | 300 | 175 | - | 35 | 220 |
| 20 x 5 | 1 | 1000 | 1000 | 675 | 300 | 175 | - | 35 | 280 |
| 20 x 8 | 1 | 1000 | 1000 | 775 | 300 | 175 | - | 35 | 370 |
| 32 x 5 | 1 | 1000 | 1000 | 675 | 250 | 170 | - | 35 | 410 |

### SBP 44 Busbar supports

| Peak Isc | | 10kA | 15kA | 24kA | 48kA | 63kA | 82kA | space between phases | in cabinet 45°C bars 80°C |
|---|---|---|---|---|---|---|---|---|---|
| Rms Isc | | 6kA | 9kA | 12kA | 23kA | 30kA | 39kA | | |
| Bar (mm) | No. | Max. L (distance between centres of sets of supports in mm) | | | | | | d (mm) | Iz (A) |
| 20 x 5 | 1 | 1000 | 1000 | 800 | 350 | 200 | 125 | 50 | 280 |
| 25 x 5 | 1 | 1000 | 1000 | 1000 | 350 | 200 | 125 | 50 | 330 |
| 32 x 5 | 1 | 1000 | 1000 | 1000 | 350 | 200 | 120 | 50 | 390 |
| 25 x 10 | 1 | 1000 | 1000 | 1000 | 350 | 200 | 125 | 50 | 500 |
| 30 x 10 | 1 | 1000 | 1000 | 1000 | 350 | 200 | 120 | 50 | 580 |
| 32 x 10 | 1 | 1000 | 1000 | 1000 | 350 | 200 | 120 | 50 | 610 |

**SANS 10142-1:2017** Edition 2
Single-core PVC insulated cables, unarmoured, with or without sheath.
(SANS 1507-3) Current-carrying capacity copper conductors.
Installation method 3 *(clipped direct)*.

## Cable current ratings

| Conventional rated thermal current (A) | Copper conductor section | | | |
|---|---|---|---|---|
| | Cable | | Busbars | |
| | No. | Section $(mm)^2$ | No. | Dim (mm) |
| 15 A | 1x | 1.0 | - | - |
| 20 A | 1x | 1.5 | - | - |
| 27 A | 1x | 2.5 | - | - |
| 37 A | 1x | 4.0 | - | - |
| 47 A | 1x | 6.0 | - | - |
| 65 A | 1x | 10 | - | - |
| 87 A | 1x | 16 | - | - |
| 115 A | 1x | 25 | - | - |
| 140 A | 1x | 35 | - | - |
| 180 A | 1x | 50 | 1 | 15 x 5 |
| 235 A | 1x | 70 | 1 | 20 x 5 |
| 280 A | 1x | 95 | - | - |
| 330 A | 1x | 120 | 1 | 30 x 5 |
| 380 A | 1x | 150 | - | - |
| 433 A | 1x | 185 | - | - |
| 510 A | 1x | 240 | - | - |
| 590 A | 2x | 150 | - | - |
| 630 A | 2x | 185 | 1 | 30 x 10 |
| 740 A | 2x | 240 | 1 | 40 x 10 |
| 800 A | - | - | 1 | 40 x 10 |
| 1000 A | - | - | 1 | 50 x 10 |
| 1250 A | - | - | 1 | 60 x 10 |
| 1600 A | - | - | 1 | 80 x 10 |
| 2000 A | - | - | 1 | 100 X 10 |

## WÖHNER busbar support fault level chart

| Icc kA pk | | 42 | 52.7 | 63 | 73.5 | 84 |
|---|---|---|---|---|---|---|
| Icc kA eff. 1 s | | 20 | 25 | 30 | 35 | 40 |
| 01485/01495/01356 | | D = 60 (mm) | | | | |
| E | 20 X 5 | 400 | 250 | - | - | - |
| | 30 x 5 | 600 | 350 | 250 | - | - |
| | 20 x 10 | 470 | 300 | - | - | - |
| | 30 x 10 | 650 | 600 | 450 | 300 | 250 |
| 01231("H" Profile) | | D = 60 (mm) | | | | |
| | "H" Profile | 1100 | 1000 | 770 | 700 | 550 |
| 01479 | | D = 100 (mm) | | | | |
| E | 30 X 10 | 600 | 400 | - | - | - |
| | 40 x 10 | 600 | 500 | - | - | - |
| | 50 x 10 | 600 | 500 | - | - | - |
| | 60 x 10 | 650 | 600 | 600 | - | - |
| 01230 | | D = 185 (mm) | | | | |
| E | 60 X 10 | 600 | 600 | 500 | - | - |
| | 80 x 10 | 600 | 600 | 500 | - | - |
| | 100 x 10 | 600 | 600 | 500 | - | - |
| | 120 x 10 | 600 | 600 | 500 | - | - |
| | "H" Profile | 600 | 600 | 600 | 600 | 600 |

## Current rating of non-insulated flat busbar

A correction factor complying with DIN 43671 can be determined for **flat busbars** using the table below. The factor is dependant on the relevant ambient temperature. This correction factor should be taken into account when conditions change and loading is continuous.

| | busbar temperature | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 50°C | 55°C | 60°C | 65°C | 70°C | 75°C | 80°C | 85°C | 90°C | 100°C | 110°C | 120°C |
| air temp | correction factor $k_2$ | | | | | | | | | | | |
| 20°C | 1.00 | 1.15 | 1.20 | 1.25 | 1.35 | 1.42 | 1.48 | 1.55 | 1.62 | 1.70 | 1.80 | 1.90 |
| 25°C | 0.95 | 1.05 | 1.1 | 1.20 | 1.25 | 1.35 | 1.40 | 1.45 | 1.55 | 1.65 | 1.75 | 1.85 |
| 30°C | 0.80 | 0.92 | 1.0 | 1.10 | 1.15 | 1.25 | 1.32 | 1.40 | 1.45 | 1.55 | 1.70 | 1.80 |
| 35°C | 0.70 | 0.80 | 0.90 | 1.00 | 1.10 | 1.15 | 1.25 | 1.30 | 1.40 | 1.50 | 1.60 | 1.70 |
| 40°C | 0.55 | 0.66 | 0.80 | 0.90 | 1.00 | 1.10 | 1.15 | 1.25 | 1.30 | 1.45 | 1.55 | 1.65 |
| 45°C | 0.40 | 0.52 | 0.65 | 0.75 | 0.90 | 0.95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.50 | 1.60 |
| 50°C | 0.30 | 0.35 | 0.50 | 0.65 | 0.80 | 0.90 | 1.00 | 1.05 | 1.15 | 1.30 | 1.40 | 1.55 |
| 55°C | – | – | 0.35 | 0.55 | 0.65 | 0.75 | 0.90 | 0.95 | 1.05 | 1.20 | 1.35 | 1.45 |
| 60°C | – | – | – | 0.30 | 0.50 | 0.65 | 0.75 | 0.85 | 0.95 | 1.10 | 1.25 | 1.40 |

*30 x 10 busbar can under normal operating conditions be loaded with 630A. If the load is increased to 800 A - it represents a 1.27 increase factor. With 35°C ambient, one can expect between 80°C and 85°C busbar temperature*

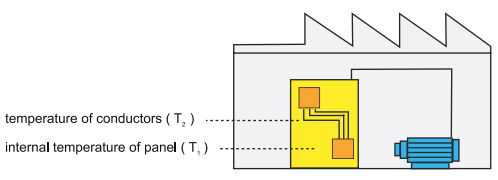
## Δ T (°K) calculation

eg.

$T_1$ ( internal panel temperature ) 50°C
$T_2$ ( temperature of conductor ) 100°C

temperature rise of conductor = $T_2$ - $T_1$ = Δ T(°K)

eg. $T_2$ (100°C) - $T_1$ (50°C) = select from 50°K



## IP rating chart

The system provides a classification from solid objects to liquids in relation to electrical equipment and enclosures.
IP rating consists of **2 codes** (i.e. IP65).

| First digit | Protection against solid objects | Second digit | Protection against moisture |
|---|---|---|---|
| 0 | No protection | 0 | No protection |
| 1 | Protection against objects >50mm | 1 | Protection against vertically dripping water |
| 2 | Protection against objects >12.5mm | 2 | Protection against spraying water ±15° from vertical |
| 3 | Protection against objects >2.5mm | 3 | Protection against spraying water ±60° from vertical |
| 4 | Protection against objects 1.0mm | 4 | Protection against spraying water ±90° from vertical |
| 5 | Dust protection (limited ingress) | 5 | Protection against low pressure water jets |
| 6 | Dust tight protection | 6 | Protection against high pressure water jets |
| | | 7 | Protection against temporary immersion (15cm and 1cm) |
| | | 8 | Protection against continuous immersion under pressure |

NB: IP69K refers to the product ability to resist ingress of high temperature (steam) and high pressure washdowns normally used to sanitise equipment.

## IK rating chart

Degree of protection against mechanical wear and tear.
IK rating consists of **2 codes** (i.e. IK06).

| Code | | Height (cm) | Impact Energy (J) |
|---|---|---|---|
| 01 | 0.2kg | 7.5 | 0.15 |
| 02 | | 10 | 0.20 |
| 03 | | 17.5 | 0.35 |
| 04 | | 25 | 0.50 |
| 05 | | 35 | 0.70 |
| 06 | | 20 | 1 |
| 07 | 0.5kg | 40 | 2 |
| 08 | 1.7kg | 29.5 | 5 |
| 09 | 5kg | 20 | 10 |
| 10 | | 40 | 20 |

## Conversion tables

| Length | From: | to | meter | foot | inch |
|---|---|---|---|---|---|
| | 1 meter ( m ) | | 1 | 3.281 | 39.37 |
| | 1 inch ( in / " ) | | 0.0254 | 0.08378 | 1 |
| | 1 foot ( ft / ' ) | | 0.3048 | 1 | 12 |
| **Weight** | **From:** | **to** | **kg** | **lb** | **oz** |
| | 1 kilogram ( kg ) | | 1 | 2.205 | 35.27 |
| | 1 pound ( 1b ) | | 0.454 | 1 | 16 |
| | 1 ounce ( oz ) | | 0.028 | 0.0625 | 1 |
| **Pressure** | **From:** | **to** | **n/m²** | **bar** | **PSI** |
| | 1 n/m² or pascal | | 1 | 0.00001 | 0.000145 |
| | 1 bar | | 100000 | 1 | 14.504 |
| | 1 PSI | | 6849.76 | 0.0689476 | 1 |

## Power Factor Correction

Individual motor compensation

| Capacitor rating in kVAr | | | To improve P.F to 0.95 or better at all loads | | | |
|---|---|---|---|---|---|---|
| motor kW | 2 pole 3000rpm | 4 pole 1500rpm | 6 pole 1000rpm | 8 pole 750rpm | 10 pole 600rpm | 12 pole 500rpm |
| 1.5 | 0.5 | 1 | 1 | 1.5 | 1.5 | 1.5 |
| 2.2 | 0.75 | 1 | 1 | 1.5 | 1.5 | 1.5 |
| 4 | 1.0 | 1.5 | 2 | 2.5 | 3 | 3 |
| 5.5 | 1.5 | 2 | 3 | 3.5 | 4 | 4 |
| 7.5 | 2.5 | 3 | 3.5 | 4 | 5 | 5 |
| 11 | 4 | 4 | 4.5 | 6 | 6 | 6 |
| 15 | 5 | 5 | 6 | 8 | 8 | 10 |
| 18.5 | 6 | 6 | 7 | 8 | 10 | 12 |
| 22 | 7 | 8 | 9 | 10 | 12 | 14 |
| 30 | 9 | 10 | 11 | 14 | 14 | 16 |
| 37 | 12 | 12 | 14 | 16 | 18 | 18 |
| 45 | 14 | 14 | 15 | 18 | 20 | 22 |
| 55 | 15 | 16 | 18 | 20 | 22 | 26 |
| 63 | 16 | 18 | 20 | 22 | 24 | 28 |
| 75 | 20 | 22 | 24 | 26 | 28 | 32 |
| 90 | 25 | 26 | 30 | 32 | 35 | 30 |
| 110 | 28 | 30 | 32 | 35 | 38 | 45 |
| 132 | 30 | 32 | 32.6 | 38 | 45 | 60 |

# Catalogue product number index


**0**05606 L-17
005611 L-17
005613 L-17
005644 L-17
005649 L-17
005653 L-17
005718 L-17
005720 L-17
005722 L-17
005738 L-17
005740 L-17
005765 L-17
005767 L-17
005770 L-17
005791 L-17
005794 L-17
005808 L-17
005813 L-17
005816 L-17
005829 L-17
005831 L-17
005851 L-17
005853 L-17
005871 L-17
005873 L-17
005896 L-17
005898 L-17
005915 L-17
005916 L-17
005917 L-17
005921 L-17
005950 L-17
005968 L-17
005980 L-17
005988 L-17
005990 L-17
006010 L-18
006015 L-18
006022 L-18
006031 L-18
006045 L-18
006053 L-18
006060 L-18
006068 L-18
006075 L-18
006079 L-18
006091 L-18
006098 L-18
006102 L-18
006107 L-18
006109 L-18
007739 L-17
008328 M-8
009102 M-8
009465 M-8
01.006.1553.1 I-11
01025 L-46
01026 L-46
01069 L-44
01070 L-44
01071 L-44
01101 J-11
01102 J-21
01103 J-21
01116 L-44
01131 L-44
01136 L-46
01199 L-44
01203 L-44
01230 L-46
01231 L-44
01234 L-44
01240 L-44
01243 L-44
01245 L-46
01252 L-46
01254 L-46
01284 L-44
01285 L-44
01287 L-44
01289 L-44
01290 L-44
01292 L-44
01318 L-44
01319 L-44
01320 L-46
01356 L-44
01373 L-44
01479 L-46
01484 L-44
01485 L-44
01495 L-44
01537 L-44
01538 L-44
01554 L-46
01555 L-46
01563 L-44
01573 L-44
015S-1SP-L2 A-33
015S-1SP-L4 A-33
01601 L-44
01754 L-44
01760 L-44
02.124.1029.0 I-12
02.125.4329.8 I-13
02.125.4429.8 I-13
02001 J-11
02209 J-11
02218 J-11
02226 J-11
02233 J-11
02235 J-11
022PV4-D-O-CP A-34
022S-1SP-L2 A-33
022S-1SP-L4 A-33
0269012 J-12
0269024 J-12
03301 L-45
03370 L-45
03656 L-45
03693 L-45
040S-1SP-L4 A-33
04607 J-3
05.502.0710.0 I-13
05.502.2100.0 I-13
05.502.3100.0 I-13
05.544.1029.0 I-12
05.544.4329.8 I-13
05.544.4429.8 I-13
05.561.3653.0 I-12
05.564.8653.1 I-11
05.568.8853.1 I-11
05.587.3156.0 I-12
055PV4-D-O-CP A-34
055S-1SP-L4 A-33
05627 J-4
05647 J-5
06.562.5853.1 I-11
06.563.8753.1 I-11
06.563.8953.1 I-11
06.563.9153.1 I-11
06.563.9353.1 I-11
06207 J-5
06208 J-5
06507 J-7
06508 J-7
06607 J-7
06MB K-54
07.201.1227.6 L-4
07.201.1327.6 L-4
07.201.3227.6 L-4
07.201.3327.6 L-4
07.201.5227.6 L-4
07.201.5327.6 L-4
07.201.7227.6 L-4
07.201.7327.6 L-4
07.201.9227.6 L-4
07.201.9327.6 L-4
07.300.6955.0 L-4
07.311.0155.0 L-3
07.311.0255.0 L-3
07.311.1155.0 L-3
07.311.1255.0 L-3
07.311.4155.0 L-3
07.311.6655.0 L-3
07.311.6755.0 L-3
07.311.7655.0 L-3
07.311.7755.0 L-3
07.312.1755.0 L-3
07.312.6053.0 L-2
07.312.6755.0 L-2
07.312.6855.0 L-2
07.312.6955.0 L-2
07.312.7055.0 L-2
07.312.7155.0 L-2
07.312.7255.0 L-2
07.312.7355.0 L-2
07.312.7455.0 L-2
07.313.2355.0 L-4
07.313.2455.0 L-4
07.313.2555.0 L-1
07.313.2655.0 L-1
07.313.2855.0 L-1
07.313.2955.0 L-1
07.313.3155.0 L-1
07.313.3355.0 L-1
07.313.4155.0 L-2
07.313.4255.0 L-2
07.313.4455.0 L-2
07.409.7056.0 I-15
07.409.7156.0 I-15
07.409.7256.0 I-15
07.409.7356.0 I-15
07.417.6753.0 I-15
07.417.6853.0 I-15
07.428.5553.0 I-15
07.428.5653.0 I-15
07.428.5753.0 I-15
07.431.7053.8 L-3
07.431.7153.8 L-3
07.431.7253.8 L-3
07.431.7353.8 L-3
075PV4-D-O-CP A-34
075S-1SP-L4 A-33
075S-5SPLR-O A-33
080010-0-4 L-42
080010-1-4 L-42
080010-2-4 L-42
080030-0-4 L-42
080030-1-4 L-42
080030-2-4 L-42
080103-01-001 K-23
080103-02-001 K-23
080103-03-003 K-23
080103-04-004 K-23
080103-06-020 K-24
080103-06-024 K-24
080103-06-027 K-24
080103-06-058 K-24
080104-01-001 K-23
080104-02-001 K-23
080104-03-003 K-23
080104-04-004 K-23
080104-06-029 K-24
080104-06-036 K-24
080104-06-054 K-24
080104-06-063 K-24
080110-0-4 L-42
080110-2-4 L-42
080210-0-4 L-42
080210-1-4 L-42
080210-2-4 L-42
080310-0-4 L-42
080310-1-4 L-42
080310-2-4 L-42
082040-0-3 L-42
082050-0-3 L-42
082060-0-3 L-42
082070-0-3 L-42
082080-0-3 L-42
082090-0-3 L-42
084551-1-4 L-42
084553-1-4 L-42
086105-0-4 L-42
086105-1-4 L-42
086105-2-4 L-42
086105-3-4 L-42
086105-9-2 L-42
090002 J-5
09006 J-6
09300020 J-10
09308 J-10
09316 J-10
093160 J-10
093161 J-10
09360 J-10
09363 J-9
093630024 J-9
093638230 J-9
09368141 J-10
09406 J-4
09456 J-4
09471 J-4
095004 J-5
09518 J-2
09700 J-2
09758 J-2

**1**00064 K-21
10060400 L-28
10060522 L-28
10060531 L-28
10060581 L-28
10060648 L-28
10060768 L-30
10060770 L-29
10060771 L-29
10060772 L-29
10060773 L-29
10060774 L-29
10060775 L-29
10060776 L-29
10060777 L-29
10061780 L-29
10061781 L-29
10061782 L-29
10061783 L-29
10061784 L-29
10061785 L-29
10061786 L-29
10061787 L-29
10062183 L-30
10062184 L-30
10062185 L-30
10062186 L-30
10062187 L-30
10063141 L-29
10063142 L-29
10063143 L-29
10063144 L-29
10063145 L-29
10063146 L-29
10063147 L-29
10063148 L-29
10063570 L-30
10063571 L-30
10063572 L-30
10063573 L-30
10063574 L-30
10063575 L-30
10063577 L-30
10063579 L-30
10063582 L-30
10063584 L-30
10063585 L-30
10063588 L-30
10063591 L-30
10063650 L-30
10063653 L-30
10063655 L-30
10063659 L-30
10063661 L-30
10063662 L-30
10063664 L-30
10063667 L-30
10063670 L-30
10063673 L-30
10065000 L-29
10065001 L-29
10065002 L-29
10065003 L-29
10065004 L-29
10065005 L-29
10065006 L-29
10065007 L-29
10066120 L-29
10066121 L-29
10066122 L-29
10066123 L-29
10066124 L-29
10066125 L-29
10066126 L-29
10066127 L-29
10066410 L-29
10066411 L-29
10066412 L-29
10066413 L-29
10066414 L-29
10066415 L-29
10066416 L-29
10066417 L-29
101.6303.G I-10
101.6311.G I-10
101.6403.G I-10
101.6407.G I-10
101.6414.G I-10
10100666 L-31
10100667 L-31
10100801 L-31
10100802 L-31
10101359 L-30
10101459 L-28
10101460 L-28
10101861 L-30
10101862 L-30
10105595 L-28
10105601 L-28
10106591 L-31
10106593 L-31
10108616 L-30
10108836 L-28
10109563 L-28
10109569 L-28
10109571 L-28
10109800 L-28
10110629 L-28
10110630 L-28
10110766 L-28
10160 M-2
101999 K-21
10280 M-2
10281 M-2
103510 K-21
104182300000 J-21
104282300000 J-21
104312 K-21
105074 K-19
105182300000 J-21
106096 B-61
106097 B-61
106098 B-61
106182300000 J-21
106300 B-61
106302 B-61
106521 B-61
106523 B-61
106526 B-61
106528 B-61
106530 B-61
106531 B-61
106533 B-61
106535 B-61
106537 B-61
106538 B-61
106539 B-61
106544 B-61
1100000 K-51
1100003 K-51
1100005 K-51
1100006 K-51
1100010 K-51
1100011 K-51
1100021 K-51
1100025 K-51
1100031 K-51
1100032 K-51
1100039 K-51
110004 K-47
1100041 K-51
1100043 K-51
1100050 K-51
1100051 K-51
1100052 K-51
1100054 K-51
1100060 K-51
1100061 K-51
1100062 K-51
1100078 K-52
1100082 K-51
1100088 K-52
1100092 K-51
110012 K-47
1100133 K-51
1100S-5SPLR-O A-33
110PV4-D-O-CP A-34
110PV4-O-CP A-34
110S-5SPLR-O A-33
1112 1111 B-33
1115296311T B-59
1115296316 B-59
1115296318T B-60
1115296319T B-60
1122 1111 B-36
112H8025MD4BBLS H-19
112H9225HA2BPT H-19
113100240000 J-21
113182300000 J-21
1132 1111 B-36
113H1225XD4BCLS H-19
113H1238HA1BMT H-19
113H1238HA2BMT H-19
113H1238HA3BMT H-19
114004 K-47
114104 K-47
1142 1111 B-33
114282300000 J-21
114H17255HA1BMT H-19
114H17255HA2BMT H-19
114H17255HA3BMT H-19
115H1724XD4BALS H-19
115H1806HA1BMT H-19
115H1806HA2BMT H-19
115H1806HA3BMT H-19
116053 B-61
116054 B-61
116063 B-61
116064 B-61
116065 B-61
116H2208HA2BMT H-19
116H2509HA2BMW H-19
120103-01-022 K-23
120103-02-022 K-23
120104-01-006 K-23
120104-01-022 K-23
120104-01-024 K-23
120104-02-006 K-23
120104-02-022 K-23
120104-02-024 K-23
120104-03-001 K-23
120104-04-001 K-23
120104-06-010 K-24
120104-06-017 K-24
120104-06-053 K-24
120104-06-061 K-24
120104-06-624 K-24
120104-06-625 K-24
120104-06-924 K-24
120104-06-925 K-24
120105-01-006 K-23
120105-01-022 K-23
120105-01-024 K-23
120105-02-006 K-23
120105-02-022 K-23
120105-02-024 K-23
120105-03-001 K-23
120105-04-001 K-23
120105-06-053 K-24
120105-06-055 K-24
120105-06-075 K-24
120105-06-127 K-24
120108-01-006 K-23
120108-01-022 K-23
120108-02-006 K-23
120108-02-022 K-23
120108-02-024 K-23
120108-03-001 K-23
120108-04-001 K-23
120108-06-008 K-24
120108-06-009 K-24
120108-06-115 K-24
120108-06-119 K-24
120504-01-001 K-24
120504-02-001 K-24
120504-03-001 K-24
120504-04-001 K-24
121-10004 E-21
121-10005 E-21
121-10106 E-21
121-10107 E-21
121-10108 E-21
121305-01-001 K-24
121305-02-001 K-24
121305-03-001 K-24
121305-04-001 K-24
1225HD4BCLS H-20
1238XA2BPT H-20
1238XA3BPT H-20
125182300000 J-21
126074 B-61
126075 B-61
126182300000 J-21
1291000 K-52
1291001 K-52
1291010 K-52
1291011 K-52
1295000 K-52
1295001 K-52
1295003 K-52
1295004 K-52
1295006 K-52
1295007 K-52
1295010 K-52
1295013 K-52
1295016 K-52
12A182300000 J-21
12A282300000 J-21
1300110 L-35
13031 E-22
13044 E-20
13048 E-20
13050 E-20
13054 E-20
13057 E-20
13062 E-20
13066 E-20
13070 E-20
13073 E-20
13077 E-20
13085 E-22
13086 E-22
13087 E-22
13088 E-22
13089 E-22
1309 1001 B-40
1309 2006 B-40
1309 4006 B-40
1309 4016 B-40
13090 E-22
1310010 K-49
1310011 K-49
1310012 K-49
1310013 K-49
1310014 K-49
1310015 K-49
1310016 K-49
1310017 K-49
1310211 K-49
1310212 K-49
1310213 K-49
1310214 K-49
1310215 K-49
1310217 K-49
1310219 K-49
1310610 K-49
1310612 K-49
1310660 K-49
1310662 K-49
1310969 K-49
1310973 K-49
1310976 K-49
1310980 K-49
1310997 K-49
13160 L-56
1320211 K-49
1320212 K-49
1320213 K-49
1320214 K-49
1320215 K-49
1320217 K-49

1320219....K-49
1320610....K-49
1320612....K-49
1320S-5SPLR-O....A-33
13239....E-23
13244....E-23
13248....E-23
13250....E-23
13254....E-23
13257....E-23
13262....E-23
13266....E-23
13270....E-23
13273....E-23
13277....E-23
1330801....K-52
1330802....K-52
1330803....K-52
1330805....K-52
1330900....K-52
1330904....K-52
1330913....K-52
1330941....K-52
136.001....I-10
136.5023....I-10
136.5121....I-10
136.5121-302....I-10
136.5121-303....I-10
136.5121-323....I-10
136.5121-333....I-10
136.5122....I-10
136.5122-303....I-10
136.5122-414....I-10
136.5123....I-10
136.5123-303....I-10
136.5123-414....I-10
137.002....I-10
137.101....I-10
137.121....I-10
137.123....I-10
137.141....I-10
137.5012....I-10
137.5022....I-10
137.5212....I-10
137.5311P....I-10
137.5462....I-10
1390283....K-50
1390285....K-50
1390287....K-50
1390680....K-50
1390682....K-50
1390800....K-50
1390802....K-50
1390804....K-50
1390805....K-50
1390808....K-50
1390809....K-50
1390810....K-50
1390905....K-50
1399 4006....B-40
1400 1020....B-44
1400 1032....B-33
1400 1050....B-33
1400 1232....B-44
1400 1250....B-44
1400/704/B6/22A....J-29
140004....K-44
140005....K-44
140006....K-44
140007....K-44
140008....K-44
140009....K-44
140019....K-43
140020....K-43
140021....K-44
140037....K-44
140038....K-44
140040....K-44
140043....K-44
140044....K-43
140045....K-44
140046....K-44
140047-S....K-44
140048....K-44
140057....K-44
140059....K-44
140061....K-44
140062....K-44
140063....K-44
140064....K-44
140068....K-44
140099....K-44
1401 0532....B-44
1401 0540....B-44
1401 0632....B-31
1401 1532....B-33
1401 1540....B-33
140107....K-46
140108....K-46
140110....K-46
140111....K-46
140123....K-46
140140....K-43
140149....B-61
140155....B-61
140165....K-44
1402 0832....B-36
140354....B-61
1407 0520....B-31
1407 0532....B-31
140852....B-61
1409 0632....B-31
141029....K-43
141037....K-43
141038....K-43
141041....K-43
141053....K-43
141054....K-43
1413 2111....B-31
1413 2113....B-36
1413 2115....B-44
1419 0000....B-31
141D 2911....B-31
142052....K-44
142058....K-44
1423 2111....B-33
1423 2113....B-36
1423 2115....B-44
1429 0000....B-31
142D 2911....B-33
143001....K-44
143017....B-61
143018....B-61
143118....B-61
143119....B-61
1433 3111....B-44
1433 3113....B-37
144003....K-44
144009....K-44
1443 3111....B-33
1443 3113....B-36
144D 3911....B-33
145025....K-43
145029....K-43
145037....K-43
145038....K-43
145053....K-43
145054....K-43
1453 8111....B-33
1473 0111....B-32
1473 0113....B-32
1473 1111....B-31
1473 1113....B-32
1474 1111....B-31
1483 1111....B-31
1484 1111....B-31
1493 0111....B-31
14AF 2111....B-34
15000....L-53
15040....L-53
15041....L-53
1509 0001....B-42
1509 3080....B-37
1509 3160....B-37
1509 4080....B-37
1509 4160....B-37
15090....L-53
15091....L-53
150PV4-D-O-CP....A-34
150PV4-O-CP....A-34
150S-5SPLR-O....A-33
1529 0012....B-42
1529 0080....B-42
1539 0012....B-42
1539 0080....B-42
1559 3012....B-42
1559 3025....B-42
1559 3040....B-42
1559 3063....B-42
1559 3080....B-42
1559 3120....B-42
1559 3160....B-42
1559 4012....B-42
1559 4025....B-42
1559 4040....B-42
1559 4063....B-42
1559 4080....B-42
1559 4120....B-42
1559 4160....B-42
1599 0502....B-42
1599 0532....B-42
1599 4001....B-42
1599 5112....B-42
16.4.431.01....H-16
16033....E-22
16036....E-22
16055....E-20
16060....E-20
16064....E-20
16068....E-20
16071....E-20
16075....E-20
16154....E-22
16203....E-22
16260....E-23
16264....E-23
16268....E-23
16271....E-23
16275....E-23
172007....K-47
1725HD4BALS....H-20
1725XA2BPT....H-20
1725XA3BPT....H-20
174401....K-45
174451....K-45
185S-5SPLR-O....A-33
188100....B-61
188101....B-61
188102....B-61
18L-5001....E-24
18L-5002....E-24
18L-5004....E-24
19.230.0040.0....L-4
19000....M-2
19031....E-22
19034....E-22
19065....E-20
19069....E-20
19073....E-20
19076....E-20
19085....E-20
19101....E-22
192100240000....J-11
19265....E-23
19269....E-23
19273....E-23
19285....E-23
1K199000....J-16
1LD12020....J-13
1MR125112....L-33
1MR125114....L-33
1MR125152....L-33
1MR125154....L-33
1MR12572....L-33
1MR12574....L-33
1MR160134....L-33
1MR63112....L-33
1MR6372....L-33
1Y042715....J-13

200007-SS....K-46
20030....M-1
20050....M-1
20090....M-1
20100....M-1
202001-SS....K-46
202007-SS....K-46
202380120000....J-12
202380240000....J-12
202382300000....J-12
202390120000....J-12
202390240000....J-12
202480120000....J-12
202480240000....J-12
202482300000....J-12
202490120000....J-12
202490240000....J-12
202680120000....J-12
202680240000....J-12
202682300000....J-12
202690120000....J-12
202690240000....J-12
202880120000....J-12
202880240000....J-12
202882300000....J-12
202890120000....J-12
202890240000....J-12
205001....K-46
205007....K-46
208007....K-46
210.906441K....K-22
210.908441K....K-22
210.910441K....K-22
210.915441K....K-22
210.920441K....K-22
210.925441K....K-22
21023....E-22
21029....E-22
21035....E-22
21045....E-20
21049....E-20
21053....E-20
21056....E-20
21064....E-20
2107 0516....B-34
21072....E-20
2113 4001....B-35
2113 4002....B-35
2115 3401....B-35
2115 3403....B-35
2115 3404....B-35
2115 3406....B-35
2115 4401....B-35
2115 4404....B-35
2115 4406....B-35
2119 0001....B-34
2119 1012....B-34
2119 3312....B-34
21253....E-23
21256....E-23
21264....E-23
21272....E-23
213.1633....I-1
213.1636....I-1
213.1637....I-1
213.3233....I-1
213.3236....I-1
213.3237....I-1
213.6333....I-1
213.6336....I-1
213.6337....I-1
218.12533....I-1
218.12536....I-1
218.125366....I-1
218.12537....I-1
218.125376....I-1
218.1633....I-1
218.1636....I-1
218.16366....I-1
218.1637....I-1
218.16376....I-1
218.3233....I-1
218.3236....I-1
218.32364....I-5
218.32366....I-1
218.3237....I-1
218.32376....I-1
218.6333....I-1
218.6336....I-1
218.63366....I-1
218.6337....I-1
218.63376....I-1
21PV 3722....B-34
21PV 4754....B-34
2200 1004....B-32
2200 1005....B-32
2200 1008....B-32
2200 1011....B-32
2200 3000....B-31
2200 3002....B-31
2200 3003....B-31
2200 3004....B-31
2200 3005....B-31
2200 3006....B-31
2200 3008....B-31
2200 3010....B-31
2200 3011....B-31
2200 3016....B-31
2200 4016....B-31
22000407....L-28
22001132....L-28
22055....E-21
22062....E-21
2206HA2BMT....H-20
2206HA3BMW....H-20
22070....E-21
2209 6009....B-32
2209 6011....B-32
220PV4-D-O-CP....A-34
220PV4-O-CP....A-34
220S-5SPLR-O....A-33
221.1633....I-5
221.1636....I-5
221.1637....I-5
221.3233....I-5
221.3236....I-5
221.3237....I-5
2230 3001EM....B-36
2230 3002EM....B-36
2230 3004EM....B-36
2230 3006EM....B-36
2230 3008EM....B-36
2230 3010EM....B-36
2230 3011EM....B-36
223200124340....J-11
223200124440....J-11
223200124540....J-11
223200244340....J-11
223200244440....J-11
223200244540....J-11
223200484340....J-11
223200484540....J-11
223202304340....J-11
223202304440....J-11
223202304540....J-11
223400124340....J-11
223400124640....J-11
223400124740....J-11
223400244340....J-11
223400244640....J-11
223400244740....J-11
223402304340....J-11
223402304640....J-11
223402304740....J-11
226.1633....I-5
226.1636....I-5
226.1637....I-5
226.3233....I-5
226.3236....I-5
226.3237....I-5
2269 6009....B-32
2269 6011....B-32
22700....D-33
22701....D-33
227600....D-13
227601....D-13
227602....D-13
227603....D-13
227604....D-13
227605....D-13
227606....D-13
227608....D-13
227609....D-13
227610....D-13
227611....D-13
227612....D-13
227613....D-13
227614....D-13
227615....D-13
227616....D-13
227617....D-13
227618....D-13
227619....D-13
227620....D-13
227621....D-13
227622....D-13
227623....D-13
227624....D-13
227625....D-13
227626....D-13
227627....D-13
227630....D-13
227631....D-13
227632....D-13
227636....D-13
227637....D-13
2294 1005....B-32
2294 1009....B-32
2294 1011....B-32
2294 3005....B-32
2294 3009....B-32
2294 3016....B-32
2294 4016....B-32
2299 0001....B-31
2299 0011....B-31
2299 3005....B-32
2299 3009....B-32
2299 3409....B-32
2299 3609....B-32
2299 4005....B-32
2299 4009....B-32
2299 5012....B-31
2299 5032....B-31
2299 5042....B-31
230001....K-45
230003....K-45
23026....E-22
23029....E-22
23032....E-22
23035....E-22
23058....E-21
23062....E-21
23066....E-21
23070....E-21
231001....K-45
231005....K-45
232019....K-45
232023....K-45
232023-AS....K-45
232025....K-45
23251....E-23
23258....E-23
23262....E-23
23266....E-23
23270....E-23
236.910441K....K-22
236.911441K....K-22
236.932441K....K-22
240.1693....I-2
240.1696....I-2
240.1697....I-2
240.3293....I-2
240.3296....I-2
240.3297....I-2
240.6393T....I-2
240.6396T....I-2
240.6397T....I-2
242.1693....I-5
242.1696....I-5
242.1697....I-5
242.3293....I-5
242.3296....I-5
242.3297....I-5
243.1693....I-2
243.1696....I-2
243.1697....I-2
243.3293....I-2
243.3296....I-2
243.3297....I-2
243.6393....I-2
243.6396....I-2
243.6397....I-2
245.12597T....I-2
245.1693....I-2
245.1696....I-2
245.1697....I-2
245.3293....I-2
245.3296....I-2
245.3297....I-2
245.6393T....I-2
245.6396T....I-2
245.6397T....I-2
247.1693....I-5
247.1696....I-5
247.1697....I-5
247.3293....I-5
247.3296....I-5
247.3297....I-5
248.12593....I-2
248.12596....I-2
248.125966....I-2
248.12597....I-2
248.125976....I-2
248.1693....I-2
248.1696....I-2
248.16966....I-2
248.1697....I-2
248.16976....I-2
248.3293....I-2
248.3296....I-2
248.32966....I-2
248.3297....I-2
248.32976....I-2
248.6393....I-2
248.6396....I-2
248.63966....I-2
248.6397....I-2
248.63976....I-2
2509HA2BMW....H-20
2509HA3BMW....H-20
2600 3014....B-33
2600 3017....B-33
2600 3200....B-33
2600 3250....B-33
2600 3320....B-33
26027....E-20
26029....E-20
26031....E-20
26035....E-20
260380120000....J-12
260380240000....J-12
260381100000....J-12
260382300000....J-12
26041....E-20
26046....E-20
26051....E-20
261018....J-27
261019....J-27
261022....J-27
2694 3014....B-37
2694 3021....B-37
2694 3051....B-37
2694 4014....B-37
2694 4021....B-37
2694 4051....B-37
2699 0031....B-33
2699 0032....B-33
2699 5042....B-33
26AC 3020....B-33
26AC 3025....B-33
26AC 3031....B-33
26AC 3040....B-33
26AC 3050....B-33
26AC 3063....B-33
26AC 3080....B-33
26AC 3100....B-33
26AC 3121....B-33
26AC 3160....B-33
26AC 4025....B-33
26AC 4040....B-33
26AC 4063....B-33
26AC 4080....B-33
26AC 4121....B-33
26PV 2010....B-34
26PV 2016....B-34
26PV 2025....B-34
26PV 2031....B-34
26PV 4040....B-34
270270....J-27
270272....J-27
270282....J-27
270283....J-27
270299....J-27
275.100-10120....F-7
275.100-10300....F-7
275.105-10068....F-7
275.105-10100....F-7
275.105-10180....F-7
275.185-402800....F-7
275.186-405600....F-7
275.256-508300....F-7
275.266-511100....F-7
275.266-607700....F-7
275.269-416600....F-7
275.269-611500....F-7
275.278-513700....F-7
275.279-516600....F-7
275.389-519900....F-7
275.389-522100....F-7
275.396-715401....F-7
275.39B-411100....F-7
275.39B-527400....F-7
275.523-502800....F-7
275.525-701400....F-7

275.535-601900 ..... F-7
275.545-504000 ..... F-7
275.546-505800 ..... F-7
275.546-506800 ..... F-7
275.546-703800 ..... F-7
275.548-408200 ..... F-7
275.548-605800 ..... F-7
27697 ..... D-25
27700 ..... D-31
27718 ..... D-31
27719 ..... D-31
27760 ..... D-28
27761 ..... D-28
27762 ..... D-25
27763 ..... D-31
27764 ..... D-25
27765 ..... D-30
27766 ..... D-30
27777 ..... D-31
27790 ..... D-31
27793 ..... D-31
2799 3018 ..... B-33
2799 7042 ..... B-33
28-5002 ..... E-24
28-5003 ..... E-24
28-5005 ..... E-24
28241 ..... D-28
28242 ..... D-28
28243 ..... D-28
28244 ..... D-28
28246 ..... D-28
28323 ..... D-28
28325 ..... D-28
29100 ..... M-1
2998 0013 ..... B-33
2998 0023 ..... B-33
2998 0033 ..... B-33

30.494.0010.0 ..... L-4
30.494.1010.0 ..... L-4
30.494.1110.0 ..... L-4
30.494.2510.0 ..... L-4
30022 ..... E-23
30024 ..... E-23
30026 ..... E-23
30028 ..... E-23
300S-5SPLR-O ..... A-33
30107 ..... D-25
30108 ..... D-25
30120 ..... M-1
30155 ..... M-1
30160 ..... M-2
30161 ..... M-2
30199 ..... M-1
302270120010 ..... J-1
302270240010 ..... J-1
302270480010 ..... J-1
304120 ..... L-5
304121 ..... L-5
304130 ..... L-5
304131 ..... L-5
304140 ..... L-5
304141 ..... L-5
304150 ..... L-5
304151 ..... L-5
304190 ..... L-5
304240 ..... L-5
304250 ..... L-5
304290 ..... L-5
304300 ..... L-5
304310 ..... L-5
304320 ..... L-5
304330 ..... L-5
304340 ..... L-5
304350 ..... L-5
304360 ..... L-5
304370 ..... L-5
304380 ..... L-5
304419 ..... L-5
304500 ..... L-6
304510 ..... L-6
304520 ..... L-6
30600 ..... M-2
307019 ..... L-7
307109 ..... L-7
307119 ..... L-7
307129 ..... L-7
307139 ..... L-7
307169 ..... L-7
307179 ..... L-7
307199 ..... L-7
307249 ..... L-7
307259 ..... L-7
307269 ..... L-7
308009 ..... L-6
30900 ..... M-1
31070 ..... E-23
31074 ..... E-23
31110 ..... L-46
31113 ..... L-46
31115 ..... L-46
31118 ..... L-46
31120 ..... L-46
31123 ..... L-46

313.1643 ..... I-1
313.1646 ..... I-1
313.1647 ..... I-1
313.3243 ..... I-1
313.3246 ..... I-1
313.3247 ..... I-1
313.6343 ..... I-1
313.6346 ..... I-1
313.6347 ..... I-1
31570 ..... L-45
31572 ..... L-45
31594 ..... D-31
31595 ..... D-31
31596 ..... D-31
31597 ..... D-31
317109 ..... L-5
318.12543 ..... I-2
318.12546 ..... I-2
318.125466 ..... I-2
318.12547 ..... I-2
318.125476 ..... I-2
318.1643 ..... I-1
318.1646 ..... I-1
318.16466 ..... I-1
318.1647 ..... I-1
318.16476 ..... I-1
318.3243 ..... I-1
318.3246 ..... I-1
318.32464 ..... I-5
318.32466 ..... I-1
318.3247 ..... I-1
318.32476 ..... I-1
318.6343 ..... I-1
318.6346 ..... I-1
318.63466 ..... I-1
318.6347 ..... I-1
318.63476 ..... I-1
319109 ..... L-5
31954 ..... L-45
32004 ..... L-45
32168 ..... L-45
32214 ..... L-45
32215 ..... L-45
322170124000 ..... J-1
322170244000 ..... J-1
322170484000 ..... J-1
32320 ..... D-32
32326 ..... D-32
32331 ..... D-32
32332 ..... D-32
32333 ..... D-32
32334 ..... D-32
32335 ..... D-32
32336 ..... D-32
32337 ..... D-32
32347 ..... D-32
32351 ..... D-32
32352 ..... D-32
32353 ..... D-32
32354 ..... D-32
32355 ..... D-32
32356 ..... D-32
32357 ..... D-32
32367 ..... D-32
32377 ..... D-32
32387 ..... D-32
32391 ..... D-32
32392 ..... D-32
32393 ..... D-32
32394 ..... D-32
32395 ..... D-32
32396 ..... D-32
324109 ..... L-5
32430 ..... L-45
32431 ..... L-45
324409 ..... L-5
32441 ..... L-45
32442 ..... L-45
32454 ..... L-45
32455 ..... L-45
32457 ..... D-32
32459 ..... L-45
32467 ..... D-32
325000 ..... B-56
325003 ..... B-56
325005 ..... B-56
325007 ..... B-56
325009 ..... B-56
325010 ..... B-56
325018 ..... B-56
325020 ..... B-56
325025 ..... B-56
325030 ..... B-56
325042 ..... B-56
325046 ..... B-56
325051 ..... B-56
325100 ..... B-56
325250 ..... B-56
325400 ..... B-56
325630 ..... B-56
326100 ..... B-56
326200 ..... B-56
326250 ..... B-56
326630 ..... B-56

32LC 3105 ..... B-35
32LC 3108 ..... B-35
32LC 3120 ..... B-35
32LC 3140 ..... B-35
32LC 3163 ..... B-35
32LC 3608 ..... B-35
33201 ..... L-46
33202 ..... L-46
33203 ..... L-46
33204 ..... L-46
33216 ..... L-45
33217 ..... L-46
33222 ..... L-46
33234 ..... L-45
33341 ..... L-46
33398 ..... L-45
334103 ..... B-56
334160 ..... B-56
334170 ..... L-5
334190 ..... L-5
334200 ..... L-5
334210 ..... L-5
334251 ..... B-56
334450 ..... L-5
334460 ..... L-5
334470 ..... L-5
33601 ..... L-45
33602 ..... L-45
33603 ..... L-45
336500 ..... L-7
336510 ..... L-7
336520 ..... L-7
336530 ..... L-7
340001 ..... B-54
340125 ..... B-54
34089024- ..... J-10
34089024+ ..... J-10
34102 ..... L-53
341100 ..... B-54
341250 ..... B-54
341400 ..... B-54
341630 ..... B-54
34202 ..... L-53
34302 ..... L-53
343125 ..... B-56
34402 ..... L-53
34502 ..... L-53
345170050010 ..... J-1
345170120010 ..... J-1
345170240010 ..... J-1
345170480010 ..... J-1
345170600010 ..... J-1
34702 ..... L-53
348170129024 ..... J-1
348170248240 ..... J-1
348170249024 ..... J-1
348170608240 ..... J-1
348170609024 ..... J-1
351109 ..... L-6
351229 ..... L-6
351619 ..... L-6
352115 ..... B-56
352300 ..... B-56
352400 ..... B-56
352630 ..... B-56
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370PV4-D-O-CP ..... A-34
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3MR160164 ..... L-33

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418170249024 J-1
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41AC 3016 B-36
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41AC 3120 B-36
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41AC 9080 B-37
41AC 9120 B-37
41AC 9160 B-37
41F-J1 J-26
41F-J1B J-26
41F-J1R J-26
42-5003 E-24
42-5005 E-24
42-5009 E-24
42-5011 E-24
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420004 B-46
420006 B-46
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420010 B-46
420016 B-46
420020 B-46
420025 B-46
420032 B-46
42005 D-33
42006 D-33
42021 D-33
42025 D-33
42026 D-33
42041B L-49
42042B L-49
42043B L-49
42045 D-33
42046 D-33
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421204 B-46
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422040 B-46
422050 B-46
422063 B-46
422080 B-46
42212 D-33
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422232 B-46
422240 B-46
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422280 B-46
423.1663 I-3
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43049024+ J-10
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43200001 H-23
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450PV4-D-O-CP A-34
450PV4-O-CP A-34
450S-5SPLR-O A-33
451019 L-6
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4829 0131 E-14
4829 0140 E-14
4829 0145 E-14
4829 0150 E-16
4829 0151 E-16
4829 0153 E-16
4829 0154 E-16
4829 0155 E-16
4829 0156 E-16
4829 0157 E-16
4829 0160 E-14
4829 0161 E-14
4829 0162 E-14
4829 0181 E-15
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4829 0183 E-15
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4829 0658 E-12
4829 0700 E-16
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485150 B-48
485151 B-48
485152 B-48
485201 B-50
485203 B-50
485205 B-50
485208 B-50
485250 B-48
485258 B-51
485259 B-51
485260 B-51
485262 B-51
485264 B-51
4853 0000 E-9
485301 B-51
485303 B-51
485305 B-51
485308 B-51
485356 B-51
485357 B-51
485358 B-51
485359 B-51
485360 B-51
485362 B-51
485364 B-51
4854 0020 E-13
485705 B-47
48900N L-54
48901 L-54
48902 L-54
48903 L-54
48913 L-54
49040N L-51
49041N L-51
49045N L-51
49090N L-51
49091N L-51
49095N L-51
491107 B-50
491110 B-50
491113 B-50
491115 B-50
491120 B-50
491125 B-50
491130 B-50
491135 B-50
491140 B-50
491145 B-50
491155 B-50
49140N L-51
49141N L-51
491601 B-48
491602 B-48
491604 B-48
491605 B-48
491606 B-48
491610 B-48
491615 B-48
491620 B-48
491625 B-48
491630 B-48
491635 B-48
491650 B-48
491655 B-48
491730 B-50
491735 B-50
491737 B-50
491741 B-50
491745 B-50
491750 B-50
491760 B-50
491765 B-50
491770 B-50
491820 B-50

491825....B-50
491830....B-50
491835....B-50
49190N....L-51
49191N....L-51
49192N....L-52
49193N....L-52
491940....B-48
491945....B-48
49194N....L-52
49195....L-52
49196....L-54
492003....B-49
492004....B-49
492006....B-49
492008....B-49
492009....B-49
492010....B-49
492011....B-49
492022....B-49
492023....B-49
492024....B-49
492037....B-49
492038....B-49
492039....B-49
492040....B-49
492117....B-49
492118....B-49
492119....B-49
492120....B-49
492121....B-49
492122....B-49
492123....B-49
492124....B-49
492137....B-49
492138....B-49
492139....B-49
492140....B-49
492202....B-48
492205....B-48
492210....B-48
492215....B-48
492220....B-48
492225....B-48
492230....B-48
492250....B-48
492255....B-48
492262....B-48
49240N....L-51
49290N....L-51
49293....L-54
49294....L-54
49347N....L-51
49397N....L-51
4941 3602....B-12
4941 3723....B-12
4941 3724....B-12
4941 3740....B-12
4941 3741....B-12
4942 3723....B-12
49498....L-54
4950 0011....B-12
4950 0012....B-12
4950 0013....B-12
4950 0014....B-12
4950 0031....B-12
4950 6030....B-12
4950 6050....B-12
4950 6080....B-12
4950 6120....B-12
4950 6200....B-12
495049....L-9
495059....L-9
495099....L-9
495109....L-9
495219....L-9
49597....L-54
49613A....L-9
496300....L-9
496310....L-9
498559....L-7
49950-015....L-50
49951-023....L-50

**5**00.1683....I-6
500.1686....I-6
500.1687....I-6
500.3283....I-6
500.3286....I-6
500.3287....I-6
500001....K-45
500005....K-45
501001....K-45
501005....K-45
5020 2030....L-43
5020 2040....L-43
5020 2050....L-43
5020 2060....L-43
5020 2080....L-43
5020 2100....L-43
5021000....B-45
5021600....B-45
5024 6400....L-43
5024 6700....L-43
5025 5100....L-43
5025 5101....L-43
5025 5105....L-43
5025 5110....L-43
5025 5124....L-43
5025 5125....L-43
5025 5126....L-43
5025 5128....L-43
5028 0410....L-43
503.12586-01....I-7
503.12587-01....I-7
503.1683....I-7
503.1686....I-7
503.1687....I-7
503.3283....I-7
503.3286....I-7
503.3287....I-7
503.6386....I-7
503.6387....I-7
50415....D-33
50418....D-33
50424....D-33
50427....D-33
505.1683....I-6
505.1686....I-6
505.1687....I-6
505.3283....I-6
505.3286....I-6
505.32864....I-5
505.3287....I-6
505.6383....I-6
505.6386....I-6
505.6387....I-6
51-001312-001....B-59
51-500600-108....B-59
51-500700-109....B-60
51-930160-011....B-59
51-930499-011....B-59
5120025....B-45
5120050....B-45
5120063....B-45
5120100....B-45
5120125....B-45
5120160....B-45
5120200....B-45
5120250....B-45
5120315....B-45
5120400....B-45
5120500....B-45
5120630....B-45
513.1653....I-4
513.1653T....I-4
513.1653TS....I-4
513.1656....I-4
513.1656T....I-4
513.1656TS....I-4
513.1657....I-4
513.1657T....I-4
513.1657TS....I-4
513.3253....I-4
513.3253T....I-4
513.3253TS....I-4
513.3256....I-4
513.3256T....I-4
513.3256TS....I-4
513.3257....I-4
513.3257T....I-4
513.3257TS....I-4
513.6353T....I-4
513.6356T....I-4
513.6357T....I-4
517000....L-10
517001....L-10
517002....L-10
517003....L-10
517004....L-10
517005....L-10
517006....L-10
517007....L-10
517008....L-10
517009....L-10
518.12553T....I-4
518.12556T....I-4
518.12557T....I-4
518.1653T....I-4
518.1653TS....I-4
518.1656T....I-4
518.1656TS....I-4
518.1657T....I-4
518.1657TS....I-4
518.3253T....I-4
518.3253TS....I-4
518.32564T....I-5
518.3256T....I-4
518.3256TS....I-4
518.3257T....I-4
518.3257TS....I-4
518.6353T....I-4
518.6356T....I-4
518.6357T....I-4
518000....L-10
518001....L-10
518002....L-10
518003....L-10
518004....L-10
518005....L-10
518006....L-10
518007....L-10
518008....L-10
518009....L-10
519000....L-10
519001....L-10
519002....L-10
519003....L-10
519004....L-10
519005....L-10
519006....L-10
519007....L-10
519008....L-10
519009....L-10
519514/....L-10
519524/....L-10
519534/....L-10
51C2....F-6
520.906S033401....K-19
520.917S033401....K-19
520.917S043401....K-19
520.930S033401....K-19
520.930S043401....K-19
520.931S033401....K-19
520.931S043401....K-19
520.932S033401....K-19
520.932S043401....K-19
520.933S033401....K-19
520.933S043401....K-19
520.934S043401....K-19
520.940S033401....K-19
520.941S033401....K-19
520.942S033401....K-19
520.943S033401....K-19
520.954S033401....K-19
520.955S033401....K-19
525361....L-9
525362....L-9
525363....L-9
525371....L-9
525372....L-9
525373....L-9
525381....L-9
525382....L-9
525383....L-9
528.9010033411....K-19
528.9120033411....K-19
528.9140033411....K-19
528.9150033411....K-19
528.9170033411....K-19
528.9300033411....K-19
528.9310033411....K-19
528.9320033411....K-19
528.9330033411....K-19
528.9400033411....K-19
528110....L-9
540.941S052401....K-20
540.943S052401....K-20
540.955S052401....K-20
54013....L-51
54014....L-51
5406C....L-15
548.12586....I-6
548.12587....I-6
548.9300152401....K-20
548.9310152401....K-20
548.9320152401....K-20
548.9330152401....K-20
55011....E-21
55012....E-21
55013....E-21
550S-5SPLR-O....A-33
551280120000....J-3
551280240000....J-3
551281100000....J-3
551282400000....J-3
551290120000....J-3
551290240000....J-3
551290480000....J-3
551291100000....J-3
551292200000....J-3
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551480240000....J-3
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551482400000....J-3
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551490480000....J-3
551491100000....J-3
551492200000....J-3
553280120040....J-4
553280240040....J-4
553280360040....J-4
553280480040....J-4
553280600040....J-4
553281100040....J-4
553282300040....J-4
553290120040....J-4
553290240040....J-4
553290360040....J-4
553290480040....J-4
553290600040....J-4
553291100040....J-4
553292200040....J-4
553415....L-11
553480120040....J-4
553480240040....J-4
553480360040....J-4
553480480040....J-4
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553481100040....J-4
553482400040....J-4
553490120040....J-4
553490240040....J-4
553490360040....J-4
553490480040....J-4
553490600040....J-4
553491100040....J-4
553492200040....J-4
56.135.1055.0....L-3
56.170.1055.0....L-3
56.197.1055.0....L-3
56.198.1055.0....L-3
56.199.1055.0....L-3
56.202.0055.0....L-2
56.202.0055.6....L-2
56.202.9055.0....L-2
56.203.0055.0....L-2
56.203.0055.6....L-2
56.203.5055.0....L-2
56.203.5155.0....L-2
56.203.7055.0....L-2
56.203.9055.0....L-2
56.203.9355.0....L-2
56.206.0055.0....L-2
56.206.0055.6....L-2
56.206.9055.0....L-2
560.1683....I-6
560.1686....I-6
560.1687....I-6
560.3283....I-6
560.3286....I-6
560.3287....I-6
561.1683....I-6
561.1686....I-6
561.16866....I-6
561.1687....I-6
561.16876....I-6
561.3283....I-6
561.3286....I-6
561.32864....I-5
561.32866....I-6
561.3287....I-6
561.32876....I-6
561.6383....I-6
561.6386....I-6
561.63866....I-6
561.6387....I-6
561.63876....I-6
563280120040....J-5
563280240040....J-5
563280480040....J-5
563281100040....J-5
563282400040....J-5
563290120040....J-5
563290240040....J-5
563290480040....J-5
563290600040....J-5
563291100040....J-5
563292200040....J-5
563480120040....J-5
563480240040....J-5
563480480040....J-5
563481100040....J-5
563482400040....J-5
563490120040....J-5
563490240040....J-5
563490480040....J-5
563490600040....J-5
563491100040....J-5
563492200040....J-5
568.1683....I-7
568.1686....I-7
568.1687....I-7
568.3283....I-7
568.3286....I-7
568.3287....I-7
568.6383....I-7
568.6386....I-7
568.6387....I-7
57.106.1155.0....L-4
57.403.7055.0....L-3
57.503.0055.0....L-3
57.503.7855.0....L-3
57.503.8855.0....L-3
57.504.0055.0....L-3
57.504.9055.0....L-3
57.506.0055.0....L-3
57.506.0555.0....L-4
57.506.9055.0....L-3
57.510.0155.0....L-3
57.510.0555.0....L-4
57.510.9055.0....L-3
57.516.0155.0....L-3
57.516.9055.0....L-3
57.535.0155.0....L-3
57.535.9055.0....L-3
57.570.0155.0....L-3
57.904.5355.0....L-3
57.910.5055.0....L-3
570.0016....I-3
570.0032....I-3
570.0116....I-3
570.0132....I-3
570.5052....I-10
570.6001....I-10
570.90163....I-2
570.90164....I-2
570.90165....I-2
570.90324....I-2
570.90325....I-2
570.9063....I-2
570.9125....I-2
570.M0125....I-3
570.M0163....I-3
572.0120....I-6
572.0200....I-6
572.0220....I-6
572.0310....I-6
58.503.0055.0....L-1
58.503.0055.6....L-1
58.503.2055.0....L-1
58.503.9055.0....L-1
58.504.0055.0....L-1
58.504.0055.6....L-1
58.504.2055.0....L-1
58.504.5055.0....L-1
58.504.5155.0....L-1
58.504.7055.0....L-1
58.504.9055.0....L-1
58.506.0055.0....L-1
58.506.0055.6....L-1
58.506.9055.0....L-1
58.510.0055.0....L-1
58.510.0055.6....L-1
58.510.9055.0....L-1
590.FEM2003....I-7
590.FEM3203....I-7
590.FEM6303....I-7
59002N....L-52
59010N....L-52
59020N....L-52
59030N....L-52
59042N....L-51
59050N....L-51
5TH23000....J-13
5TH24000....J-14

**6**00110....J-28
600111....J-28
600112....J-28
600113....J-28
600114....J-28
600115....J-28
600116....J-28
60100....M-2
601280120040....J-6
601280240040....J-6
601280360040....J-6
601280480040....J-6
601280600040....J-6
601281100040....J-6
601282400040....J-6
601284000040....J-6
601290120040....J-6
601290240040....J-6
601290360040....J-6
601290480040....J-6
601290600040....J-6
601291100040....J-6
601292200040....J-6
601380120040....J-6
601380240040....J-6
601380360040....J-6
601380480040....J-6
601380600040....J-6
601381100040....J-6
601382400040....J-6
601384000040....J-6
601390120040....J-6
601390240040....J-6
601390360040....J-6
601390480040....J-6
601390600040....J-6
601391100040....J-6
601392200040....J-6
602300....J-28
602310....J-28
602320....J-28
602400....J-28
604.9000000....K-22
604.9100000....K-22
604.9200000....K-22
604.9400000....K-22
604.9500000....K-22
610 001 0....M-4
610 087 3....M-4
610 185 3....M-4
62000....M-2
623380120040....J-5
623380240040....J-5
623380480040....J-5
623381100040....J-5
623382400040....J-5
623384000040....J-5
623390120040....J-5
623390240040....J-5
623390480040....J-5
623391100040....J-5
623392200040....J-5
63-001417-002....B-59
63-002354-001....B-60
63-028802-003....B-59
63-073821-001....B-60
63-073822-003....B-60
63-073822-004....B-60
63-500600-601....B-59
63-500600-611....B-59
63-500600-621....B-59
63-500700-711....B-60
63-500700-721....B-60
63-500750-703....B-60
63-811628-041....B-60
63-811685-061....B-59
63-811686-061....B-59
63-811748-021....B-59
63-811750-061....B-59
63-811761-021....B-59
63-823191-021....B-59
63-823234-041....B-59
63-823256-121....B-59
63-823259-141....B-59
63-823267-001....B-59
63-823427-002....B-59
63020....L-50
63040N....L-50
63070....L-50
63090....L-50
64040....L-51
64050....L-51
64143-SBS....L-50
64147-SBS....L-50
64193-SBS....L-50
64197-SBS....L-50
64293-SBS....L-50
6450XE....L-15
6454XE....L-15
65000....L-52
65010....L-52
65020....L-52
65030....L-52
653180120000....J-7
653180120300....J-7
653180240000....J-7
653180240300....J-7
653180480000....J-7
653180480300....J-7
653181100000....J-7
653181100300....J-7
653182400000....J-7
653182400300....J-7
653184000000....J-7
653184000300....J-7
653190120000....J-7
653190120300....J-7
653190240000....J-7
653190240300....J-7
653190480000....J-7
653190480300....J-7
653191100000....J-7
653191100300....J-7
653192200000....J-7
653192200300....J-7
654.0021....H-1
654.0024....I-9
654.0051....I-9
654.0080....H-1
654.0085....H-1
654.0091....I-10
654.0092....I-10
654.0120....I-6
654.0358....I-8
654.0359....I-8
654.0360....I-8
654.0362....I-8
654.0363....I-8
654.0365....I-8
654.0391....I-3
654.0392....I-3
654.0393....I-3
654.0394....I-3
654.0400....I-8
654.0410....I-8
654.0420....I-8
654.0751....I-8
654.0787....H-1
654.0788....H-1
654.0789....H-1
654.0790....H-1
654.0791....H-1
655.32090....I-9
655.46090....I-9

656.0924-000 ..... I-9
656.0926-000 ..... I-9
657.0121 ..... I-9
657.0936-000 ..... I-9
657.0938-000 ..... I-9
658.0950-000 ..... I-9
66010N ..... L-50
66020N ..... L-50
66040N ..... L-50
66070N ..... L-50
66090N ..... L-50
66502 ..... D-26
66503 ..... D-26
66504 ..... D-26
66512 ..... D-26
66513 ..... D-26
66514 ..... D-26
66542 ..... D-26
66543 ..... D-26
66544 ..... D-26
66552 ..... D-26
66553 ..... D-26
66554 ..... D-26
668280120000 ..... J-7
668280240000 ..... J-7
668281100000 ..... J-7
668282400000 ..... J-7
668290120000 ..... J-7
668290240000 ..... J-7
668291100000 ..... J-7
672.1100 ..... I-8
672.1101 ..... I-8
672.1200 ..... I-8
672.1300 ..... I-8
672.1301 ..... I-8
672.2002 ..... I-8
672.2004 ..... I-8
672.2008 ..... I-8
672.2012.1102 ..... I-8
672.2016.1102 ..... I-8
672.2300 ..... I-8
672.3100 ..... I-8
672.3200 ..... I-8
672.3300 ..... I-8
672.3302 ..... I-8
672.4024.1102 ..... I-8
672.4032.1102 ..... I-8
672.4116 ..... I-8
672.4216 ..... I-8
672.4316 ..... I-8
672.5048.1102 ..... I-8
672.5116 ..... I-8
672.5316 ..... I-8
672.5416 ..... I-8
672.5616 ..... I-8
672290124300 ..... J-7
672290244300 ..... J-7
680040040 ..... B-73
680040042 ..... B-73
680063040 ..... B-73
680063042 ..... B-73
680100040 ..... B-73
680100042 ..... B-73
680130042 ..... B-73
680200040 ..... B-73
680200042 ..... B-73
680320040 ..... B-73
680320042 ..... B-73
680400040 ..... B-73
680400042 ..... B-73
680630040 ..... B-73
680630042 ..... B-73
680800040 ..... B-73
680800042 ..... B-73
681000040 ..... B-73
681000042 ..... B-73
681250040 ..... B-73
681250042 ..... B-73
682290124300 ..... J-7
682290244300 ..... J-7
686.204 ..... H-1
686.205 ..... H-1
686.206 ..... H-1
686.207 ..... H-1
686.208 ..... H-1
686.209 ..... H-1
686.210 ..... H-1
686.211 ..... H-1
686.226 ..... H-1
686.227 ..... H-1
686.228 ..... H-1
686.229 ..... H-1
686.230 ..... H-1
686.231 ..... H-1
686.404 ..... H-1
686.408 ..... H-1
686.409 ..... H-1
686.410 ..... H-1
686.411 ..... H-1
686.428 ..... H-1
686.429 ..... H-1
686.430 ..... H-1
686.431 ..... H-1
692.912007141 ..... K-21
692.916007141 ..... K-21
692.919007141 ..... K-21
692.930007141 ..... K-21
69784 ..... D-30
69785 ..... D-30
69786 ..... D-30
69787 ..... D-30
69788 ..... D-30
69789 ..... D-30
699.913011010 ..... K-21
699.913014010 ..... K-21
699.913021110 ..... K-21
699.913024110 ..... K-21
699.915011010 ..... K-21
699.915014010 ..... K-21
699.915021110 ..... K-21
699.915024110 ..... K-21
699.931011010 ..... K-21
699.931014010 ..... K-21
699.931021110 ..... K-21
699.931024110 ..... K-21

**7**0.300.0640.0 ..... I-13
70.300.1040.0 ..... I-13
70.300.1640.0 ..... I-13
70.300.2440.0 ..... I-13
70.300.3253.0 ..... I-13
70.300.4840.0 ..... I-13
70.310.0640.0 ..... I-13
70.310.1040.0 ..... I-13
70.310.1640.0 ..... I-13
70.310.2440.0 ..... I-13
70.310.3253.0 ..... I-13
70.310.4840.0 ..... I-13
70.320.0628.0 ..... I-14
70.320.1028.0 ..... I-14
70.320.1628.0 ..... I-14
70.320.2428.0 ..... I-14
70.320.3228.0 ..... I-14
70.320.4828.0 ..... I-14
70.331.0635.1 ..... I-14
70.331.1035.1 ..... I-14
70.331.1635.1 ..... I-14
70.331.2435.1 ..... I-14
70.344.4835.1 ..... I-14
70.350.0635.1 ..... I-14
70.350.1035.1 ..... I-14
70.350.1635.1 ..... I-14
70.350.2435.1 ..... I-14
70.350.3235.1 ..... I-14
70.350.4835.1 ..... I-14
70.352.0635.1 ..... I-14
70.352.1035.1 ..... I-14
70.352.1635.1 ..... I-14
70.352.2435.1 ..... I-14
70.352.3235.1 ..... I-14
70.352.4835.1 ..... I-14
70.372.0635.1 ..... I-14
70.405.0653.0 ..... I-13
70.405.1053.0 ..... I-13
70.405.1653.0 ..... I-13
70.405.2453.0 ..... I-13
70.415.0653.0 ..... I-13
70.415.1053.0 ..... I-13
70.415.1653.0 ..... I-13
70.415.2453.0 ..... I-13
700 015 36 ..... M-4
70000 ..... M-2
7038 ..... E-20
7039 ..... E-20
7041 ..... E-20
7045 ..... E-20
7047 ..... E-20
7050 ..... E-20
7053 ..... E-20
71.320.1028.0 ..... I-14
71.320.1628.0 ..... I-14
71.320.2428.0 ..... I-14
71.331.1035.1 ..... I-14
71.331.1635.1 ..... I-14
71.331.2435.1 ..... I-14
71.350.1035.1 ..... I-14
71.350.1635.1 ..... I-14
71.350.2435.1 ..... I-14
71.352.1035.1 ..... I-14
71.352.1635.1 ..... I-14
71.352.2435.1 ..... I-14
71.372.1035.1 ..... I-14
71.372.1635.1 ..... I-14
71.372.2435.1 ..... I-14
712.911103210 ..... K-20
712.912104210 ..... K-20
712.913101210 ..... K-20
713.9301013111 ..... K-20
713.9301015111 ..... K-20
713.9301016111 ..... K-20
713.9301017111 ..... K-20
713.9301018111 ..... K-20
713.9311018111 ..... K-20
72692 ..... D-26
73.300.0353.0 ..... I-12
73.300.0453.0 ..... I-12
73.310.0353.0 ..... I-12
73.310.0453.0 ..... I-12
73.700.0753.0 ..... I-12
73.700.0853.0 ..... I-12
73.710.0753.0 ..... I-12
73.710.0853.0 ..... I-12
73.800.0853.0 ..... I-13
73.800.2453.0 ..... I-13
73.800.4253.0 ..... I-13
73.800.7253.0 ..... I-13
73.810.0853.0 ..... I-13
73.810.2453.0 ..... I-13
73.810.4253.0 ..... I-13
73.810.7253.0 ..... I-13
742F 2111 ..... B-34
75049 ..... L-56
75098 ..... L-56
75099 ..... L-56
750S-5SPLR-O ..... A-33
76.320.0729.0 ..... I-12
76.320.0753.0 ..... I-12
76.321.0729.0 ..... I-12
76.321.0753.0 ..... I-12
76.350.0736.1 ..... I-12
76.350.0760.1 ..... I-12
76.352.0736.1 ..... I-12
76.352.0760.1 ..... I-12
78010-00 ..... I-19
78011-00 ..... I-19
78176-01 ..... I-19
78180-00 ..... I-19
78180-02 ..... I-19
78181-00 ..... I-19
78181-05 ..... I-19
78184-00 ..... I-19
78220-00 ..... I-19
78220-01 ..... I-19
78220-02 ..... I-19
78224-00 ..... I-19
78224-01 ..... I-19
78224-02 ..... I-19
78234-00 ..... I-19
78235-00 ..... I-19
78236-00 ..... I-19
78290-00 ..... I-19
78291-00 ..... I-19
78297-00 ..... I-19
78298-00 ..... I-19
78299-00 ..... I-19
78300-00 ..... I-19
78301-00 ..... I-19
78303-00 ..... I-19
78304-00 ..... I-19
78304-01 ..... I-19
78307-00 ..... I-19
78308-00 ..... I-19
78309-00 ..... I-19
79016 ..... M-2
79035 ..... M-2
79050 ..... M-2
79070 ..... M-2
79448 ..... L-45
79449 ..... L-45
79840-00 ..... I-19
79844-00 ..... I-19
79846-00 ..... I-19
79847-00 ..... I-19

**8**0030 ..... E-24
80031 ..... E-24
80038 ..... E-24
80044 ..... E-24
80048 ..... E-24
80054 ..... E-24
80055 ..... E-24
80057 ..... E-24
80058 ..... E-24
80061 ..... E-24
80062 ..... E-24
80063 ..... E-24
80064 ..... E-24
80065 ..... E-24
80067 ..... E-24
80068 ..... E-24
80080 ..... E-24
80098 ..... E-24
80100 ..... E-24
80100-00 ..... I-20
80100-01 ..... I-20
80100-02 ..... I-20
80100-04 ..... I-20
8011-3 ..... K-54
80115 ..... E-24
80117 ..... E-24
80120 ..... E-24
80122 ..... E-24
80147 ..... E-24
80149 ..... E-24
80151 ..... E-24
80153 ..... E-24
80155 ..... E-24
80157 ..... E-24
80188-00 ..... I-20
80188-02 ..... I-20
80188-04 ..... I-20
80188-06 ..... I-20
80188-08 ..... I-20
80189-00 ..... I-20
80189-01 ..... I-20
80189-02 ..... I-20
80189-03 ..... I-20
80190-00 ..... I-20
80190-01 ..... I-20
80190-02 ..... I-20
80190-03 ..... I-20
80190-04 ..... I-20
80191-00 ..... I-20
8025HA2BPT ..... H-20
8025HD4BBLS ..... H-20
805.3335 ..... I-8
805.3337 ..... I-8
8400008WPYG ..... L-56
8400017WPYG ..... L-56
8400038WPYG ..... L-56
8400042WPYG ..... L-56
8400051WPYG ..... L-56
8400072WPYG ..... L-56
8400073WPYG ..... L-56
8400083WPYG ..... L-56
8400092WPYG ..... L-56
8400094WPYG ..... L-56
8401008WPYG ..... L-56
8401010WPYG ..... L-56
8409 1600 ..... B-34
842112 ..... L-56
8499 0001 ..... B-34
8499 5022 ..... B-34
8499 5032 ..... B-34
8499 6120 ..... B-34
8499 6130 ..... B-34
850600001 ..... H-23
850800001 ..... H-23
851200001 ..... H-23
851500001 ..... H-23
852000001 ..... H-23
852500001 ..... H-23
854000001 ..... H-23
860002400000 ..... J-8
863000240000 ..... J-8
863082400000 ..... J-8
86P1 1017 ..... B-34
86P1 1026 ..... B-34
86P1 1032 ..... B-34
86P1 1041 ..... B-34
86P1 1064 ..... B-34
86P2 2081 ..... B-34
86P2 2100 ..... B-34
86P2 2125 ..... B-34
86P2 2160 ..... B-34
875.4303 ..... I-10
88900N ..... L-53
88901 ..... L-53
88902 ..... L-53
88903 ..... L-53
88904 ..... L-53
88913 ..... L-53
88916 ..... L-53
88918 ..... L-53
889202400000 ..... J-29
88945 ..... L-53

**9**00070 ..... B-68
900071 ..... B-68
900075 ..... B-68
900076 ..... B-68
90010 ..... L-49
90020 ..... L-49
9002SMA ..... J-6
9003SMA ..... J-6
90040 ..... L-49
900430 ..... B-67
900453 ..... B-67
900454 ..... B-67
900463 ..... B-67
90061 ..... D-26
90062 ..... D-26
90063 ..... D-26
90064 ..... D-26
90070 ..... L-49
90081 ..... D-26
90082 ..... D-26
90083 ..... D-26
90084 ..... D-26
90090 ..... L-49
900S-5SPLR-O ..... A-33
90110 ..... L-49
9012 ..... J-6
90120 ..... L-49
9013 ..... J-6
9014 ..... J-6
90140 ..... L-49
90141 ..... J-6
9015 ..... J-6
90151 ..... J-6
90156 ..... D-29
90170N ..... L-49
90190N ..... L-49
9020SMA ..... J-6
90210 ..... L-49
9021SMA ..... J-6
90220 ..... L-49
9022SMA ..... J-6
9023SMA ..... J-6
90240 ..... L-49
9026SMA ..... J-6
90270N ..... L-49
9027SMA ..... J-6
90290N ..... L-49
90310 ..... L-49
90320 ..... L-49
90340 ..... L-49
90343 ..... D-30
90345 ..... D-30
90347 ..... D-30
90351 ..... D-29
90352 ..... D-29
90353 ..... D-29
90354 ..... D-29
90358 ..... D-29
90360 ..... D-29
90361 ..... D-29
90362 ..... D-29
90363 ..... D-29
90367 ..... D-30
90368 ..... D-30
90369 ..... D-30
90370 ..... D-30
90370N ..... L-49
90371 ..... D-30
90372 ..... D-30
90373 ..... D-30
90375 ..... D-30
90376 ..... D-30
90390N ..... L-49
90402 ..... D-29
90403 ..... D-29
90404 ..... D-29
90420 ..... L-49
90440N ..... L-49
90470 ..... L-49
9048SMA ..... J-6
90490N ..... L-49
9049SMA ..... J-6
90502 ..... D-29
90503 ..... D-29
90504 ..... D-29
90512 ..... D-30
90520N ..... L-49
90540 ..... L-49
90551 ..... D-30
90552 ..... D-30
90553 ..... D-30
90554 ..... D-30
90557 ..... D-30
90563 ..... D-29
90570N ..... L-49
90590 ..... L-49
90610 ..... D-30
90612 ..... D-30
90750 ..... D-33
90751 ..... D-33
90752 ..... D-33
90753 ..... D-33
90754 ..... D-33
90755 ..... D-33
90821 ..... D-29
90822 ..... D-29
90823 ..... D-29
90824 ..... D-29
90826 ..... D-29
90827 ..... D-30
90828 ..... D-30
91.030.4953.0 ..... I-12
91.030.5853.0 ..... I-12
91.030.5953.0 ..... I-12
91.030.6053.0 ..... I-12
91.921.3053.0 ..... I-12
91.922.3053.0 ..... I-12
91.931.3053.0 ..... I-12
91.931.9053.0 ..... I-12
91.931.9153.0 ..... I-12
91.932.3053.0 ..... I-12
91.932.9053.0 ..... I-12
91.932.9153.0 ..... I-12
91132 ..... D-27
91133 ..... D-27
91134 ..... D-27
91152 ..... D-27
91153 ..... D-27
91154 ..... D-27
91177 ..... D-27
91179 ..... D-27
91182 ..... D-27
91183 ..... D-27
91202 ..... D-27
91203 ..... D-27
91362 ..... D-27
91363 ..... D-27
91364 ..... D-27
91367 ..... D-27
91382 ..... D-27
91383 ..... D-27
91430 ..... D-27
92.030.4853.0 ..... I-12
92.030.5958.0 ..... I-12
92.031.9658.0 ..... I-12
92.032.9658.0 ..... I-12
92.931.3053.0 ..... I-12
92.932.3053.0 ..... I-12
920244 ..... B-68
920300 ..... B-68
9203SMA ..... J-5
9213SMA ..... J-5
9225HD4BBLS ..... H-20
9233SMA ..... J-5
9238HA2BPT ..... H-20
927224 ..... B-68
927244 ..... B-68
929121 ..... B-68
929221 ..... B-68
9311 ..... J-1
9323 2006 ..... B-40
9323 2008 ..... B-40
9323 4006 ..... B-40
9323 4008 ..... B-40
9323 4010 ..... B-40
9323 4012 ..... B-40
9323 4016 ..... B-40
9353 2006 ..... B-40
9353 2008 ..... B-40
9354 4006 ..... B-40
9354 4008 ..... B-40
9354 4010 ..... B-40
9354 4012 ..... B-40
9354 4016 ..... B-40
93547 ..... D-22
93558 ..... D-22
93621 ..... D-21
93625 ..... D-21
9364 4006 ..... B-40
9364 4008 ..... B-40
9364 4010 ..... B-40
9364 4012 ..... B-40
9364 4016 ..... B-40
93A050124 ..... K-14
93A050128 ..... K-14
93ACC0230 ..... K-14
9402SPA ..... J-4
9404SPA ..... J-4
94056 ..... E-21
94058 ..... E-21
94060 ..... E-21
94062 ..... E-21
941110 ..... B-67
9412SMA ..... J-4
941310 ..... B-67
9414SMA ..... J-4
9432SMA ..... J-4
9434SMA ..... J-4
94732 ..... D-34
94734 ..... D-34
94735 ..... D-34
94736 ..... D-34
94P4SPA ..... J-4
95.101.0800.0 ..... I-13
9503 4004 ..... B-39
9503 4006 ..... B-39
9503 4008 ..... B-39
9503 4010 ..... B-39
9503 4012 ..... B-39
9505 4006 ..... B-39
9505 4008 ..... B-39
9505 4010 ..... B-39
9505 4012 ..... B-39
9505 5012 ..... B-39
950530 ..... B-68
950531 ..... B-68
9505SPA ..... J-2
9506 4004 ..... B-39
9506 4006 ..... B-39
9506 4008 ..... B-39
9506 4010 ..... B-39
9506 4012 ..... B-39
9506 5012 ..... B-39
9509 4013 ..... B-39
9509 5020 ..... B-42
9509 5040 ..... B-42
9509 5063 ..... B-42
9509 5120 ..... B-42
9509 5160 ..... B-42
951115 ..... B-67
9513 4004 ..... B-39
9513 4006 ..... B-39
9513 4008 ..... B-39
9513 4010 ..... B-39
9513 4012 ..... B-39
9513 5012 ..... B-39
951315 ..... B-67
95152SMA ..... J-2
952030 ..... B-67
952035 ..... B-67
952070 ..... B-67
952090 ..... B-67
952100 ..... B-67
952110 ..... B-67
952115 ..... B-67
952121 ..... B-67
9523 3016 ..... B-41

9523 3025 B-41
9523 3040 B-41
9523 3063 B-41
9523 3080 B-41
9523 3100 B-41
9523 3120 B-41
9523 3160 B-41
9523 3200 B-41
9523 3250 B-41
9523 3320 B-41
9523 4016 B-41
9523 4025 B-41
9523 4040 B-41
9523 4063 B-41
9523 4080 B-41
9523 4100 B-41
9523 4120 B-41
9523 4160 B-41
9523 4200 B-41
9523 4250 B-41
9523 4320 B-41
952310 B-67
952315 B-67
952341 B-67
9523SNA J-2
952515 B-68
952520 B-68
953200 B-67
9553 3016 B-41
9553 3025 B-41
9553 3040 B-41
9553 3063 B-41
9553 3080 B-41
9553 3100 B-41
9553 3120 B-41
9553 3160 B-41
9553 4016 B-41
9553 4025 B-41
9553 4040 B-41
9553 4063 B-41
9553 4080 B-41
9553 4100 B-41
9553 4120 B-41
9553 4160 B-41
9594 4012 B-39
9594 9012 B-39
9599 4001 B-39
95A151340 K-7
95A151360 K-7
95A900052 K-14
95A900053 K-14
95ACC0024 K-7
95ACC0025 K-7
95ACC0026 K-7
95ACC0033 K-7
95P5SPA J-2
96.031.4053.1 I-11
96.031.4153.1 I-11
96.031.4253.1 I-11
96.031.4353.1 I-11
96.031.4554.3 I-11
96.031.5053.1 I-11
96.031.5054.3 I-11
96.032.4053.1 I-11
96.032.4153.1 I-11
96.032.4554.3 I-11
96.032.5053.1 I-11
96.032.5054.3 I-11
96.051.4153.1 I-11
96.051.4353.1 I-11
96.051.5053.1 I-11
96.052.4153.1 I-11
96.052.5053.1 I-11
9602SPA J-5
9604SMA J-5
961145 B-67
961146 B-67
961176 B-67
961180 B-67
961185 B-67
961200 B-67
961205 B-67
9612SMA J-5
9614SMA J-5
97.051.4053.1 I-11
97.051.5553.1 I-11
97.052.4053.1 I-11
97.052.5553.1 I-11
9701SPA J-3
9702SPA J-3
9704A/*B L-2
9704A/*GB L-2
97054 E-21
97056 E-21
97058 E-21
9705A/6 L-2
97060 E-21
97062 E-21
97066 E-21
9711 J-3
9712 J-3
97P1SPA J-3
97P2SPA J-3
99.414.6205.2 I-11
99.416.6205.2 I-11
99.530.0000.7 I-11
99.532.0000.7 I-11
9902002409 J-8
9902002459 J-8
9902002498 J-8
9902006009 J-8
9902006059 J-8
9902006098 J-8
9902023009 J-8
9902023059 J-8
9902023098 J-8
9902300000 J-8
9902823007 J-8
9902902499 J-8
9902906099 J-8
9902922099 J-8
990454 L-53
990506N L-51
990508N L-53
990510N L-53
990513N L-53
990514N L-53
990525N L-53
990664 L-53
990734 L-51
990735 L-53
990762 L-52
990764N L-52
990766N L-52
990768N L-52
990798N L-52
990824 L-52
990880 L-52
990883 L-52
991000 L-48
991002 L-48
991004 L-48
991008 L-48
991010 L-48
991011 L-48
991104 L-55
991105 L-55
991106 L-55
991107 L-55
991109 L-55
991110 L-55
991600 L-48
991601 L-48
991602 L-48
991606 L-48
991670 L-48
991671 L-48
992150 L-48

**A**03-M4 L-23
A03-M5 L-23
A03-M6 L-23
A06-M4 L-23
A06-M5 L-23
A06-M6 L-23
A06-M8 L-23
A1-M10 L-23
A1-M4 L-23
A1-M5 L-23
A1-M6 L-23
A1-M8 L-23
A10-M10 L-23
A10-M12 L-23
A10-M16 L-23
A10-M6 L-23
A10-M8 L-23
A14-M10 L-23
A14-M12 L-23
A14-M16 L-23
A14-M8 L-23
A19-M10 L-23
A19-M12 L-23
A19-M16 L-23
A19B-M8/15.5 L-24
A2-G-256-C C-23
A2-M10 L-23
A2-M4 L-23
A2-M5 L-23
A2-M6 L-23
A2-M8 L-23
A24-M10 L-23
A24-M12 L-23
A24-M16 L-23
A24-M8 L-23
A24B-M8/19 L-24
A3-M10 L-23
A3-M12 L-23
A3-M4 L-23
A3-M5 L-23
A3-M6 L-23
A3-M8 L-23
A30-M10 L-23
A30-M12 L-23
A30-M16 L-23
A30B-M8/19 L-24
A37-M10 L-23
A37-M12 L-23
A37-M16 L-23
A37B-M10/24.5 L-24
A48-M10/31 L-24
A48-M12 L-23
A48-M16 L-23
A48-M20 L-23
A5-M10 L-23
A5-M12 L-23
A5-M6 L-23
A5-M8 L-23
A7-M10 L-23
A7-M12 L-23
A7-M6 L-23
A7-M8 L-23
AAB05W10 K-35
AAB10W10 K-35
AB1/AP-3A K-1
AB1/CP-3A K-1
AC-05-2F D-37
AC05-1/2 K-27
AC05-1/4 K-27
ACB05P10 K-35
ACB10P10 K-35
ACS3-CAADC1 C-21
ACS3-CAADC2 C-21
ACS3-CAADC5 C-21
ACS3-CABDC2 C-21
ACS3-CAEN0105 C-21
ACS3-CAEN1105 C-21
ACS3-CAENA000 C-21
ACS3-CAENA105 C-21
ACS3-CAPW1105 C-21
ACS3-CAPW2105 C-21
ACS3-CAPW5105 C-21
ACS3-CAPW6105 C-21
ACS3-CAPWA000 C-21
ACS3-CAPWA205 C-21
ACS3-CAPWC000 C-21
ACS3-CAPWC405 C-21
ACS3-CAPWE000 C-21
ACS3-CAPWE605 C-21
ACS3-CNADC150 C-21
ACS3-CNEN2A00 C-21
ACS3-CNEN2C00 C-21
ACS3-CNENC200 C-21
ACS3-CNPW1A00 C-21
ACS3-CNTB0500 C-21
ACS3-CRPWA000 C-21
ACS3-CRPWA305 C-21
ACS3-CRPWC405 C-21
ACS3-IFSC2626 C-21
ACS3-IFSC5020 C-21
ACS3-MDTB5000 C-21
ACS3-MDTD2600 C-21
AD1/AP-3A K-1
AD1/CP-3A K-1
AD101-22AMB D-16
AD101-22AMG D-16
AD101-22AMR D-16
AD101-22AMW D-16
AD101-22AMY D-16
AD101-22HZB D-16
AD101-22HZG D-16
AD101-22HZR D-16
AD101-22HZW D-16
AD101-22HZY D-16
AD101-22TMB D-16
AD101-22TMG D-16
AD101-22TMR D-16
AD101-22TMW D-16
AD101-22TMY D-16
AD101-22VMB D-16
AD101-22VMG D-16
AD101-22VMR D-16
AD101-22VMW D-16
AD101-22VMY D-16
AD13.0 L-27
AD15.8 L-27
AD16-16DSB02 D-14
AD16-16DSB11 D-14
AD16-16DSB22 D-14
AD16-16DSG02 D-14
AD16-16DSG11 D-14
AD16-16DSG22 D-14
AD16-16DSR02 D-14
AD16-16DSR11 D-14
AD16-16DSR22 D-14
AD16-16DSW02 D-14
AD16-16DSW11 D-14
AD16-16DSW22 D-14
AD16-16DSY02 D-14
AD16-16DSY11 D-14
AD16-16DSY22 D-14
AD16-16MR02 D-14
AD16-16MR22 D-14
AD21.2 L-27
AD22-22AMB D-16
AD22-22AMG D-16
AD22-22AMR D-16
AD22-22AMW D-16
AD22-22AMY D-16
AD22-22D/KA22 D-14
AD22-22D/KB22 D-14
AD22-22D/KG22 D-14
AD22-22D/KR22 D-14
AD22-22D/KW22 D-14
AD22-22D/KY22 D-14
AD22-22DRG02 D-15
AD22-22DRG11 D-15
AD22-22DRG22 D-15
AD22-22DSA01 D-14
AD22-22DSA02 D-14
AD22-22DSA11 D-14
AD22-22DSA22 D-14
AD22-22DSA38 D-14
AD22-22DSB01 D-14
AD22-22DSB02 D-14
AD22-22DSB11 D-14
AD22-22DSB22 D-14
AD22-22DSB38 D-14
AD22-22DSG01 D-14
AD22-22DSG02 D-14
AD22-22DSG11 D-14
AD22-22DSG22 D-14
AD22-22DSG38 D-14
AD22-22DSR01 D-14
AD22-22DSR02 D-14
AD22-22DSR11 D-14
AD22-22DSR22 D-14
AD22-22DSR38 D-14
AD22-22DSW01 D-14
AD22-22DSW02 D-14
AD22-22DSW11 D-14
AD22-22DSW22 D-14
AD22-22DSW38 D-14
AD22-22DSY01 D-14
AD22-22DSY02 D-14
AD22-22DSY11 D-14
AD22-22DSY22 D-14
AD22-22DSY38 D-14
AD22-22HZB D-16
AD22-22HZG D-16
AD22-22HZR D-16
AD22-22HZW D-16
AD22-22HZY D-16
AD22-22MK02 D-15
AD22-22MK22 D-15
AD22-22MR02 D-15
AD22-22MR22 D-15
AD22-22SR02 D-15
AD22-22SR22 D-15
AD22-22VAMB D-16
AD22-22VAMG D-16
AD22-22VAMR D-16
AD22-22VAMW D-16
AD22-22VAMY D-16
AD22-22VBB D-16
AD22-22VBG D-16
AD22-22VBR D-16
AD22-22VBW D-16
AD22-22VBY D-16
AD22-22VMB D-16
AD22-22VMG D-16
AD22-22VMR D-16
AD22-22VMW D-16
AD22-22VMY D-16
AD25.0 L-27
AD30-30DSB02 D-15
AD30-30DSB22 D-15
AD30-30DSB38 D-15
AD30-30DSG02 D-15
AD30-30DSG22 D-15
AD30-30DSG38 D-15
AD30-30DSR02 D-15
AD30-30DSR22 D-15
AD30-30DSR38 D-15
AD30-30DSW02 D-15
AD30-30DSW22 D-15
AD30-30DSW38 D-15
AD30-30DSY02 D-15
AD30-30DSY22 D-15
AD30-30DSY38 D-15
AD30-30MR02 D-15
AD30-30MR22 D-15
AD34.5 L-27
AD42.5 L-27
AD54.5 L-27
ADR1200/F5A L-13
ADXL0018600 A-14
ADXL0030600 A-14
ADXL0045600 A-14
ADXL0060600 A-14
ADXL0075600 A-14
ADXL0085600 A-14
ADXL0115600 A-14
ADXL0135600 A-14
ADXL0162600 A-14
ADXL0195600 A-14
ADXL0250600 A-14
ADXL0320600 A-14
ADXNB006 A-13
ADXNB00624 A-13
ADXNB012 A-13
ADXNB01224 A-13
ADXNB018 A-13
ADXNB01824 A-13
ADXNB025 A-13
ADXNB02524 A-13
ADXNB030 A-13
ADXNB03024 A-13
ADXNB038 A-13
ADXNB03824 A-13
ADXNB045 A-13
ADXNB04524 A-13
ADXNP012 A-13
ADXNP01224 A-13
ADXNP018 A-13
ADXNP01824 A-13
ADXNP025 A-13
ADXNP02524 A-13
ADXNP030 A-13
ADXNP03024 A-13
ADXNP038 A-13
ADXNP03824 A-13
ADXNP045 A-13
ADXNP04524 A-13
ADXT0034 A-14
ADXT0060 A-14
ADXT0084 A-14
ADXT0104 A-14
ADXT0126 A-14
ADXT0139 A-14
ADXT0165 A-14
ADXT0187 A-14
ADXT0230 A-14
ADXT0311 A-14
ADXT0410 A-14
ADXT0506 A-14
ADXT0554 A-14
ADXTC01KIT A-14
ADXTRTU A-14
ADXTTCP A-14
AE1/AP-1A K-1
AE1/AP-2A K-1
AE1/CP-1A K-1
AE1/CP-2A K-1
AE6/AP-3A K-1
AE6/AP-3F K-1
AE6/AP-4A K-1
AE6/AP-4F K-1
AE6/CP-3A K-1
AE6/CP-3F K-1
AE6/CP-4A K-1
AE6/CP-4F K-1
AEA05P00 K-35
AEA10P00 K-35
AFA05S00 K-35
AFA10S00 K-35
AGD05S00 K-35
AGD10S00 K-35
AGQ22F-11/E/JS/02/B ... D-17
AGQ22F-11/E/JS/02/G ... D-17
AGQ22F-11/E/JS/02/R ... D-17
AGQ22F-11/E/JS/02/W .. D-17
AGQ22F-11/E/JS/02/Y ... D-17
AGQ22F-11/E/JS/22/B ... D-17
AGQ22F-11/E/JS/22/G ... D-17
AGQ22F-11/E/JS/22/R ... D-17
AGQ22F-11/E/JS/22/W .. D-17
AGQ22F-11/E/JS/22/Y ... D-17
AGQ22F-11/JS D-17
AGQ22F-11/Z/JS D-17
AH-0217 K-54
AH-03127-BS K-54
AH-03127-S K-54
AH02HC-5A C-12
AH04AD-5A C-12
AH04DA-5A C-12
AH04HC-5A C-12
AH04PT-5A C-12
AH04TC-5A C-12
AH06XA-5A C-12
AH08AD-5B C-12
AH08AD-5C C-12
AH08DA-5B C-12
AH08DA-5C C-12
AH08TC-5A C-12
AH10EN-5A C-12
AH10PM-5A C-12
AH10SCM-5A C-12
AH16AM10N-5A C-11
AH16AM30N-5A C-11
AH16AN01P-5A C-11
AH16AN01R-5A C-11
AH16AN01S-5A C-11
AH16AN01T-5A C-11
AH16AP11P-5A C-11
AH16AP11R-5A C-11
AH16AP11T-5A C-11
AH32AM10N-5A C-11
AH32AM10N-5C C-11
AH32AN02P-5C C-11
AH32AN02T-5A C-11
AH32AN02T-5C C-11
AH64AM10N-5C C-11
AH64AN02P-5C C-11
AH64AN02T-5C C-11
AHA05 K-35
AHA10 K-35
AHACAB06-5A C-12
AHACAB10-5A C-12
AHACAB15-5A C-12
AHACAB30-5A C-12
AHADINADP1-5A C-12
AHASP01-5A C-12
AHBP04M1-5A C-11
AHBP06E1-5A C-11
AHBP06M1-5A C-11
AHBP08E1-5A C-11
AHBP08M1-5A C-11
AHBP12M1-5A C-11
AHCPU500-RS2 C-11
AHCPU511-EN C-11
AHCPU511-RS2 C-11
AHCPU521-EN C-11
AHCPU531-EN C-11
AHPS05-5A C-11
AHPS15-5A C-11
AHRTU-ETHN-5A C-12
AK1/A0-1H K-2
AK1/A0-2H K-2
AK1/A0-3H K-2
AK1/A0-4H K-2
AK1/AN-1A K-2
AK1/AN-2A K-2
AK1/AP-1A K-2
AK1/AP-2A K-2
AK1/CN-1A K-2
AK1/CN-2A K-2
AK1/CP-1A K-2
AK1/CP-2A K-2
AK6/BN-1A K-2
AK6/BN-2A K-2
AK6/BN-3H K-2
AK6/BN-4H K-2
AK6/BP-1A K-2
AK6/BP-2A K-2
AK6/BP-3H K-2
AK6/BP-4H K-2
AK6/D2-5H K-3
AM1/A0-1H K-1
AM1/A0-2H K-1
AM1/A0-3H K-1
AM1/A0-4H K-1
AM1/AN-1A K-1
AM1/AN-2A K-1
AM1/AP-1A K-1
AM1/AP-2A K-1
AM1/BP-1H K-1
AM1/BP-2H K-1
AM1/CN-1A K-1
AM1/CN-2A K-1
AM1/CP-1A K-1
AM1/CP-2A K-1
AM1/D2-5H K-3
AM6/AP-3A K-1
AM6/AP-3H K-1
AM6/AP-4A K-1
AM6/AP-4H K-1
AM6/CP-3A K-1
AM6/CP-3H K-1
AM6/CP-4A K-1
AM6/CP-4H K-1
ANE10-M10 L-22
ANE10-M12 L-22
ANE10-M6 L-22
ANE10-M8 L-22
ANE2-M4 L-22
ANE2-M5 L-22
ANE2-M6 L-22
ANE2-M8 L-22
ANE2-P12 L-22
ANE2-U4 L-22
ANE2-U5 L-22
ANE3-M4 L-22
ANE3-M5 L-22
ANE3-M6 L-22
ANE3-M8 L-22
ANE3-P14 L-22
ANE3-U4 L-22
ANE3-U5 L-22
ANE5-M10 L-22
ANE5-M5 L-22
ANE5-M6 L-22
ANE5-M8 L-22
ANE5-P16 L-22
ANE7-M10 L-22
ANE7-M12 L-22
ANE7-M6 L-22
ANE7-M8 L-22
ANE7-P20 L-22
ANT 2 J-31
AR-8P J-26
AS-ATXB C-8
AS-F232 C-9
AS-F2AD C-9
AS-F2DA C-9
AS-F485 C-9
AS-FCOPM C-9
AS-FECAT C-9
AS-FEN02 C-9
AS-FFTP01 C-9
AS-FPFN02 C-9
AS-PS02 C-8
AS-PS02A C-8
AS00SCM-A C-9

AS01DNET-A..... C-9
AS02ADH-A..... C-8
AS02HC-A..... C-9
AS02LC-A..... C-9
AS02PU-A..... C-9
AS04AD-A..... C-8
AS04DA-A..... C-8
AS04RTD-A..... C-8
AS04SIL-A..... C-9
AS04TC-A..... C-8
AS06RTD-A..... C-8
AS06XA-A..... C-8
AS08AD-B..... C-8
AS08AD-C..... C-8
AS08AM10N-A..... C-8
AS08AN01P-A..... C-8
AS08AN01R-A..... C-8
AS08AN01T-A..... C-8
AS08TC-A..... C-8
AS132P-A..... C-7
AS132R-A..... C-7
AS148P-A..... C-7
AS148R-A..... C-7
AS164P-A..... C-7
AS164R-A..... C-7
AS16AM10N-A..... C-8
AS16AN01P-A..... C-8
AS16AN01R-A..... C-8
AS16AN01T-A..... C-8
AS16AP11P-A..... C-8
AS16AP11R-A..... C-8
AS16AP11T-A..... C-8
AS218PX-A..... C-7
AS218RX-A..... C-7
AS218TX-A..... C-7
AS228P-A..... C-7
AS228R-A..... C-7
AS228T-A..... C-7
AS300N-A..... C-7
AS320P-B..... C-7
AS320T-B..... C-7
AS324MT-A..... C-7
AS32AM10N-A..... C-8
AS32AN02T-A..... C-8
AS332P-A..... C-7
AS332T-A..... C-7
AS64AM10N-A..... C-8
AS64AN02T-A..... C-8
ASC55-EU..... L-48
ASD-A2-0121-M..... C-19
ASD-A2-0421-M..... C-19
ASD-A2-0721-M..... C-19
ASD-A2-1021-M..... C-19
ASD-A2-1521-M..... C-19
ASD-A3-0121-E..... C-19
ASD-A3-0121-M..... C-19
ASD-A3-0421-E..... C-19
ASD-A3-0421-M..... C-19
ASD-A3-0721-E..... C-19
ASD-A3-0721-M..... C-19
ASD-A3-1021-E..... C-19
ASD-A3-1021-M..... C-19
ASD-A3-1521-E..... C-19
ASD-A3-1521-M..... C-19
ASD-A3-1B43-E..... C-19
ASD-A3-1B43-M..... C-19
ASD-A3-1F43-E..... C-19
ASD-A3-1F43-M..... C-19
ASD-A3-2043-E..... C-19
ASD-A3-2043-M..... C-19
ASD-A3-3043-E..... C-19
ASD-A3-3043-M..... C-19
ASD-A3-4543-E..... C-19
ASD-A3-4543-M..... C-19
ASD-A3-5543-E..... C-19
ASD-A3-5543-M..... C-19
ASD-A3-7543-E..... C-19
ASD-A3-7543-M..... C-19
ASD-ABEN0000..... C-21
ASD-ABEN0005..... C-21
ASD-ABPW0005..... C-21
ASD-ABPW0105..... C-21
ASD-B3A-0421-E..... C-19
ASD-B3A-0421-M..... C-19
ASD-B3A-0721-E..... C-19
ASD-B3A-0721-M..... C-19
ASD-B3A-1021-E..... C-19
ASD-B3A-1021-M..... C-19
ASD-B3A-1521-E..... C-19
ASD-B3A-1521-M..... C-19
ASD-BM-50A..... C-21
ASD-CAEN1000..... C-21
ASD-CAEN1005..... C-21
ASD-CAPW1000..... C-21
ASD-CAPW1005..... C-21
ASD-CAPW1105..... C-21
ASD-CAPW1305..... C-21
ASD-CAPW2000..... C-21
ASD-CAPW2305..... C-21
ASD-CARS0003..... C-21
ASD-CNIE0B06..... C-21
ASD-CNSC0026..... C-21
ASD-CNSC0050..... C-21
ASD-IF-SC5020..... C-21
ASDBCAPW0000..... C-21
ASDBCAPW0100..... C-21
ASRTU-EC16AP1PA..... C-9
ASRTU-EC16AP1TA..... C-9
AT1/A0-1H..... K-3
AT1/A0-2H..... K-3
AT1/A0-3H..... K-3
AT1/A0-4H..... K-3
AT1/AN-1A..... K-3
AT1/AN-2A..... K-3
AT1/AP-1A..... K-3
AT1/AP-2A..... K-3
AT1/CN-1A..... K-3
AT1/CN-2A..... K-3
AT1/CP-1A..... K-3
AT1/CP-2A..... K-3
AT6/BN-3H..... K-3
AT6/BN-4H..... K-3
AT6/BP-3H..... K-3
AT6/BP-4H..... K-3
ATL100..... F-3
ATL500..... F-3
ATL600..... F-3
ATL601..... F-3
ATL610..... F-3
ATL800..... F-3
ATL900..... F-3
AX-300NA0PA1..... C-7
AX-304ELA0PA1P..... C-7
AX-308EA0MA1T..... C-7
AX-324NA0PA1P..... C-7
AX-816EP0CB1P..... C-7

**B**-TC320NDF..... M-6
B125024..... A-2
B160024..... A-2
B50000..... A-2
B500400..... A-2
B63000..... A-2
B630400..... A-2
BA135..... A-7
BA1796..... A-7
BA1846..... A-7
BA235..... A-7
BA435..... A-7
BB1V..... L-19
BB2V..... L-19
BB5V..... L-19
BCE0312..... F-4
BCE0524..... F-4
BCE0612..... F-4
BCE1024..... F-4
BCE1212..... F-4
BCE2V524..... F-4
BCF012524..... F-4
BCF025012..... F-4
BCF025024..... F-4
BCF045012..... F-4
BCG0524..... F-4
BCG0612..... F-4
BCG1024..... F-4
BCG1212..... F-4
BCGM12B..... L-31
BCGM12G..... L-31
BCGM16B..... L-31
BCGM16G..... L-31
BCGM20B..... L-31
BCGM20G..... L-31
BCGX00..... F-4
BD-B101..... K-53
BD-B102..... K-53
BD-D01..... K-53
BD-D04..... K-53
BD-D11..... K-53
BD-D12..... K-53
BD-G01..... K-53
BD-G21..... K-53
BD-G22..... K-53
BD-G41..... K-53
BD-G42..... K-53
BD-K01..... K-53
BD-K02..... K-53
BD-K33..... K-53
BD-K45..... K-53
BD-P01..... K-53
BD1-4V..... L-21
BD1-4VD..... L-21
BD2-5V..... L-21
BD2-5VD..... L-21
BD264..... B-8
BD364..... B-8
BD464..... B-8
BD5-5V..... L-21
BD5-5VD..... L-21
BDC240F..... B-8
BDC280E..... B-8
BDC380E..... B-8
BDC480E..... B-8
BF0004A..... A-4
BF0004L..... A-4
BF0022A..... A-4
BF0022L..... A-4
BF0031A..... A-4
BF0031L..... A-4
BF0040A..... A-4
BF0040L..... A-4
BF0901A..... A-2
BF0910A..... A-2
BF0910D..... A-3
BF0910L..... A-3
BF09T2A..... A-4
BF09T4A..... A-2
BF09T4D..... A-3
BF11500A..... A-2
BF11500E..... A-3
BF1201A..... A-2
BF1210A..... A-2
BF1210D..... A-3
BF1210L..... A-3
BF12T4A..... A-2
BF15000A..... A-2
BF15000E..... A-3
BF16000E..... A-2
BF160T4E..... A-2
BF1801A..... A-2
BF1810A..... A-2
BF1810D..... A-3
BF1810L..... A-3
BF18T0A..... A-4
BF18T0D..... A-4
BF18T2A..... A-4
BF18T2D..... A-4
BF18T4A..... A-2
BF18T4D..... A-3
BF19500E..... A-2
BF195T4E..... A-2
BF23000E..... A-2
BF230T4E..... A-2
BF2501A..... A-2
BF2510A..... A-2
BF2510D..... A-3
BF2510L..... A-3
BF2600A..... A-2
BF2600D..... A-3
BF264..... B-8
BF26500E..... A-2
BF265T4E..... A-2
BF26T0D..... A-4
BF26T2A..... A-4
BF26T2D..... A-4
BF26T4A..... A-2
BF3200A..... A-2
BF3200D..... A-3
BF3200L..... A-3
BF33000E..... A-2
BF330T4E..... A-2
BF364..... B-8
BF3800A..... A-2
BF3800D..... A-3
BF3800L..... A-3
BF38T2A..... A-4
BF38T2D..... A-4
BF38T4A..... A-2
BF40000E..... A-2
BF4000A..... A-2
BF4000E..... A-3
BF400T4E..... A-2
BF464..... B-8
BF5000A..... A-2
BF5000E..... A-3
BF6500A..... A-2
BF6500E..... A-3
BF8000A..... A-2
BF8000E..... A-3
BF80T2E..... A-4
BF9400A..... A-2
BF9400E..... A-3
BF9500A..... A-2
BF9500E..... A-3
BFA009.10..... A-12
BFA012.14..... A-12
BFA018.18..... A-12
BFA025.23..... A-12
BFA026.32..... A-12
BFA038.38..... A-12
BFA050.50..... A-12
BFA065.65..... A-12
BFA080.82..... A-12
BFA095.110..... A-12
BFA115.125..... A-12
BFA150.150..... A-12
BFK11500A..... A-4
BFK1210A..... A-4
BFK15000A..... A-4
BFK1810A..... A-4
BFK2600A..... A-4
BFK3200A..... A-4
BFK3800A..... A-4
BFK5000A..... A-4
BFK8000A..... A-4
BFX1002..... A-5
BFX1004..... A-5
BFX1011..... A-5
BFX1020..... A-5
BFX1022..... A-5
BFX1031..... A-5
BFX1040..... A-5
BFX10C01..... A-5
BFX10C10..... A-5
BFX10K3..... A-4
BFX10K4..... A-4
BFX1202..... A-5
BFX1211..... A-5
BFX1220..... A-5
BFX12C02..... A-5
BFX12C11..... A-5
BFX12C20..... A-5
BFX30..... A-7
BFX3101..... A-6
BFX3102..... A-6
BFX3131..... A-6
BFX3201..... A-6
BFX3231..... A-6
BFX3232..... A-6
BFX3301..... A-6
BFX3331..... A-6
BFX3361..... A-6
BFX3371..... A-6
BFX3401..... A-6
BFX3431..... A-6
BFX3432..... A-6
BFX3461..... A-6
BFX3471..... A-6
BFX3501..... A-6
BFX3531..... A-6
BFX3561..... A-6
BFX3571..... A-6
BFX3583..... A-7
BFX3584..... A-7
BFX3592..... A-6
BFX3593..... A-6
BFX3601..... A-6
BFX3631..... A-6
BFX3661..... A-6
BFX3671..... A-6
BFX3683..... A-7
BFX3684..... A-7
BFX3692..... A-6
BFX3693..... A-6
BFX42..... A-2
BFX43..... A-2
BFX44..... A-2
BFX5000..... A-6
BFX5001..... A-6
BFX5002..... A-6
BFX5003..... A-6
BFX5300..... A-6
BFX5301..... A-6
BFX5303..... A-6
BFX5400..... A-6
BFX5401..... A-6
BFX5403..... A-6
BFX5500..... A-6
BFX5503..... A-6
BFX641..... A-6
BFX642..... A-6
BFX77048..... A-7
BFX77125..... A-7
BFX77240..... A-7
BFX79415..... A-7
BFX80..... A-7
BFX805..... A-6
BFX806..... A-6
BFX835..... A-7
BFX836..... A-7
BFX845..... A-7
BFX846..... A-7
BFX8508..... A-6
BFX8608..... A-6
BFX8901..... A-7
BFX8902..... A-7
BFX91A..... A-7
BFX92A..... A-7
BFX93A..... A-7
BFX93E..... A-7
BFX94A..... A-7
BFX94E..... A-7
BFX95E..... A-7
BFX96E..... A-7
BFX99040T..... A-7
BFX99050T..... A-7
BFX99065T..... A-7
BFX99080T..... A-7
BFX99095T..... A-7
BFX99115T..... A-7
BFX99150T..... A-7
BFX99195T..... A-7
BFX99230T..... A-7
BFXD42..... A-3
BG0022A..... A-1
BG0031A..... A-1
BG0040A..... A-1
BG0610A..... A-1
BG0901A..... A-1
BG0901D..... A-1
BG0910A..... A-1
BG0910D..... A-1
BG09T2A..... A-1
BG09T2D..... A-1
BG09T4A..... A-1
BG09T4D..... A-1
BG1201A..... A-1
BG1210A..... A-1
BGP09T4A..... A-1
BGX1002..... A-1
BGX1004..... A-1
BGX1011..... A-1
BGX1020..... A-1
BGX1022..... A-1
BGX1040..... A-1
BGX5000..... A-1
BGX8000..... A-1
BOC 1000..... L-35
BOC 1005..... L-35
BOC 1010..... L-35
BRF1000..... L-36
BRF1005..... L-36
BRF1010..... L-36
BRF1015..... L-36
BRF1020..... L-36
BRF1045..... L-36
BS232VE..... B-45
BS6/00-0C..... K-11
BS8/00-0C..... K-11
BSC/00-0C..... K-11
BT1-10V..... L-20
BT1-14V..... L-20
BT1-18V..... L-20
BT2-10V..... L-20
BT2-13V..... L-20
BT2-18V..... L-20
BT5-10V..... L-20
BT5-18V..... L-20
BTC280E..... B-8
BTC380E..... B-8
BTC480E..... B-8
BV4/00-0C..... K-11
BV6/00-0C..... K-11
BVC/00-0C..... K-11
BX04SR/0A-HB..... K-13

**C**12P/00-3E..... K-4
C18P/A0-1A..... K-4
C18P/A0-2A..... K-4
C18P/BN-1E..... K-4
C18P/BN-2E..... K-4
C18P/BP-1E..... K-4
C18P/BP-2E..... K-4
C18P/C0-1A..... K-4
C18P/C0-2A..... K-4
C30P/00-1A..... K-4
C30P/00-2A..... K-4
C30P/BN-1E..... K-4
C30P/BN-2E..... K-4
C30P/BP-1E..... K-4
C30P/BP-2E..... K-4
C41F-1Z-C2-1..... J-26
C9 cable..... F-6
CA00015..... K-23
CA00103..... K-23
CA00142..... K-23
CA00148..... K-23
CAP-Y..... K-30
CB1852L..... L-48
CBM-CC01A..... A-26
CBM-CC02A..... A-26
CBM-CL01A..... A-26
CBM-CL02A..... A-26
CD226J..... B-9
CD241J..... B-9
CD264J..... B-9
CD464J..... B-9
CDC584Z..... B-9
CDC684Z..... B-9
CE007508F..... L-21
CE010010F..... L-21
CE015010F..... L-21
CE025012F..... L-21
CE040012F..... L-21
CE060012F..... L-21
CE100012F..... L-21
CE160012F..... L-21
CE250016F..... L-21
CE264J..... B-9
CF264J..... B-9
CF464J..... B-9
CFC584H..... B-9
CFC684Z..... B-9
CFX 1005..... L-39
CFX 1020..... L-39
CFX 1023..... L-39
CFX 1035..... L-39
CFX 1045..... L-39
CFX 1060..... L-39
CFX 1070..... L-39
CFX 1076..... L-39
CFX 1090..... L-39
CFX 1100..... L-39
CFX 1115..... L-39
CFX 1135..... L-39
CFX 1145..... L-39
CFX 1150..... L-39
CFX 1170..... L-39
CFX 1180..... L-39
CFX 1185..... L-39
CFX 1200..... L-39
CFX 1210..... L-39
CFX 1215..... L-39
CFX 1230..... L-39
CFX 1240..... L-39
CFX 1245..... L-39
CFX 1260..... L-39
CFX 1270..... L-39
CFX 1275..... L-39
CFX 1285..... L-39
CFX 1300..... L-39
CM1300..... K-30
CM1305..... K-30
CM1306..... K-30
CM1307..... K-30
CM1308..... K-30
CM1309..... K-30
CM1701..... K-30
CM1703..... K-30
CM1704..... K-30
CM1705..... K-30
CM1743..... K-30
CMC-EC01..... A-30
CMC-EIP02..... A-30
CMC-PD01..... A-30
CMC-PN01..... A-30
CMM-COP02..... A-26
CMM-EC02..... A-26
CMM-EIP02..... A-26
CMM-EIP03..... A-26
CMM-PN02..... A-26
CMV100D..... K-30
CMV101D..... K-30
CMV103D..... K-30
CMV104D..... K-30
CMV105D..... K-30
CMV16001C..... K-30
CMV16011C..... K-30
CMV16031C..... K-30
CMV16041C..... K-30
CMV16051C..... K-30
CN-71-C2..... K-17
CN-73-C2..... K-17
CN-73-C5..... K-17
CN06-S01-H25..... I-17
CN06-S01-LD6..... I-17
CN06-S01-LM6..... I-17
CN06-S01-M5..... I-17
CN06-S02-H25..... I-17
CN06-S02-LD6..... I-17
CN06-S02-LM6..... I-17
CN06-S02-M5..... I-17
CN06-W01-16..... I-17
CN06-W01-25..... I-17
CN06-W02-16..... I-17
CN06-W02-25..... I-17
CN08-S01-H50..... I-17
CN08-S01-LD8..... I-17
CN08-S01-LM6..... I-17
CN08-S01-M6..... I-17
CN08-S02-H50..... I-17
CN08-S02-LD8..... I-17
CN08-S02-LM6..... I-17
CN08-S02-M6..... I-17
CN08-W01-35..... I-17
CN08-W01-50..... I-17
CN08-W02-35..... I-17
CN08-W02-50..... I-17
CN12-S01-H120..... I-17
CN12-S01-LD10..... I-17
CN12-S01-LM10..... I-17
CN12-S01-M8..... I-17
CN12-S02-H120..... I-17
CN12-S02-LD10..... I-17
CN12-S02-LM10..... I-17
CN12-S02-M8..... I-17
CN12-W01-120..... I-17
CN12-W01-70..... I-17
CN12-W01-95..... I-17
CN12-W02-120..... I-17
CN12-W02-70..... I-17
CN12-W02-95..... I-17
CNTRWT/100..... K-35
CNTRWT/360..... K-35
CQ55/BN-3E..... K-4
CQ55/BP-3E..... K-4
CR0/0B-1V..... K-13
CR18SCF05ATO..... K-15
CR18SCN08ATO..... K-15
CR18XSCF08DPRY-E2... K-15
CR18XSCN12DNRY-E2.. K-15
CR18XSCN12DPRY-E2 .. K-15
CR30XSCF15DPRY-E2... K-15
CR30XSCN25DNRY-E2 .. K-15
CR30XSCN25DPRY-E2 .. K-15

Crimpit 2.4 ..... M-3
Crimpit F16L ..... M-3
Crimpit F25L ..... M-3
Crimpit F6L ..... M-3
Crimpit IT6L ..... M-3
CS 60 ..... M-4
CS-800 ..... L-32
CTA4000A ..... J-29
CTA4001A ..... J-29
CTA4100A ..... J-29
CTA4100D ..... J-29
CTA4101D ..... J-29
CUT-ADR ..... L-13
CVB-039 ..... L-48
CX01 ..... F-6
CX02 ..... F-6
CX04 ..... A-13
CZ-7120 ..... K-30
CZ-7121 ..... K-30
CZ-7141 ..... K-30
CZ-7144 ..... K-30
CZ-7310 ..... K-30
CZ-7311 ..... K-30
CZ-7312 ..... K-30
CZ001 ..... B-9

**D**-48Y ..... J-29
DCM15230A ..... J-32
DCM5024D ..... J-32
DCM5230A ..... J-32
DCM5400A ..... J-32
DCRG 8 ..... F-5
DCRG 8F ..... F-5
DCRL 3 ..... F-5
DCRL 5 ..... F-5
DCRL 8 ..... F-5
DCTLA4800180 ..... A-4
DCTLA4800360 ..... A-4
DCTLA4800600 ..... A-4
DCTLA4801200 ..... A-4
DCW15230A ..... J-32
DCW5230A ..... J-32
DDCT230A ..... J-30
DDTC230A ..... J-32
DDTCT230A ..... J-32
DDVW3400A ..... J-32
DEF1/F230A ..... J-34
DIAV-0000005UPC ..... C-12
DIAV-0000010UPC ..... C-12
DIAV-010640000C ..... C-12
DIAV-015120000C ..... C-12
DIAV-0300005UPA ..... C-12
DIAV-0300010UPA ..... C-12
DLL024AD ..... J-31
DLL230A ..... J-31
DLL400A ..... J-31
DLL4024AD ..... J-31
DLL4230A ..... J-31
DLL4400A ..... J-31
DLS230A ..... J-32
DMECD ..... E-1
DMED100T1 ..... E-1
DMED110T1 ..... E-1
DMED111 ..... E-1
DMED120T1 ..... E-1
DMED121 ..... E-1
DMED130LM ..... E-1
DMED300T2 ..... E-1
DMED310T2 ..... E-1
DMED311 ..... E-1
DMED330 ..... E-1
DMFT012AD ..... J-30
DMFT024AD ..... J-30
DMFT110A ..... J-30
DMFT230A ..... J-30
DMFT400A ..... J-30
DMG100 ..... E-2
DMG110 ..... E-2
DMG200 ..... E-2
DMG210 ..... E-2
DMG300 ..... E-2
DMG500 ..... E-3
DMG510 ..... E-3
DMG600 ..... E-3
DMG610 ..... E-3
DMG611R0500 ..... E-3
DMG611R3000 ..... E-3
DMG615 ..... E-3
DMG620 ..... E-3
DMG7500 ..... E-5
DMG8000 ..... E-5
DMG9000 ..... E-5
DMK00R1 ..... E-8
DMK01R1 ..... E-8
DMK10R1 ..... E-8
DMK11R1 ..... E-8
DMK16R1 ..... E-8
DMK70 ..... E-7
DMK70R1 ..... E-7
DMK71R1 ..... E-7
DMK75R1 ..... E-7
DMK80R1 ..... E-7
DMK81R1 ..... E-7
DMK83R1 ..... E-7
DOD230A ..... J-30
DOP-103BQ ..... C-13
DOP-103WQ ..... C-13
DOP-107BV ..... C-13
DOP-107EG ..... C-13
DOP-107EV ..... C-13
DOP-107WV ..... C-13
DOP-110CS ..... C-13
DOP-110IS ..... C-13
DOP-110WS ..... C-13
DOP-112MX ..... C-13
DOP-115MX ..... C-13
DPA-FMKIT ..... K-28
DPA-PFKIT ..... K-28
DPA01M-P ..... K-28
DPA01N-P ..... K-28
DPA01P-P ..... K-28
DPA01Q-P ..... K-28
DPA10M-P ..... K-28
DPA10N-P ..... K-28
DPA10P-P ..... K-28
DPB-N7779 ..... A-31
DPF1/K400A ..... J-31
DPF1/K525A ..... J-31
DPF1/N400A ..... J-31
DPF1110A ..... J-31
DPF1400A ..... J-31
DPF1525A ..... J-31
DPP1230A ..... J-31
DPP3400A ..... J-31
DPP4400A ..... J-31
DPS3230A ..... J-31
DRB-24V020ABN ..... B-70
DRC/M 10-30VDC ..... J-32
DRC/S 10-30VDC ..... J-32
DRF-12V120W1GBA ..... B-69
DRF-24V120W1GBA ..... B-69
DRF-24V120W3GBA ..... B-69
DRF-24V240W1GBA ..... B-69
DRF-24V240W3GBA ..... B-69
DRF-24V480W1GBA ..... B-69
DRF-24V480W3GBA ..... B-69
DRL-12V120W1EN ..... B-69
DRL-12V240W1EN ..... B-69
DRL-12V75W1AZ ..... B-69
DRL-24V120W1EN ..... B-69
DRL-24V240W1EN ..... B-69
DRL-24V480W1EN ..... B-69
DRL-24V75W1AZ ..... B-69
DRL-48V120W1EN ..... B-69
DRL-48V240W1EN ..... B-69
DRL-48V75W1AZ ..... B-69
DRP024V060W1BN ..... B-69
DRP024V060W3BN ..... B-69
DRP024V120W1BN ..... B-69
DRP024V120W2BN ..... B-69
DRP024V120W3BN ..... B-69
DRP024V240W1BN ..... B-69
DRP024V240W3BN ..... B-69
DRP024V480W1BN ..... B-69
DRP024V480W3BN ..... B-69
DRP024V960W3BN ..... B-69
DRP048V120W1BN ..... B-69
DRP048V240W1BN ..... B-69
DRP048V480W1BN ..... B-69
DRR-20N ..... B-70
DRR-40N ..... B-70
DRU-24V10ACZ ..... B-70
DRU-24V40ABN ..... B-70
DS-12 ..... D-37
DSD110A ..... J-30
DSD230A ..... J-30
DSD400A ..... J-30
DT3-CT100A ..... K-25
DT3-CT30A ..... K-25
DT320RA-0200 ..... K-25
DT320VA-0200 ..... K-25
DT340RA-0200 ..... K-25
DT340VA-0200 ..... K-25
DT360RA-0200 ..... K-25
DT360VA-0200 ..... K-25
DTA4896R0 ..... K-25
DTA9648R0 ..... K-25
DTB4824RR ..... K-25
DTC1000C ..... K-26
DTC1000R ..... K-26
DTC2000C ..... K-26
DTC2000R ..... K-26
DTK4848C01 ..... K-25
DTK4848R01 ..... K-25
DTK4848V01 ..... K-25
DTK4896C01 ..... K-25
DTK4896R01 ..... K-25
DTK4896V01 ..... K-25
DTK7272R01 ..... K-25
DTK7272V01 ..... K-25
DTK9696R01 ..... K-25
DTK9696V01 ..... K-25
DTM-BDC ..... K-26
DTM-BDL ..... K-26
DTM-BDR ..... K-26
DTM-BDV ..... K-26
DTM-DOC ..... K-26
DTM-DOL ..... K-26
DTM-DOR ..... K-26
DTM-DOV ..... K-26
DTME04 ..... K-26
DTME08 ..... K-26
DTMN04 ..... K-26
DTMN08 ..... K-26
DTMR04 ..... K-26
DTMR08 ..... K-26
DUR024AD ..... J-30
DUR110A ..... J-30
DUR230A ..... J-30
DVM024D-24A ..... J-31
DVM30MV-30MV ..... J-31
DVM400A-230A ..... J-31
DVP01PU-S ..... C-3
DVP02DA-E2 ..... C-6
DVP02TKL-S ..... C-3
DVP02TKN-S ..... C-3
DVP02TKR-S ..... C-3
DVP02TUL-S ..... C-3
DVP02TUN-S ..... C-3
DVP02TUR-S ..... C-3
DVP04AD-E2 ..... C-6
DVP04AD-S2 ..... C-3
DVP04AD-SL ..... C-4
DVP04DA-E2 ..... C-6
DVP04DA-S2 ..... C-3
DVP04DA-SL ..... C-4
DVP04PT-E2 ..... C-6
DVP04PT-S ..... C-3
DVP04TC-E2 ..... C-6
DVP04TC-S ..... C-3
DVP06AD-S ..... C-3
DVP06PT-S ..... C-3
DVP06SN11R ..... C-3
DVP06XA-E2 ..... C-6
DVP06XA-S2 ..... C-3
DVP08SM11N ..... C-3
DVP08SN11R ..... C-3
DVP08SN11T ..... C-3
DVP08SP11R ..... C-3
DVP08SP11T ..... C-3
DVP08ST11N ..... C-4
DVP08XM211N ..... C-5
DVP08XN211R ..... C-5
DVP08XN211T ..... C-5
DVP08XP211R ..... C-5
DVP08XP211T ..... C-5
DVP10EC00R3 ..... C-6
DVP12SA211R ..... C-1
DVP12SA211T ..... C-1
DVP12SE11R ..... C-2
DVP12SE11T ..... C-2
DVP12SS211S ..... C-1
DVP14SS211R ..... C-1
DVP14SS211T ..... C-1
DVP16EC00R3 ..... C-6
DVP16SM11N ..... C-3
DVP16SN11T ..... C-3
DVP16SN11TS ..... C-3
DVP16SP11R ..... C-3
DVP16SP11T ..... C-3
DVP16SP11TS ..... C-3
DVP16XM211N ..... C-5
DVP16XN211R ..... C-5
DVP16XN211T ..... C-5
DVP16XP211R ..... C-5
DVP16XP211T ..... C-5
DVP201LC-SL ..... C-4
DVP202LC-SL ..... C-4
DVP20SX311R ..... C-2
DVP20SX311S ..... C-2
DVP20SX311T ..... C-2
DVP211LC-SL ..... C-4
DVP22EX300R ..... C-5
DVP22EX300T ..... C-5
DVP24EC00R3 ..... C-6
DVP24XN200R ..... C-6
DVP24XN200T ..... C-6
DVP24XP200R ..... C-6
DVP24XP200T ..... C-6
DVP26SE11R ..... C-2
DVP26SE11T ..... C-2
DVP28SA211R ..... C-1
DVP28SA211T ..... C-1
DVP28SV311R ..... C-2
DVP28SV311S ..... C-2
DVP28SV311T ..... C-2
DVP32EC00R3 ..... C-6
DVP32ES300R ..... C-5
DVP32ES300T ..... C-5
DVP32SM11N ..... C-3
DVP32SN11TN ..... C-3
DVP32XP200R ..... C-6
DVP32XP200T ..... C-6
DVP36EX300R ..... C-5
DVP36EX300T ..... C-5
DVP40EC00R3 ..... C-6
DVP48ES300R ..... C-5
DVP48ES300T ..... C-5
DVP64ES300R ..... C-5
DVP64ES300T ..... C-5
DVP80ES300R ..... C-5
DVP80ES300T ..... C-5
DVPAEXT01-E2 ..... C-6
DVPCOPM-SL ..... C-4
DVPDNET-SL ..... C-4
DVPDT01-S ..... C-3
DVPEN01-SL ..... C-4
DVPPCC01 ..... C-4
DVPPF01-S ..... C-3
DVPPS01 ..... C-4
DVPPS02 ..... C-4
DVPPS05 ..... C-4
DVPSCM12-SL ..... C-4
DVPSCM52-SL ..... C-4
DVS-005R00 ..... G-1
DVS-005W01 ..... G-1
DVS-008R00 ..... G-1
DVS-008W01 ..... G-1
DVS-016W01 ..... G-1
DVS-G005I00C ..... G-1
DVS-G112W02-4GF ..... G-1
DVS-G116W02-4GF ..... G-1
DVS-G406W01-2GF ..... G-1
DVS-G900-4GF ..... G-2
DVS-G900-6GM12 ..... G-2
DVS-G900-8GE ..... G-2
DVS-G900-8GF ..... G-2
DVS-G928W01 ..... G-2
DVW1230A ..... J-31
DVW3400A ..... J-31
DVW3525A ..... J-31
DVW3N400A ..... J-31
DX-2310LN ..... G-2
DX-2400L9 ..... G-2
DX-3021L9 ..... G-2
DZP3000 ..... L-39

**E**10100AI ..... K-33
E10000AM ..... K-33
E10000BI ..... K-33
E10000BM ..... K-33
E10000CI ..... K-33
E10000CM ..... K-33
E10000DI ..... K-33
E10000DM ..... K-33
E10000EI ..... K-33
E10000EI50 ..... K-33
E10000EMRA ..... K-33
E10000FI ..... K-33
E10000FM ..... K-33
E10000HI ..... K-33
E10000HM ..... K-33
E10000II ..... K-33
E10000IM50 ..... K-33
E10000IMRA ..... K-33
E10000LI ..... K-33
E10000LM ..... K-33
E10001SCI ..... K-33
E10101S5I ..... K-34
E10108TBI ..... K-34
E30000AM ..... K-33
E30000BM ..... K-33
E30000CM ..... K-33
E30000EMRA ..... K-33
E30000FM ..... K-33
E30000LM ..... K-33
E40000AM ..... K-33
E40000BM ..... K-33
E40000CM ..... K-33
E40000DM ..... K-33
E40000EMRA ..... K-33
E40000FM ..... K-33
E40000HM ..... K-33
E40000IM50 ..... K-33
E40000LM ..... K-33
E40000LSM ..... K-33
E40108TBM ..... K-34
EAC4006P ..... B-43
EAC4008P ..... B-43
EAC4010P ..... B-43
EAC4016P ..... B-43
EAC4025G ..... B-43
EAC4040G ..... B-43
EAC4063G ..... B-43
EAC4080G ..... B-43
EAC4100G ..... B-43
EAC4125G ..... B-43
EAC4160G ..... B-43
EAM12/M16H ..... L-26
EAM16/M20H ..... L-26
EAM20/M25H ..... L-26
EAM25/M32H ..... L-26
EAM32/M40H ..... L-26
EAM40/M50H ..... L-26
ECM-B3L-CM0401RJ1 ... C-20
ECM-B3M-C21010RS1 .. C-20
ECM-B3M-CM0604RJ1 .. C-20
ECM-B3M-CM0604SJ1 .. C-20
ECM-B3M-CM0807RJ1 .. C-20
ECM-B3M-CM0807SJ1 .. C-20
ECM-B3M-E21315RS1 .. C-20
ECM-B3M-K21320RS1 .. C-20
ECM-B3M-L21830RS1 ... C-20
ECM-B3M-L21845RS1 ... C-20
ECM-B3M-L21855R31 ... C-20
ECM-B3M-LA1875R31 ... C-20
ECM-B3M-LA221BR31 .. C-20
ECM-B3M-LA221FR31 ... C-20
ECMA-C10401RS ..... C-20
ECMA-C10604RS ..... C-20
ECMA-C10807RS ..... C-20
ECMA-C10807SS ..... C-20
ECMA-C11010RS ..... C-20
ECMA-C11010SS ..... C-20
ECMA-E11315RS ..... C-20
ECMA-E11315SS ..... C-20
ECMA-K11320SS ..... C-20
ECMA-L11830SS ..... C-20
ECMA-L11845SS ..... C-20
ECMD-B91608MS ..... A-31
ECO3002P ..... B-38
ECO3004M ..... B-38
ECO3004P ..... B-38
ECO3006M ..... B-38
ECO3006P ..... B-38
ECO3009M ..... B-38
ECO3009P ..... B-38
ECO3012M ..... B-38
ECO3012P ..... B-38
ECO3016M ..... B-38
ECO3025M ..... B-38
ECO3040M ..... B-38
ECO3063M ..... B-38
ECO3080M ..... B-38
ECO3125M ..... B-38
ECO3160M ..... B-38
ECO4016M ..... B-38
ECO4025M ..... B-38
ECO4040M ..... B-38
ECO4063M ..... B-38
ECO4080M ..... B-38
ECO4125M ..... B-38
ECO4160M ..... B-38
ECP180D ..... B-16
ECP300C ..... B-16
ECP310D ..... B-16
ECP380D ..... B-16
EDA ..... K-36
EE804A ..... K-40
EE805A ..... K-40
EE806 ..... K-40
EE820 ..... K-40
EE825 ..... K-40
EE827 ..... K-40
EE855 ..... K-40
EE860 ..... K-40
EER503 ..... K-40
EG1010A ..... A-26
EG2010A ..... A-26
EG3010A ..... A-26
EGA 1 275/1+1 ..... B-63
EGA 1 275/1+1 IR ..... B-63
EGA 1 275/3+1 ..... B-63
EGA 1 275/3+1 IR ..... B-63
EGA 2 275/1+0 ..... B-64
EGA 2 275/1+1 ..... B-64
EGA 2 275/1+1 IR ..... B-64
EGA 2 275/3+1 ..... B-64
EGA 2 275/3+1 IR ..... B-64
EGA 2 N/0+1 ..... B-64
EGARA 1 275 ..... B-63
EGARA 1 N ..... B-63
EGARA 2 275 ..... B-64
EGARA 2 N ..... B-64
EGN003 ..... B-15
EGN100 ..... B-15
EGN103 ..... B-15
EGN200 ..... B-15
EGN400 ..... B-15
EHN010 ..... B-15
EHN011 ..... B-15
EHN110 ..... B-15
EHN111 ..... B-15
EHN171 ..... B-15
EIR003A0850 ..... A-35
EIR005A0590 ..... A-35
EIR008A0350 ..... A-35
EIR012A0260 ..... A-35
EIR016A0190 ..... A-35
EIR022A0134 ..... A-35
EIR030A0100 ..... A-35
EIR037AP800 ..... A-35
EIR044AP670 ..... A-35
EIR060AP490 ..... A-35
EIR072AP400 ..... A-35
EIR085AP350 ..... A-35
EIR105AP280 ..... A-35
EIR140AP210 ..... A-35
EIR170AP170 ..... A-35
EIR205AP140 ..... A-35
EIR245AP120 ..... A-35
EIR295AP100 ..... A-35
EIR340AP086 ..... A-35
EIR370AP079 ..... A-35
EIR460AP064 ..... A-35
EIR580AP050 ..... A-35
EIR636AP046 ..... A-35
EIR710AP042 ..... A-35
EIR800AP037 ..... A-35
EIR880AP034 ..... A-35
ELEM00 ..... K-34
ELEM03 ..... K-34
EMC-A22A ..... A-30
EMC-COP01 ..... A-30
EMC-D42A ..... A-30
EMC-PG01L ..... A-30
EMC-PG01O ..... A-30
EMC-PG01U ..... A-30
EMC-R6AA ..... A-30
EMD02 ..... J-36
EMD03 ..... J-36
EMED-PGAB ..... A-31
EMED-PGABD-1 ..... A-31
EMED-PGHSD-3 ..... A-31
EMM-BPS01 ..... A-26
EMPOWER-RIG ..... M-14
EMV-A22A ..... A-28
EMV-D42A ..... A-28
EMV-R6AA ..... A-28
EMX02 ..... J-36
EMX03 ..... J-36
EMX04 ..... J-36
EOR003A0260 ..... A-35
EOR005A0180 ..... A-35
EOR008A0105 ..... A-35
EOR012AP800 ..... A-35
EOR016AP630 ..... A-35
EOR022AP400 ..... A-35
EOR030AP300 ..... A-35
EOR037AP240 ..... A-35
EOR044AP220 ..... A-35
EOR060AP150 ..... A-35
EOR072AP130 ..... A-35
EOR085AP110 ..... A-35
EOR105AP090 ..... A-35
EOR140AP070 ..... A-35
EOR170AP052 ..... A-35
EOR205AP043 ..... A-35
EOR245AP036 ..... A-35
EOR295AP030 ..... A-35
EOR340AP026 ..... A-35
EOR370AP024 ..... A-35
EOR460AP020 ..... A-35
EOR580AP016 ..... A-35
EOR636AP014 ..... A-35
EOR710AP013 ..... A-35
EOR800AP011 ..... A-35
EOR880AP010 ..... A-35
EPN051 ..... B-14
EPN053 ..... B-14
EPN503 ..... B-14
EPN515 ..... B-14
EPN518 ..... B-14
EPN519 ..... B-14
EPN521 ..... B-14
EQCM16-AD13 ..... L-27
EQCM20-AD21.2 ..... L-27
EQCM25-AD28.5 ..... L-27
EQCM32-AD34.5 ..... L-27
EQCM40-AD42.5 ..... L-27
EQCM50-AD54.5 ..... L-27
ER902220 ..... J-2
ER902230 ..... J-2
ERC216 ..... B-14
ERC218 ..... B-14
ERC225 ..... B-14
ERC225S ..... B-14
ERC240 ..... B-14
ERC263 ..... B-14
ERC416 ..... B-14
ERC418 ..... B-14
ERC425S ..... B-14
ERD225SDC ..... B-14
ERL425SDC ..... B-14
ERL625SDC ..... B-14
ES50CNER ..... J-2
ES8CNER ..... J-29
ESC080 ..... B-13
ESC225 ..... B-14
ESC226 ..... B-14
ESC227 ..... B-14
ESC240 ..... B-14
ESC241 ..... B-14
ESC263 ..... B-14
ESC425 ..... B-14
ESC427 ..... B-14
ESC440 ..... B-14
ESC440S ..... B-14
ESC442 ..... B-14
ESC463 ..... B-14
ESC463S ..... B-14
ESC464 ..... B-14
ESC465 ..... B-14
ESD425SDC ..... B-14
ESD440S ..... B-14
ESD463S ..... B-14
ESF011A0055 ..... A-36
ESF015A0075 ..... A-36
ESF022A0110 ..... A-36
ESF030A0150 ..... A-36
ESF037A0185 ..... A-36
ESF044A0220 ..... A-36
ESF057A0300 ..... A-36
ESF072A0370 ..... A-36

ESF085A0450 ..... A-36
ESF105A0550 ..... A-36
ESF140A0750 ..... A-36
ESF170A0900 ..... A-36
ESL440S ..... B-14
ESL463S ..... B-14
ESUC0450 ..... J-14
ESW3004M ..... B-35
ESW3006M ..... B-35
ESW3012M ..... B-35
ESW3016M ..... B-35
ESW3025M ..... B-35
ESW3040M ..... B-35
ESW3063M ..... B-35
ESW3080M ..... B-35
ESW3100M ..... B-35
ESW3125M ..... B-35
EWCM16-AD13 ..... L-27
EWCM20-AD15.8 ..... L-27
EWCM20-AD21.2 ..... L-27
EWCM25-AD25 ..... L-27
EWCM32-AD34.5 ..... L-27
EWCM40-AD42.5 ..... L-27
EX-L211-P ..... K-18
EX-L221-P ..... K-18
EX02 ..... J-36
EX06B ..... J-36
EX06G ..... J-36
EX08 ..... J-36
EX11 ..... J-36
EXC1042 ..... A-13
EXCRDU2 ..... A-13
EXM1001 ..... E-1
EXM1002 ..... E-1
EXM1010 ..... E-1
EXM1012 ..... E-1
EXM1013 ..... E-1
EXM1020 ..... E-1
EXM1030 ..... E-1
EXM8004 ..... E-1
EXP1000 ..... E-3
EXP1001 ..... E-3
EXP1002 ..... E-3
EXP1003 ..... E-3
EXP1004 ..... E-3
EXP1005 ..... E-3
EXP1006 ..... F-6
EXP1007 ..... F-6
EXP1010 ..... E-3
EXP1011 ..... E-3
EXP1012 ..... E-3
EXP1013 ..... E-3
EXP1014 ..... E-3
EXP1016 ..... F-6
EXP1040 ..... F-2
EXP1041 ..... F-2
EXP8005 ..... F-2
EXS0000 ..... E-6
EXS1032 ..... E-6
EXS1063 ..... E-6
EXS1080 ..... E-6
EXS1125 ..... E-6
EXS3032 ..... E-6
EXS3063 ..... E-6
EXS3080 ..... E-6
EXS3125 ..... E-6
EXS4000 ..... E-6
EXS4001 ..... E-6
EZD100 ..... B-15
EZF100 ..... B-15
EZM100 ..... B-15

**F**-7-J ..... K-27
F-7-K ..... K-27
F1-2.8V/5 ..... L-20
F1-2.8VD/5 ..... L-20
F1-4.8V/5 ..... L-20
F1-4.8VD/5 ..... L-20
F1-6.4V ..... L-20
F1-6.4VD ..... L-20
F1-6.4VF ..... L-20
F1-6.4VQD ..... L-20
F12230A ..... J-34
F2-2.8VD/5 ..... L-20
F2-4.8V/5 ..... L-20
F2-4.8VD/5 ..... L-20
F2-6.4V ..... L-20
F2-6.4VD ..... L-20
F2-6.4VF ..... L-20
F2-6.4VQD ..... L-20
F2-8V ..... L-20
F2-8VD ..... L-20
F201110001 ..... D-24
F201110002 ..... D-24
F201120001 ..... D-24
F202210001 ..... D-24
F30024AD ..... J-34
F30230A ..... J-34
F5-6.4V ..... L-20
F5-6.4VD ..... L-20
F5-6.4VQD ..... L-20
F5-9.5V ..... L-20
F5-9.5VD ..... L-20
F661AC0110 ..... D-21
F661AC0220 ..... D-21
F661AC0330 ..... D-21
F661AC0440 ..... D-21
F661AC0550 ..... D-21
F661AC0551 ..... D-21
F661AC0552 ..... D-21
F661AL0111 ..... D-21
F661AL0222 ..... D-21
F661AL0331 ..... D-21
F661AL0332 ..... D-21
F661AL0333 ..... D-21
F661AL0441 ..... D-21
F661AL0442 ..... D-21
F661AL0443 ..... D-21
F661AL0444 ..... D-21
F661AL0553 ..... D-21
F661AL0555 ..... D-21
F661EC25555002 ..... D-21
F662AC0220 ..... D-21
F662AL0333 ..... D-21
F662AL0444 ..... D-21
F662AL0551 ..... D-21
F662AL0555 ..... D-21
F70AY00-1 ..... D-19
F70AY000004-1 ..... D-19
F70AY000202-5 ..... D-19
F70AY000400-1 ..... D-19
F70AY120002-2 ..... D-19
F70AY120200-2 ..... D-19
F70BY00-1 ..... D-19
F70BY120006-2 ..... D-19
F70BY120600-2 ..... D-19
F70CY00-1 ..... D-19
F70CY121000-2 ..... D-19
F70DY00-1 ..... D-19
F70DY121200-2 ..... D-19
F70EY00-1 ..... D-19
F70EY120004-1 ..... D-19
F70EY120202-2 ..... D-19
F70EY120400-1 ..... D-19
F71EG00-1 ..... D-19
F71EY00-1 ..... D-19
F71FG00-1 ..... D-19
F71GG00-1 ..... D-19
F71HG00-1 ..... D-19
F71IG00-1 ..... D-19
F71JG00-1 ..... D-19
FAI6/BN-0A ..... K-5
FAI6/BN-2E ..... K-5
FAI6/BP-0A ..... K-5
FAI6/BP-2E ..... K-5
FAI7/BN-0E ..... K-5
FAI7/BP-0E ..... K-5
FAI8/BN-0E ..... K-5
FAI8/BN-2E ..... K-5
FAI8/BP-0E ..... K-5
FAI8/BP-2E ..... K-5
FAIC/BN-0A ..... K-5
FAIC/BN-2E ..... K-5
FAIC/BP-0A ..... K-5
FAIC/BP-2E ..... K-5
FAIH/00-0A ..... K-5
FAIH/00-2E ..... K-5
FAIZ/BN-0A ..... K-5
FAIZ/BP-0A ..... K-5
FAIZ/BP-2E ..... K-5
FAR2/BN-0A ..... K-5
FAR2/BP-0A ..... K-5
FARP/BN-0A ..... K-5
FARP/BP-0A ..... K-5
FARS/BP-0E ..... K-5
FARW/BP-0E ..... K-5
FBA315 ..... K-36
FC5R/DP-0506-1F ..... K-13
FC5R/DP-0806-1F ..... K-13
FC5R/DP-1212-1F ..... K-13
FC6I/0B-0304-1F ..... K-13
FC6I/0B-0306-1F ..... K-13
FC6I/0B-0506-1F ..... K-13
FC6I/0B-0510-1F ..... K-13
FC6I/0B-0806-1F ..... K-13
FC6I/0B-0810-1F ..... K-13
FC7I/0B-M304-0F ..... K-13
FC8U/0B-M307-1F ..... K-13
FCL20001 ..... D-23
FCL40003 ..... D-23
FD-31 ..... K-17
FD-41 ..... K-17
FD-61 ..... K-17
FD-R31G ..... K-17
FD-R41 ..... K-17
FD00A1 ..... H-6
FD00C2 ..... H-6
FD00F1 ..... H-6
FD00F2 ..... H-6
FD00M2 ..... H-6
FD00S1 ..... H-6
FD01A1 ..... H-5
FD01A2 ..... H-5
FD01K1 ..... H-5
FD02A1 ..... H-6
FD02C2 ..... H-6
FD02K1 ..... H-6
FD22DN ..... H-5
FD22PN ..... H-5
FD22TN ..... H-5
FD32DN ..... H-5
FD32PN ..... H-5
FD32TN ..... H-5
FD42AN ..... H-5
FD42DN ..... H-5
FD42PN ..... H-5
FD42TN ..... H-5
FD52AN ..... H-5
FD52DN ..... H-5
FD52PN ..... H-5
FD52TN ..... H-5
FD62AN ..... H-5
FD62DN ..... H-5
FD62PN ..... H-5
FD62TN ..... H-5
FD72AN ..... H-5
FD72DN ..... H-5
FD72PN ..... H-5
FD72TN ..... H-5
FDP-N1000 ..... K-17
FDP-N1500 ..... K-17
FDP-N500 ..... K-17
FF08A230UN ..... H-21
FF08U ..... H-21
FF12A230UF ..... H-21
FF12U ..... H-21
FF15A230UF ..... H-21
FF15U ..... H-21
FF20A230UE ..... H-21
FF20U ..... H-21
FGN 02A ..... B-62
FGN 04A ..... B-62
FGN 06A ..... B-62
FGN 10A ..... B-62
FGN 16A ..... B-62
FGN 20A ..... B-62
FGN 25A ..... B-62
FGN 32A ..... B-62
FHS138074 ..... F-10
FHS138144 ..... F-10
FHS150144 ..... F-10
FHS175074 ..... F-10
FHS200144 ..... F-10
FHS213074 ..... F-10
FHS238074 ..... F-10
FHS238144 ..... F-10
FHS275074 ..... F-10
FHS288144 ..... F-10
FHS300144 ..... F-10
FHS313074 ..... F-10
FHS338074 ..... F-10
FHS350144 ..... F-10
FHS375074 ..... F-10
FHS400144 ..... F-10
FHS438074 ..... F-10
FHS450144 ..... F-10
FHS475074 ..... F-10
FHS500144 ..... F-10
FHS538074 ..... F-10
FHS550144 ..... F-10
FHS575074 ..... F-10
FHS600144 ..... F-10
FHS638074 ..... F-10
FHS675074 ..... F-10
FHS738074 ..... F-10
FHS775074 ..... F-10
FHS838074 ..... F-10
FHS875074 ..... F-10
FHS975074 ..... F-10
FIX KLIP M4 ..... L-13
FIX KLIP M5 ..... L-13
FL-2/001-7 ..... E-25
FL-2/002-7 ..... E-25
FL-2/003-7 ..... E-25
FL-2/004-7 ..... E-25
FL-2/005-7 ..... E-25
FL-2/006-7 ..... E-25
FL-2/007-7 ..... E-25
FL-2/010-7 ..... E-25
FL-2/015-7 ..... E-25
FL-2/020-7 ..... E-25
FL-2/025-7 ..... E-25
FL-2/030-7 ..... E-25
FL-2/040-7 ..... E-25
FL-2/050-7 ..... E-25
FL-2/060-7 ..... E-25
FL-2/075-7 ..... E-25
FL-2/100-7 ..... E-25
FL000A ..... H-14
FL102A ..... H-13
FL104A ..... H-13
FL110A ..... H-13
FL112A ..... H-13
FL117A ..... H-13
FL120A ..... H-13
FL124A ..... H-13
FL128AEM ..... H-13
FL130AEM ..... H-13
FL204B ..... H-13
FL209B ..... H-13
FL213B ..... H-13
FL216B ..... H-13
FL221B ..... H-13
FL221BT ..... H-13
FL229B ..... H-13
FL372A ..... H-14
FL373A ..... H-14
FL374A ..... H-14
FL402A ..... H-13
FL404A ..... H-13
FL407A ..... H-13
FL408A ..... H-13
FL412A ..... H-13
FL413A ..... H-13
FL415A ..... H-13
FL417AEM ..... H-13
FL419AEM ..... H-13
FL450A ..... H-14
FL544A ..... H-14
FL547A ..... H-14
FL548A ..... H-14
FL551A ..... H-14
FL552A ..... H-14
FL555A ..... H-14
FL557A ..... H-14
FL559A ..... H-14
FL670A ..... H-14
FL711E ..... H-14
FL712E ..... H-14
FL713E ..... H-14
FL714E ..... H-14
FL715E ..... H-14
FL733E ..... H-14
FL734E ..... H-14
FL735E ..... H-14
FL74Z ..... H-11
FL76Z ..... H-11
FL85Z ..... H-14
FL863Z ..... H-14
FL871Z ..... H-14
FL93Z ..... H-14
FL958A ..... H-14
FL960A ..... H-14
FL962A ..... H-14
FL96Z ..... H-14
FL96ZX01 ..... H-14
FL979A ..... H-14
FL980A ..... H-14
FL981A ..... H-14
FL982A ..... H-14
FL983A ..... H-14
FL994A ..... H-14
FL996A ..... H-14
FL998A ..... H-14
FLL-2MA ..... H-22
FLL-C3006UITB ..... H-22
FLL-C3006USTB ..... H-22
FM109 ..... H-6
FM205 ..... H-6
FM209 ..... H-6
FM405 ..... H-6
FM409 ..... H-6
FM450 ..... H-6
FM484 ..... H-6
FM486 ..... H-6
FM519 ..... H-6
FM535 ..... H-6
FM539 ..... H-6
FM545 ..... H-6
FM549 ..... H-6
FM635 ..... H-6
FM653 ..... H-6
FMC-SD001G ..... C-12
FMF 355 ..... B-62
FMF 400 ..... B-62
FMS12806 ..... F-9
FMS13804 ..... F-9
FMS17504 ..... F-9
FMS19206 ..... F-9
FMS21304 ..... F-9
FMS23804 ..... F-9
FMS25606 ..... F-9
FMS27504 ..... F-9
FMS31304 ..... F-9
FMS32006 ..... F-9
FMS33804 ..... F-9
FMS37504 ..... F-9
FMS38426 ..... F-9
FMS43804 ..... F-9
FMS44826 ..... F-9
FMS47504 ..... F-9
FMS51226 ..... F-9
FMS57524 ..... F-9
FMS57626 ..... F-9
FMS64026 ..... F-9
FMS67524 ..... F-9
FMS70426 ..... F-9
FMS76826 ..... F-9
FMS77524 ..... F-9
FMS83226 ..... F-9
FMS87524 ..... F-9
FMS89626 ..... F-9
FMS96026 ..... F-9
FN013EW ..... H-7
FN017EW ..... H-7
FN018EW ..... H-7
FN020EW ..... H-7
FN021EW ..... H-7
FN022EW ..... H-7
FN023EW ..... H-7
FN024EW ..... H-7
FN029EW ..... H-7
FN031EW ..... H-7
FN032EW ..... H-7
FN037EW ..... H-7
FN046EW ..... H-7
FN073E ..... H-8
FN077E ..... H-8
FN078E ..... H-8
FN080E ..... H-8
FN081E ..... H-8
FN082E ..... H-8
FN083E ..... H-8
FN084E ..... H-8
FN089E ..... H-8
FN091E ..... H-8
FN092E ..... H-8
FN10040DREM ..... H-8
FN10060DREM ..... H-8
FN10080DREM ..... H-8
FN121E ..... H-8
FN1900PD ..... H-10
FN1970AF ..... H-11
FN1990AF ..... H-11
FN206E ..... H-10
FN216E ..... H-7
FN276E ..... H-7
FN276EDW ..... H-7
FN246E ..... H-7
FN246EDW ..... H-7
FN266E ..... H-10
FN276E ..... H-7
FN276EDW ..... H-7
FN286EW ..... H-10
FN296E ..... H-7
FN296EDW ..... H-7
FN356E ..... H-7
FN366E ..... H-7
FN376E ..... H-7
FN430E ..... H-7
FN433E ..... H-7
FN437E ..... H-7
FN438E ..... H-7
FN440E ..... H-7
FN441E ..... H-7
FN442E ..... H-7
FN443E ..... H-7
FN444E ..... H-7
FN451E ..... H-7
FN453E ..... H-7
FN4540DREM ..... H-8
FN454E ..... H-7
FN4560DREM ..... H-8
FN4580DREM ..... H-8
FN459E ..... H-7
FN506E ..... H-8
FN510E ..... H-8
FN516E ..... H-8
FN526E ..... H-8
FN536E ..... H-8
FN546E ..... H-8
FN6020MDW ..... H-10
FN6020PDW ..... H-10
FN6030PDW ..... H-10
FN6040PDW ..... H-10
FN6060PDW ..... H-10
FN60TBPW ..... H-10
FN7040DREM ..... H-8
FN7060DREM ..... H-8
FN7080DREM ..... H-8
FN726E ..... H-11
FN736E ..... H-11
FN746E ..... H-11
FN8020MDW ..... H-10
FN8020PDW ..... H-10
FN8030PDW ..... H-10
FN8040PDW ..... H-10
FN8060PDW ..... H-10
FN80TBPW ..... H-10
FN9040DREM ..... H-8
FN9060DREM ..... H-8
FN9080DREM ..... H-8
FN942E ..... H-11
FN943E ..... H-11
FN944E ..... H-11
FN946E ..... H-11
FN947E ..... H-11
FN948E ..... H-11
FN949E ..... H-11
FN950 ..... H-11
FN951 ..... H-11
FN952 ..... H-8
FN954E ..... H-11
FRT1/230A ..... J-34
FS-100 ..... K-38
FS-300 ..... K-38
FS-402 ..... K-38
FS-500 ..... K-38
FS-902 ..... K-38
FS-IR1902D-NPN NC ..... K-37
FS-IR1902D-NPN NO ..... K-37
FS-IR1902D-PNP NC ..... K-37
FS-IR1902D-PNP NO ..... K-37
FS03-3P ..... J-19
FS51 ..... K-29
FS52 ..... K-29
FSA 02A ..... B-62
FSA 04A ..... B-62
FSA 06A ..... B-62
FSA 10A ..... B-62
FSA 16A ..... B-62
FSA 20A ..... B-62
FSA 25A ..... B-62
FSA 32A ..... B-62
FSDCP 100 ..... B-62
FSDCP 63 ..... B-62
FSDCP 80 ..... B-62
FSF 160 ..... B-62
FSF 200 ..... B-62
FSFP 125 ..... B-62
FSFP 160 ..... B-62
FSFP 200 ..... B-62
FSK 250 ..... B-62
FSK 315 ..... B-62
FSS 40 ..... B-62
FSS 50 ..... B-62
FSS 63 ..... B-62
FT-31 ..... K-17
FT-42 ..... K-17
FT-H20-WM1 ..... K-17
FT-H35-M2S6 ..... K-17
FT-R31 ..... K-17
FT-R43 ..... K-17
FTM 500 ..... B-62
FTM 600 ..... B-62
FTP-1000 ..... K-17
FTP-1500 ..... K-17
FTP-500 ..... K-17
FU-9801C2 P2A23 ..... H-19
FU-9801C2 P2D ..... H-19
FU-9802C2 P2A23 ..... H-19
FU-9802C2 P2D ..... H-19
FU-9803C2 P2A23 ..... H-19
FU-9803C2 P2A40 ..... H-19
FU-9803C2 P2D ..... H-19
FU-9804C2 P2A23 ..... H-19
FU-9804C2 P2A40 ..... H-19
FU-9805C2 P2A23 ..... H-19
FU-9806C2 P2A23 ..... H-19
FU22DN ..... H-5
FU32DN ..... H-5
FU42AN ..... H-5
FU42DN ..... H-5
FU52AN ..... H-5
FU52DN ..... H-5
FU62AN ..... H-5
FU62DN ..... H-5
FU72AN ..... H-5
FU72DN ..... H-5
FU9801B P2 ..... H-19
FU9802B P2 ..... H-19
FU9803AM ..... H-20
FU9803B P2 ..... H-19
FU9803BM ..... H-20
FU9804B P2 ..... H-19
FU9804B P2/P4-172 ..... H-20
FU9805B P2 ..... H-19
FU9805B P2/P5-220 ..... H-20
FU9806B P2 ..... H-19
FU9806B P2/P6-250 ..... H-20
FX-551P ..... K-17
FX-CT1 ..... K-17
FX-LE1 ..... K-17
FX-SV1 ..... K-17
FX102P-Z ..... K-17
FX289 ..... H-10
FX291 ..... H-10
FX292 ..... H-10
FZ402 ..... H-8
FZ402AL ..... H-8
FZ403WP ..... H-8
FZ404 ..... H-8
FZ406M ..... H-8
FZ407M ..... H-8
FZ408M ..... H-8
FZ422 ..... H-8
FZ506 ..... H-11
FZ516 ..... H-11
FZ517 ..... H-6
FZ519 ..... H-11
FZ520 ..... H-11
FZ537 ..... H-11
FZ760E ..... H-11
FZ767 ..... H-11
FZ794 ..... H-6
FZ795D ..... H-11
FZ850 ..... H-11

**G**218 ..... A-4
G-100C ..... A-41
G-112C ..... A-41
G-132C ..... A-41
G-160C ..... A-41
G-180C ..... A-41

G-200C....A-41
G-225C....A-41
G-250C....A-41
G-280C....A-41
G-315C2P....A-41
G-315C4/6P....A-41
G-355C2P....A-41
G-355C4/6P....A-41
G-80C....A-41
G-90C....A-41
G-CHECK 230....B-66
G218....A-5
G222....A-6
G228220....A-8
G231....A-7
G232....A-7
G233....A-8
G270....A-8
G272....A-6
G280....A-5
G324....A-1
G326....A-1
G350....A-5
G354....A-5
G355....A-6
G3564....A-6
G3565....A-6
G358....A-5
G370....A-5
G371....A-7
G41801....A-5
G41801D....A-5
G41810....A-5
G41810A....A-5
G419....A-5
G454....A-6
G455....A-6
G460....A-4
G48102....A-5
G48111....A-5
G48120....A-5
G483....A-5
G48403....A-5
G48412....A-5
G48421....A-5
G48430....A-5
G485120....A-5
G4856....A-5
G48560....A-5
G486120....A-5
G4866....A-5
G48660....A-5
G487....A-5
G525....A-7
G526....A-7
GA016A....A-17
GA025A....A-17
GA025C....A-18
GA025ET6....A-20
GA032A....A-17
GA040A....A-17
GA040C....A-18
GA040ET6....A-20
GA063A....A-17
GA063SA....A-17
GA063SAET6....A-20
GA080A....A-17
GA080C....A-18
GA080ET6....A-20
GA125A....A-17
GA125C....A-18
GA125ET6....A-20
GA160A....A-17
GA160ET6....A-20
GAM3012D....J-34
GAM3024D....J-34
GAX1011A....A-18
GAX1011C....A-18
GAX1110EA....A-18
GAX1210EA....A-18
GAX391....A-18
GAX41040A....A-17
GAX41125A....A-17
GAX42040A....A-17
GAX42040C....A-18
GAX42063SA....A-17
GAX42080A....A-17
GAX42125A....A-17
GAX42125C....A-18
GAX42160A....A-17
GAX5000....A-18
GAX5001....A-18
GAX6000....A-18
GAX6001....A-18
GAX60B....A-17
GAX61....A-17
GAX63....A-17
GAX63B....A-17
GAX64....A-17
GAX66N....A-17
GAX66NB....A-17
GAX67B....A-18
GAX68....A-17
GAX7200....A-17
GAX7200AN....A-17
GAX7300....A-17
GAX7300AN....A-17
GAX81....A-18
GAX82....A-18
GAX83....A-18
GAX84....A-18
GAZ016....A-21
GAZ025....A-21
GAZ025ET6....A-20
GAZ032....A-21
GAZ040EM....A-21
GAZ040ET6....A-20
GAZ063EM....A-21
GAZ080EM....A-21
GAZ080ET6....A-20
GAZ1....A-21
GAZ125EM....A-21
GAZ125ET6....A-20
GAZ160EM....A-21
GAZ2....A-21
GAZ3....A-21
GAZM016EM....A-21
GAZM025EM....A-21
GAZM032EM....A-21
GAZM040EM....A-21
GAZM063EM....A-21
GAZM080EM....A-21
GAZM125EM....A-21
GAZM160EM....A-21
GAZM1E....H-16
GAZS1E....H-16
GD102B....H-3
GD104B....H-3
GD106B....H-3
GD110B....H-3
GI03010.1....L-9
GI06006.1....L-4
GL0160C1....A-19
GL0200C1....A-19
GL0250C1....A-19
GL0315C1....A-19
GL0400C1....A-19
GL0500C1....A-19
GL0630C1....A-19
GL0800C1....A-19
GL1000C1....A-19
GLC0160C1....A-20
GLC0160T4C1....A-20
GLC0200C1....A-20
GLC0200T4C1....A-20
GLC0250C1....A-20
GLC0250T4C1....A-20
GLC0315C1....A-20
GLC0315T4C1....A-20
GLC0400C1....A-20
GLC0400T4C1....A-20
GLC0500C1....A-20
GLC0500T4C1....A-20
GLC0630C1....A-20
GLC0630T4C1....A-20
GLC0800C1....A-20
GLC0800T4C1....A-20
GLC1000C1....A-20
GLC1000T4C1....A-20
GLX00....A-17
GLX1001....A-19
GLX1010EA....A-19
GLX201....A-20
GLX202....A-20
GLX206....A-20
GLX207....A-20
GLX208....A-20
GLX209....A-20
GLX420315....A-19
GLX420400....A-19
GLX420630....A-19
GLX420800....A-19
GLX421000....A-19
GLX550....A-19
GLX551....A-19
GLX552....A-19
GLX553....A-19
GLX61....A-19
GLX61B....A-19
GLX61CB....A-20
GLX61D....A-19
GLX61DB....A-19
GLX62....A-19
GLX62B....A-19
GLX62CB....A-20
GLX62DB....A-19
GLX63....A-19
GLX63B....A-19
GLX63CB....A-20
GLX63DB....A-19
GLX7200S10....A-19
GLX7200S12....A-19
GLX7300S10....A-19
GLX7300S12....A-19
GLX7400S10....A-19
GLX7400S12....A-19
GLX7500S10....A-19
GLX7500S12....A-19
GLX800....A-19
GLX802....A-19
GLX804....A-19
GLX900....A-19
GLX902....A-19
GLX904....A-19
GLZM0200EM....A-21
GLZM0250EM....A-21
GLZM0315EM....A-21
GLZM0400EM....A-21
GLZM0630EM....A-21
GLZM0800EM....A-21
GLZM1000EM....A-21
GP102T....H-3
GP104T....H-3
GP106T....H-3
GP110T....H-3
GQ10T-JN/02/B....D-17
GQ10T-JN/02/G....D-17
GQ10T-JN/02/R....D-17
GQ10T-JN/02/W....D-17
GQ10T-JN/02/Y....D-17
GQ10T-JN/22/B....D-17
GQ10T-JN/22/G....D-17
GQ10T-JN/22/R....D-17
GQ10T-JN/22/W....D-17
GQ10T-JN/22/Y....D-17
GQ12T-JN/02/B....D-17
GQ12T-JN/02/G....D-17
GQ12T-JN/02/R....D-17
GQ12T-JN/02/W....D-17
GQ12T-JN/02/Y....D-17
GQ12T-JN/22/B....D-17
GQ12T-JN/22/G....D-17
GQ12T-JN/22/R....D-17
GQ12T-JN/22/W....D-17
GQ12T-JN/22/Y....D-17
GQ16T-LN/02/B....D-17
GQ16T-LN/02/G....D-17
GQ16T-LN/02/R....D-17
GQ16T-LN/02/W....D-17
GQ16T-LN/02/Y....D-17
GQ16T-LN/22/B....D-17
GQ16T-LN/22/G....D-17
GQ16T-LN/22/R....D-17
GQ16T-LN/22/W....D-17
GQ16T-LN/22/Y....D-17
GQ22T-LN/02/B....D-17
GQ22T-LN/02/G....D-17
GQ22T-LN/02/R....D-17
GQ22T-LN/02/W....D-17
GQ22T-LN/02/Y....D-17
GQ22T-LN/22/B....D-17
GQ22T-LN/22/G....D-17
GQ22T-LN/22/R....D-17
GQ22T-LN/22/W....D-17
GQ22T-LN/22/Y....D-17
GX16 10U....D-12
GX16 10U25....D-12
GX16 51U....D-12
GX16 52U....D-12
GX16 53U....D-12
GX16 54U....D-12
GX16 55U....D-12
GX16 56U....D-12
GX16 66U....D-12
GX16 67U....D-12
GX16 69U....D-12
GX16 75U....D-12
GX16 90U....D-12
GX16 91U....D-12
GX16 92U....D-12
GX16 92U25....D-12
GX16 97U....D-12
GX16 98U....D-12
GX20 10U....D-12
GX20 51U....D-12
GX20 52U....D-12
GX20 53U....D-12
GX20 54U....D-12
GX20 55U....D-12
GX20 56U....D-12
GX20 69U....D-12
GX20 75U....D-12
GX20 90U....D-12
GX20 91U....D-12
GX20 92U....D-12
GX32 10U....D-12
GX32 10U25....D-12
GX32 51U....D-12
GX32 52U....D-12
GX32 53U....D-12
GX32 54U....D-12
GX32 55U....D-12
GX32 56U....D-12
GX32 69U....D-12
GX32 75U....D-12
GX32 90U....D-12
GX32 91U....D-12
GX32 92U....D-12
GX32 92U25....D-12
GX40 10U....D-12
GX40 51U....D-12
GX40 52U....D-12
GX40 53U....D-12
GX40 75U....D-12
GX40 90U....D-12
GX40 91U....D-12
GX40 92U....D-12
GXM5....D-12
GXM6....D-12
GZ04E....H-3
GZ04N....H-3
GZ104S....H-3
GZ106S....H-3
GZ110S....H-3

**H**1E0230A....J-35
HASP-20-OPC01....C-12
HBD-T1....D-17
HC02....H-16
HC02-G....H-16
HC03....H-16
HC03-G....H-16
HC04....H-16
HC04-G....H-16
HC05....H-16
HC05-G....H-16
HC06....H-16
HC06-G....H-16
HC06E....H-16
HC06E-G....H-16
HC07....H-16
HC07-G....H-16
HC07E....H-16
HC07E-G....H-16
HC08....H-16
HC08-G....H-16
HC08E....H-16
HC08E-G....H-16
HC3CR-10....H-17
HC3CR-4....H-17
HC3CR-5....H-17
HC3CR-6....H-17
HC3CR-7....H-17
HC3CR-9....H-17
HCA125Z....B-22
HCA126Z....B-22
HCA160Z....B-22
HCA161Z....B-22
HCB250Z....B-22
HCB251Z....B-22
HCE800H....B-22
HCE801H....B-22
HCE970H....B-22
HCE971H....B-22
HCF980H....B-22
HCF981H....B-22
HCF990H....B-22
HCF991H....B-22
HCHVT1500-1000B-74E....B-57
HCHVT1500-1100B-74E....B-57
HCHVT1500-1100S-105E..B-57
HCHVT1500-1200B-74E....B-57
HCHVT1500-1250S-105E..B-57
HCHVT1500-1350S-105E..B-57
HCHVT1500-1500S-105E..B-57
HCHVT1500-1600S-105E..B-57
HCHVT1500-160B-59E.....B-57
HCHVT1500-1800S-105E..B-57
HCHVT1500-2000A-159E..B-57
HCHVT1500-200B-59E.....B-57
HCHVT1500-2500A-159E..B-57
HCHVT1500-250B-59E ....B-57
HCHVT1500-3000A-159E..B-57
HCHVT1500-315B-59E ...B-57
HCHVT1500-350B-59E ....B-57
HCHVT1500-400B-59E ....B-57
HCHVT1500-500B-74E ....B-57
HCHVT1500-550B-74E ....B-57
HCHVT1500-630B-74E ....B-57
HCHVT1500-700B-74E ....B-57
HCHVT1500-800B-74E ....B-57
HCHVT1500-900B-74E ....B-57
HCMS02501....B-57
HCW400AR....B-22
HCW401AR....B-22
HCW630AR....B-22
HCW631AR....B-22
HE09645....H-16
HE12960GP1....H-16
HE200....H-15
HE200-G....H-15
HE201....H-15
HE201-G....H-15
HE201T....H-15
HE201T-G....H-15
HE202....H-15
HE202-G....H-15
HE202T....H-15
HE202T-G....H-15
HE203....H-15
HE203-G....H-15
HE203GP1....H-15
HE203T....H-15
HE203T-G....H-15
HE204....H-15
HE204-G....H-15
HE204T....H-15
HE204T-G....H-15
HE205....H-15
HE205-G....H-15
HE205T....H-15
HE205T-G....H-15
HE206....H-15
HE206-G....H-15
HE206E....H-15
HE206E-G....H-15
HE206EGP1....H-15
HE206ET....H-15
HE206ET-G....H-15
HE206T....H-15
HE206T-G....H-15
HE207....H-15
HE207-G....H-15
HE207E....H-15
HE207E-G....H-15
HE207EGP1....H-15
HE207ET....H-15
HE207ET-G....H-15
HE207T....H-15
HE207T-G....H-15
HE208....H-15
HE208-G....H-15
HE208E....H-15
HE208E-G....H-15
HE208ET....H-15
HE208ET-G....H-15
HE208T....H-15
HE208T-G....H-15
HEE800H....B-22
HEE801H....B-22
HEE970H....B-22
HEE971H....B-22
HEF980H....B-22
HEF981H....B-22
HEF990H....B-22
HEF991H....B-22
HEJ320DR....B-21
HEJ321DR....B-21
HEJ400DR....B-21
HEJ401DR....B-21
HEJ630DE....B-21
HEJ631DE....B-21
HEW400JR....B-22
HEW401JR....B-22
HEW630JR....B-22
HEW631JR....B-22
HFR-008BK....L-32
HFR-010BK....L-32
HFR-012BK....L-32
HFR-015BK....L-32
HFR-020BK....L-32
HFR-030BK....L-32
HFR-040BK....L-32
HFR-050BK....L-32
HFRA1207....F-11
HFRA1314....F-11
HFRA2507....F-11
HFRA2714....F-11
HFRA5007....F-11
HFRA5414....F-11
HG-C1030-P....K-18
HG-C1050-P....K-18
HG-C1100-P....K-18
HG-C1200-P....K-18
HG-C1400-P....K-18
HHA016Z....B-21
HHA020Z....B-21
HHA025Z....B-21
HHA032Z....B-21
HHA040Z....B-21
HHA050Z....B-21
HHA063Z....B-21
HHA080Z....B-21
HHA100Z....B-21
HHA125Z....B-21
HHA160Z....B-21
HHB200Z....B-21
HHB250Z....B-21
HJ-6X6....C-23
HJM5AUX320....B-18
HJM5AUX630....B-18
HJM5AUX800....B-18
HJM5DC250/2-125....B-18
HJM5DC250/2-160....B-18
HJM5DC250/2-200....B-18
HJM5DC250/2-250....B-18
HJM5DC250/2-320....B-18
HJM5DC800/2-325....B-18
HJM5DC800/2-400....B-18
HJM5DC800/2-500....B-18
HJM5DC800/2-630....B-18
HJM5DC800/2-800....B-18
HJM5HU250/3-125....B-18
HJM5HU250/3-160....B-18
HJM5HU250/3-200....B-18
HJM5HU250/3-250....B-18
HJM5HU250/3-320....B-18
HJM5HU630/3-630....B-18
HJM5HU800/3-630....B-18
HJM5HU800/3-800....B-18
HJM5SHT300....B-18
HJM5SHT630....B-18
HKP015015R1A....L-14
HKP015015ZDA....L-14
HKP015015ZEA....L-14
HKP015015ZKA....L-14
HKP020025R3A....L-14
HKP020025ZDA....L-14
HKP020025ZEA....L-14
HKP020025ZKA....L-14
HKP040060R5A....L-14
HKP040060Z5A....L-14
HKP040060ZDA....L-14
HKP040060ZEA....L-14
HKP040060ZKA....L-14
HLF180S....B-3
HLF190S....B-3
HLF199S....B-3
HLF280S....B-3
HLF290S....B-3
HLF299S....B-3
HLF380S....B-3
HLF390S....B-3
HLF399S....B-3
HLF480S....B-3
HLF490S....B-3
HLF499S....B-3
HMC180....B-5
HMC190....B-5
HMC199....B-5
HMC280....B-5
HMC290....B-5
HMC299....B-5
HMC380....B-5
HMC390....B-5
HMC399....B-5
HMC480....B-5
HMC490....B-5
HMC499....B-5
HMD180....B-4
HMD190....B-4
HMD199....B-4
HMD280....B-4
HMD290....B-4
HMD299....B-4
HMD380....B-4
HMD390....B-4
HMD399....B-4
HMD480....B-4
HMD490....B-4
HMD499....B-4
HMJ320DR....B-21
HMJ321DR....B-21
HMJ400DR....B-21
HMJ401DR....B-21
HMJ630DE....B-21
HMJ631DE....B-21
HMW400JR....B-22
HMW401JR....B-22
HMW630JR....B-22
HMW631JR....B-22
HN-A25....M-3
HNA025U....B-21
HNA026U....B-21
HNA040U....B-21
HNA041U....B-21
HNA063U....B-21
HNA064U....B-21
HNA100U....B-21
HNA101U....B-21
HNA125U....B-21
HNA126U....B-21
HNA160U....B-21
HNA161U....B-21
HNB250U....B-21
HNB251U....B-21
HND320P....B-21
HND400P....B-21
HNE500P....B-21
HNE630P....B-21
HNE800H....B-22
HNE800P....B-21

HNE801H ..... B-22
HNE970H ..... B-22
HNE971H ..... B-22
HNF980H ..... B-22
HNF981H ..... B-22
HNF990H ..... B-22
HNF991H ..... B-22
HNKE16 ..... M-3
HNKE4 ..... M-3
HNKE50 ..... M-3
HNN3 ..... M-3
HNN4 ..... M-3
HP-SST-200-02 ..... L-21
HP-SST-200-03 ..... L-21
HP-SST-200-04 ..... L-21
HP3 ..... M-3
HPN-6A-2500-3-PP ..... C-23
HR500 ..... B-9
HR502 ..... B-9
HR510 ..... B-9
HR520 ..... B-9
HR700 ..... B-9
HR742 ..... B-9
HR743 ..... B-9
HR745 ..... B-9
HR830 ..... B-9
HRD025144 ..... F-8
HRD025274 ..... F-8
HRD038144 ..... F-8
HRD038374 ..... F-8
HRD050144 ..... F-8
HRD050274 ..... F-8
HRD075374 ..... F-8
HRD100274 ..... F-8
HRS013074 ..... F-8
HRS025074 ..... F-8
HRS050074 ..... F-8
HRS054144 ..... F-8
HS-600 ..... L-16
HT-TC026 ..... M-5
HT-TC041N ..... M-5
HT45-E ..... M-5
HTM060 ..... H-21
HTM100 ..... H-21
HTM150 ..... H-21
HTR-3A-100A-P ..... C-23
HTR-3A-1024A-P ..... C-23
HTR-3A-360A-P ..... C-23
HTR-3A-500A-P ..... C-23
HTR-5B-1024A-H ..... C-23
HTR-5B-1024A-P ..... C-23
HTR-5B-2000A-H ..... C-23
HTR-5B-2000A-P ..... C-23
HTR-5B-360A-H ..... C-23
HTR-5B-360A-P ..... C-23
HTR-HD30-1024-3-PP ... C-23
HTR-HD30-600-3-PP ..... C-23
HTR-HM15-1024-3-PP ... C-23
HTR-HM15-600-3-PP ..... C-23
HTR-HN-8-1024A-P ..... C-23
HTR-HN-8-360A-P ..... C-23
HTR-HN-8-500A-P ..... C-23
HW1E312DB ..... B-28
HW1E312FB ..... B-27
HW1E316DB ..... B-28
HW1E316FB ..... B-27
HW1E412DB ..... B-28
HW1E412FB ..... B-27
HW1E416DB ..... B-28
HW1E416FB ..... B-27
HW1W312DS ..... B-28
HW1W312FS ..... B-27
HW1W316DS ..... B-28
HW1W316FS ..... B-27
HW1W412DS ..... B-28
HW1W412FS ..... B-27
HW1W416DS ..... B-28
HW1W416FS ..... B-27
HW2E325DB ..... B-28
HW2E325FB ..... B-27
HW2E425DB ..... B-28
HW2E425FB ..... B-27
HW2W325DS ..... B-28
HW2W325FS ..... B-27
HW2W425DS ..... B-28
HW2W425FS ..... B-27
HW4S332DB ..... B-28
HW4S332FB ..... B-27
HW4S340DB ..... B-28
HW4S340FB ..... B-27
HW4S432DB ..... B-28
HW4S432FB ..... B-27
HW4S440DB ..... B-28
HW4S440FB ..... B-27
HW4W332DS ..... B-28
HW4W332FS ..... B-27
HW4W340DS ..... B-28
HW4W340FS ..... B-27
HW4W432DS ..... B-28
HW4W432FS ..... B-27
HW4W440DS ..... B-28
HW4W440FS ..... B-27
HWM015 ..... H-21
HWM030 ..... H-21
HWX004HSA ..... B-29
HWX005HSA ..... B-29
HWX014HSA ..... B-29
HWX015HSA ..... B-29
HWX020HSA ..... B-29
HWX022HSA ..... B-29
HWX023HSA ..... B-29
HWX024HSA ..... B-29
HWX025HSA ..... B-29
HWX027HSA ..... B-29
HWX028HSA ..... B-29
HWX029HSA ..... B-29
HWX030HSA ..... B-29
HWX032HSA ..... B-29
HWX033HSA ..... B-29
HWX034HSA ..... B-29
HWX040HSA ..... B-29
HWX042HSA ..... B-29
HWX050HSA ..... B-30
HWX090HSA ..... B-29
HWX701HSA ..... B-29
HWX711HSA ..... B-29
HWY001H ..... B-30
HWY002H ..... B-30
HWY005H ..... B-30
HWY006H ..... B-30
HWY040HSA ..... B-30
HWY041HSA ..... B-30
HWY044HSA ..... B-30
HWY045HSA ..... B-30
HWY089HSA ..... B-30
HWY090HSA ..... B-30
HWY218H ..... B-29
HWY224H ..... B-29
HWY225H ..... B-29
HWY226H ..... B-29
HWY227H ..... B-29
HWY228H ..... B-29
HWY238H ..... B-30
HWY239H ..... B-30
HWY240HSA ..... B-30
HWY241HSA ..... B-30
HWY246HSA ..... B-30
HWY247HSA ..... B-30
HWY248HSA ..... B-30
HWY249HSA ..... B-30
HWY260HSA ..... B-30
HWY261HSA ..... B-30
HWY265HSA ..... B-30
HWY269HSA ..... B-30
HWY280H ..... B-29
HWY281H ..... B-29
HWY284H ..... B-29
HWY285H ..... B-29
HWY288H ..... B-29
HWY289H ..... B-29
HWY701 ..... B-30
HWY702 ..... B-30
HWY703 ..... B-30
HWY704 ..... B-30
HWY705 ..... B-30
HWY950HSA ..... B-29
HWY952HSA ..... B-29
HWY958H ..... B-30
HWY959H ..... B-30
HXA00*H ..... B-23
HXA014H ..... B-23
HXA015H ..... B-23
HXA021H ..... B-23
HXA024H ..... B-23
HXA030H ..... B-23
HXA031H ..... B-23
HXB030H ..... B-23
HXB031H ..... B-23
HXB042H ..... B-24
HXC00*H ..... B-23
HXC021H ..... B-23
HXC024H ..... B-23
HXD00*P ..... B-23
HXD014P ..... B-23
HXD015P ..... B-23
HXD022P ..... B-23
HXD024P ..... B-23
HXD031P ..... B-23
HXD042P ..... B-24
HXE00*P ..... B-23
HXE014H ..... B-23
HXE014P ..... B-23
HXE015H ..... B-23
HXE015P ..... B-23
HXE022P ..... B-23
HXE024P ..... B-23
HXE030H ..... B-23
HXE031H ..... B-23
HXE031P ..... B-23
HXE042H ..... B-24
HXE042P ..... B-24
HXF00*H ..... B-23
HXF030H ..... B-23
HXF031H ..... B-23
HXF042H ..... B-24
HXW030H ..... B-23
HXW031H ..... B-23
HXW042H ..... B-24
HXW044H ..... B-24
HYA014H ..... B-24
HYA015H ..... B-24
HYA019H ..... B-24
HYA027H ..... B-24
HYA028H ..... B-24
HYA033H ..... B-24
HYA036H ..... B-24
HYB001H ..... B-24
HYB011H ..... B-24
HYB012H ..... B-24
HYB019H ..... B-24
HYB021H ..... B-24
HYB022H ..... B-24
HYB033H ..... B-24
HYD019H ..... B-24
HYE021H ..... B-24
HYE022H ..... B-24
HYW001H ..... B-24
HYW014H ..... B-24
HYW015H ..... B-24
HYW019H ..... B-24
HYW023H ..... B-24
HYW024H ..... B-24

IBNP/05 ..... E-25
IBNP/10 ..... E-25
IBNP/15 ..... E-25
IBNP/20 ..... E-25
IBNP/25 ..... E-25
IBNP/30 ..... E-25
IBNP/40 ..... E-25
IBR1/06 ..... E-25
IBR1/08 ..... E-25
IBR1/10 ..... E-25
IBR1/12 ..... E-25
IBR3/12 ..... E-25
IBR3/16 ..... E-25
IBR3/20 ..... E-25
IBR3/25 ..... E-25
IBR3/30 ..... E-25
ID02 ..... H-16
ID03 ..... H-16
ID04 ..... H-16
ID05 ..... H-16
ID06 ..... H-16
ID06E ..... H-16
ID07 ..... H-16
ID07E ..... H-16
ID08 ..... H-16
ID08E ..... H-16
ID3CR-10 ..... H-17
ID3CR-12 ..... H-17
ID3CR-4 ..... H-17
ID3CR-5 ..... H-17
ID3CR-6 ..... H-17
ID3CR-7 ..... H-17
ID3CR-8 ..... H-17
ID3CR-9 ..... H-17
IF9 ..... D-13
IFD6500 ..... G-2
IFD6503 ..... G-2
IFD6530 ..... A-30
IFD8500-A ..... C-17
IFD8510 ..... G-2
IFD9506 ..... G-2
IGR35F ..... H-21
IL1/AN-3A ..... K-3
IL1/AP-3A ..... K-3
IL1/CN-3A ..... K-3
IL1/CP-3A ..... K-3
IL8/AN-3A ..... K-3
IL8/AP-3A ..... K-3
IL8/CN-3A ..... K-3
IL8/CP-3A ..... K-3
IMN1/05 ..... E-25
IMN1/06 ..... E-25
IMN1/07 ..... E-25
IMN1/10 ..... E-25
IMN1/12 ..... E-25
IMN1/15 ..... E-25
IMN1/16 ..... E-25
IMN1/20 ..... E-25
IMN1/25 ..... E-25
IMN2/16 ..... E-25
IMN2/20 ..... E-25
IMN2/25 ..... E-25
IMN2/30 ..... E-25
IMN2/40 ..... E-25
IMN2/50 ..... E-25
IMN2/60 ..... E-25
INC1/D0-3A ..... K-4
ISO2010 ..... L-37
ISO2020 ..... L-37
ISO2030 ..... L-37
ISO2040 ..... L-37
ISO2055 ..... L-37
ISO2070 ..... L-37
ISO2085 ..... L-37
ISO2100 ..... L-37
ISO2140 ..... L-37
ISO2155 ..... L-37
ISO2170 ..... L-37
ISO2185 ..... L-37
ISO2200 ..... L-37
ISO2245 ..... L-37
ISO2257 ..... L-37
ISO2267 ..... L-37
ISO2270 ..... L-37
ISO2280 ..... L-37
ISO2295 ..... L-37
ISO3005 ..... L-37
ISO3015 ..... L-37
ISO3020 ..... L-37
ITB1000 ..... L-35
ITB1005 ..... L-35
ITB1010 ..... L-35
ITB1015 ..... L-35
ITB1020 ..... L-35
ITB1025 ..... L-35
ITB1030 ..... L-35
ITB1035 ..... L-35
ITB1040 ..... L-35
ITB2000 ..... L-35

JD-HFT015-0 ..... L-32
JD-HFT030-0 ..... L-32
JD-HFT060-0 ..... L-32
JD-HFT090-0 ..... L-32
JD-HFT120-0 ..... L-32
JD-HFT180-0 ..... L-32
JD-HFT240-0 ..... L-32
JD-HFT390-0 ..... L-32
JDDBT020-0 ..... L-32
JDDBT030-0 ..... L-32
JDDBT040-0 ..... L-32
JDDBT050-0 ..... L-32
JDDBT060-0 ..... L-32
JDDBT080-0 ..... L-32
JDDBT100-0 ..... L-32
JDY09/M2 ..... A-12
JDY09/P ..... A-12
JDY12/M2 ..... A-12
JDY12/P ..... A-12
JDY18/M2 ..... A-12
JDY18/P ..... A-12
JDY25/M2 ..... A-12
JDY25/P ..... A-12
JDY26/M2 ..... A-12
JDY26/P ..... A-12
JDY38/M2 ..... A-12
JDY38/P ..... A-12
JDY50/M4 ..... A-12
JDY65/M4 ..... A-12
JDY80/M4 ..... A-12
JE003 ..... H-11
JLK1005 ..... L-40
JLK1010 ..... L-40
JLK1015 ..... L-40
JLK1020 ..... L-40
JLK1021 ..... L-40
JLK1023 ..... L-40
JLK1030 ..... L-40
JLK1035 ..... L-40
JLK1040 ..... L-40
JLK1045 ..... L-40
JLK1046 ..... L-40
JLK1048 ..... L-40
JLK1049 ..... L-40
JLK1055 ..... L-40
JLK1060 ..... L-40
JLK1065 ..... L-40
JLK1070 ..... L-40
JLK1071 ..... L-40
JLK1073 ..... L-40
JLK1074 ..... L-40
JLK1075 ..... L-40
JLK1080 ..... L-40
JLK1085 ..... L-40
JLK1090 ..... L-40
JLK1095 ..... L-40
JLK1097 ..... L-40
JLK1098 ..... L-40
JLK1100 ..... L-40
JLK1105 ..... L-40
JLK1110 ..... L-40
JLK1115 ..... L-40
JLK1120 ..... L-40
JLK1130 ..... L-40
JLK1135 ..... L-40
JLK1145 ..... L-40
JLK1150 ..... L-40
JLK1155 ..... L-40
JLK1160 ..... L-40
JLK1165 ..... L-40
JLK1175 ..... L-40
JLK1180 ..... L-40
JP002 ..... H-3
JP024 ..... H-6
JSL 1305-1 ..... M-3

KB A1 S11 ..... K-31
KB B2 S11 ..... K-31
KB C2 S11 ..... K-31
KB D2 S11 ..... K-31
KB E2 S11 ..... K-31
KB F2 S11 ..... K-31
KB H1 S11 ..... K-31
KB L2 S11 ..... K-31
KB M1 S11 ..... K-31
KB N1 L11 ..... K-48
KB N2 L11 ..... K-48
KB P1 L11 ..... K-31
KB P2 L11 ..... K-31
KB Q1 L11 ..... K-48
KB163N ..... B-7
KB163P ..... B-7
KB190C ..... B-7
KB263C ..... B-7
KB363C ..... B-7
KB380B ..... B-7
KB463C ..... B-7
KCD1-104 ..... D-37
KD-8-3 ..... L-32
KF83B ..... B-7
KF83C ..... B-7
KF84A ..... B-7
KG100S11 ..... K-31
KG200S11 ..... K-31
KGX01 ..... K-31
KGX02 ..... K-31
KIT-B-FL750-1 ..... M-6
KIT-BX500ND-1 ..... M-6
KITB1300-C-1 ..... M-6
KITHT131-C-1 ..... M-5
KITHT51-1 ..... M-5
KJ01A ..... H-18
KJ01B ..... H-18
KJ01C ..... H-18
KJ01D ..... H-18
KJ02A ..... H-18
KJ02B ..... H-18
KJ02C ..... H-18
KJ02D ..... H-18
KJ02E ..... H-18
KKC1518 ..... L-11
KM A1 S11 ..... K-31
KM B2 S11 ..... K-31
KM C2 S11 ..... K-31
KM E2 S11 ..... K-31
KM F2 S11 ..... K-31
KM H1 S11 ..... K-31
KM L2 S11 ..... K-31
KM M1 S11 ..... K-31
KM13E ..... H-18
KM13N ..... H-18
KN-1/2PT-8-200-J ..... K-27
KN-1/2PT-8-200-K ..... K-27
KN-1/2PT-8-200-PT ..... K-27
KN-1/2PT-8-300-J ..... K-27
KN-1/2PT-8-300-K ..... K-27
KN-1/2PT-8-300-PT ..... K-27
KN00A ..... H-18
KN04N ..... H-18
KN04P ..... H-18
KN07N ..... H-18
KN07P ..... H-18
KN10E ..... H-18
KN10N ..... H-18
KN10P ..... H-18
KN18E ..... H-18
KN18N ..... H-18
KN18P ..... H-18
KN26E ..... H-18
KN26N ..... H-18
KN26P ..... H-18
KN3C-R1021 ..... D-37
KN3C-R1121 ..... D-37
KN3C-R1122 ..... D-37
KN3C-R1221 ..... D-37
KN3C-R1321 ..... D-37
KN3C-R1322 ..... D-37
KN99E ..... H-18
KN99N ..... H-18
KN99P ..... H-18
KPC-CC01 ..... A-26
KPMS-LE01 ..... A-26
KR100S11 ..... K-31
KR200S11 ..... K-31
KX B A11 ..... K-31
KX B L11 ..... K-31
KX B L21 ..... K-31
KX B S02 ..... K-31
KX B S11 ..... K-31
KX N1 ..... K-48
KX N2 ..... K-48
KX N3 ..... K-48
KX N4 ..... K-48
KZ022 ..... B-7
KZ023A ..... B-7
KZ024 ..... B-7

L03-M ..... L-24
L06-M ..... L-24
L1-M ..... L-24
L10-M ..... L-24
L14-M ..... L-24
L19-M ..... L-24
L2-M ..... L-24
L24-M ..... L-24
L3-M ..... L-24
L30-M ..... L-24
L37-M ..... L-24
L48-M ..... L-24
L48P8 ..... J-29
L48TPBM240 ..... J-29
L48TPM240 ..... J-29
L48TPS240 ..... J-29
L5-M ..... L-24
L7-M ..... L-24
LA51230A ..... J-35
LA55230A ..... J-35
LA55400A ..... J-35
LB1-3V ..... L-20
LB1-4.6V ..... L-20
LB2-3V ..... L-20
LB2-4.6V ..... L-20
LB5-3V ..... L-20
LB5-4.6V ..... L-20
LB6BP03 ..... D-35
LB6BP05 ..... D-35
LB6BP07 ..... D-35
LB6EL1 ..... D-35
LB6EL3 ..... D-35
LB6EL4 ..... D-35
LB6EL5 ..... D-35
LB6EL6 ..... D-35
LB6EL8 ..... D-35
LB6GLB1 ..... D-35
LB6GLB3 ..... D-35
LB6GLB4 ..... D-35
LB6GLB5 ..... D-35
LB6GLB6 ..... D-35
LB6GLM1 ..... D-35
LB6GLM3 ..... D-35
LB6GLM4 ..... D-35
LB6GLM5 ..... D-35
LB6GLM6 ..... D-35
LC 100 ..... M-4
LCP-1250A4FDRJ ..... G-1
LE40SZSN20DPR-E2 ..... K-15
LE40XZSF15DPR-D ..... K-15
LE40XZSN20ATO-D ..... K-15
LE40XZSN20DNR-D ..... K-15
LE40XZSN20DPR-D ..... K-15
LE80XZSN50ATO-D ..... K-15
LE80XZSN50DPR-D ..... K-15
LF01-150 ..... K-39
LF01-200 ..... K-39
LF01-250 ..... K-39
LF01-300 ..... K-39
LF01-400 ..... K-39
LF01-500 ..... K-39
LF01-600 ..... K-39
LF01-700 ..... K-39
LF10-1H11123-115 ..... K-29
LF10-1H11123-150 ..... K-29
LF10-1H11123-80 ..... K-29
LF16-111-40PSI ..... K-29
LF16-111-50PSI ..... K-29
LF16-111-60PSI ..... K-29
LF18-111121-10BAR ..... K-29
LF18-111121-5BAR ..... K-29
LF18-111121-7BAR ..... K-29
LF19-111121-3BAR ..... K-29
LF19-111121-4BAR ..... K-29
LF5503 ..... K-29
LF5506 ..... K-29
LF5510 ..... K-29
LF5516 ..... K-29
LF5520 ..... K-29
LFS5-1000 ..... K-39
LFS5-1000/4-20 ..... K-39
LFS5-1200 ..... K-39
LFS5-1200/4-20 ..... K-39
LFS5-1400 ..... K-39
LFS5-1400/4-20 ..... K-39
LFS5-150 ..... K-39
LFS5-150/4-20 ..... K-39
LFS5-1600 ..... K-39
LFS5-1600/4-20 ..... K-39
LFS5-200 ..... K-39
LFS5-200/4-20 ..... K-39
LFS5-2000 ..... K-39
LFS5-2000/4-20 ..... K-39
LFS5-250 ..... K-39
LFS5-300 ..... K-39
LFS5-300/4-20 ..... K-39
LFS5-350 ..... K-39
LFS5-400 ..... K-39
LFS5-400/4-20 ..... K-39
LFS5-500 ..... K-39
LFS5-500/4-20 ..... K-39
LFS5-600 ..... K-39
LFS5-600/4-20 ..... K-39
LFS5-800 ..... K-39
LFS5-800/4-20 ..... K-39
LFTN-150 ..... K-39
LFTN-200 ..... K-39
LFTN-250 ..... K-39
LFTN-300 ..... K-39
LFTN-400 ..... K-39
LFTN-500 ..... K-39
LFTN-600 ..... K-39
LFTN-700 ..... K-39
LH-E-HD-265B ..... L-15
LH-E-HD-360B ..... L-15
LH-HD-380B ..... L-15
LH-HD-380UV ..... L-15
LH-HD-550B ..... L-15

LH-HSD-530B....L-15
LH-I-150B....L-15
LH-I-150N....L-15
LH-I-150UV....L-15
LH-I-250B....L-15
LH-I-250N....L-15
LH-I-370B....L-15
LH-M-100B....L-15
LH-M-100N....L-15
LH-M-100UV....L-15
LH-M-150B....L-15
LH-MP-12/3MB....L-15
LH-MP-20/3MB....L-15
LH-MP-20/3MN....L-15
LH-MP-30/3MB....L-15
LH-MP-30/3MN....L-15
LH-MP-40/3MB....L-15
LH-S-200B....L-15
LH-S-200UV....L-15
LH-S-300B....L-15
LH-S-300UV....L-15
LH-S-390B....L-15
LH-S-390N....L-15
LH-SC-M3B....L-15
LH-SC-M3SB....L-15
LH-SC-M4B....L-15
LH-SC-M5B....L-15
LK20K13....K-34
LMP B102T11....D-9
LMP B103T10....D-9
LMP B103T11....D-9
LMP B104T01....D-9
LMP B104T11....D-9
LMP B108T11....D-9
LMP B204T11....D-9
LMP B6144T11....D-9
LMP B6644T01....D-9
LMP B6644T11....D-9
LMP Q102T11....D-9
LMP S120T10....D-9
LMP S120T11....D-9
LMP S130T20....D-9
LMP S131T20....D-9
LMP S320T10....D-9
LMP S330T20....D-9
LP1230A....J-36
LP2230A....J-36
LP3400A....J-36
LP9P02R....D-11
LP9S01R....D-11
LPC B102....D-1
LPC B103....D-1
LPC B104....D-1
LPC B105....D-1
LPC B106....D-1
LPC B1104....D-1
LPC B1113....D-1
LPC B1134....D-1
LPC B1142....D-1
LPC B1152....D-1
LPC B1163....D-1
LPC B1196....D-1
LPC B202....D-1
LPC B203....D-1
LPC B204....D-1
LPC B205....D-1
LPC B206....D-1
LPC B2104....D-1
LPC B6144....D-1
LPC B6164....D-1
LPC B6344....D-1
LPC B6634....D-1
LPC B6644....D-1
LPC B6744....D-1
LPC B6844....D-1
LPC B7113....D-1
LPC B7191....D-1
LPC B71S02....D-1
LPC B7223....D-1
LPC B7345....D-1
LPC B7355....D-1
LPC B7365....D-1
LPC B7375....D-1
LPC BL103....D-2
LPC BL104....D-2
LPC BL105....D-2
LPC BL106....D-2
LPC BL203....D-2
LPC BL204....D-2
LPC BL205....D-2
LPC BL206....D-2
LPC BL207....D-2
LPC BL6144....D-2
LPC BL6644....D-2
LPC BL7223....D-1
LPC D01....D-10
LPC D03....D-10
LPC D05....D-10
LPC D06....D-10
LPC PA001....D-10
LPC PA005....D-10
LPC PA010....D-10
LPC Q102....D-1
LPC Q103....D-1
LPC Q104....D-1
LPC Q105....D-1
LPC Q106....D-1
LPC Q202....D-1
LPC Q203....D-1
LPC Q204....D-1
LPC Q205....D-1
LPC Q206....D-1
LPC QL103....D-2
LPC QL104....D-2
LPC QL105....D-2
LPC QL106....D-2
LPC QL203....D-2
LPC QL204....D-2
LPC QL205....D-2
LPC QL206....D-2
LPC QL207....D-2
LPC R1002....D-3
LPC R1004....D-3
LPC R1006....D-3
LPC R1196....D-3
LPC S120....D-2
LPC S121....D-2
LPC S130....D-2
LPC S131....D-2
LPC S132....D-2
LPC S133....D-2
LPC S220....D-2
LPC S221....D-2
LPC S230....D-2
LPC S231....D-2
LPC S232....D-2
LPC S233....D-2
LPC S320....D-2
LPC S321....D-2
LPC S330....D-2
LPC S331....D-2
LPC S332....D-2
LPC S333....D-2
LPC S340....D-2
LPC S360....D-2
LPC S370....D-2
LPC SL1203....D-3
LPC SL1204....D-3
LPC SL1205....D-3
LPC SL1206....D-3
LPC SL1208....D-3
LPC SL1213....D-3
LPC SL1214....D-3
LPC SL1215....D-3
LPC SL1216....D-3
LPC SL1218....D-3
LPC SL1303....D-3
LPC SL1304....D-3
LPC SL1305....D-3
LPC SL1306....D-3
LPC SL1308....D-3
LPC SL1313....D-3
LPC SL1314....D-3
LPC SL1315....D-3
LPC SL1316....D-3
LPC SL1318....D-3
LPC ZSA....D-10
LPC ZSAIP....D-10
LPC ZSB....D-10
LPC ZSBIP....D-10
LPC ZSM....D-10
LPC ZSMIP....D-10
LPF B102....D-6
LPF B103....D-6
LPF B104....D-6
LPF B105....D-6
LPF B106....D-6
LPF B204....D-6
LPF BL103....D-6
LPF BL104....D-6
LPF BL105....D-6
LPF BL106....D-6
LPF L3....D-6
LPF L4....D-6
LPF L5....D-6
LPF L6....D-6
LPF S120....D-6
LPF S121....D-6
LPF S130....D-6
LPF S131....D-6
LPF S133....D-6
LPF S320....D-6
LPF S321....D-6
LPF S330....D-6
LPF S331....D-6
LPF S340....D-6
LPF S370....D-6
LPF SL1203....D-6
LPF SL1204....D-6
LPF SL1303....D-6
LPFX AU100G....D-8
LPL 3....D-2
LPL 4....D-2
LPL 5....D-2
LPL 6....D-2
LPL 7....D-2
LPM LB1....D-9
LPM LB3....D-9
LPM LB4....D-9
LPM LB5....D-9
LPM LB6....D-9
LPM LB7....D-9
LPM LE1....D-9
LPM LE3....D-9
LPM LE4....D-9
LPM LE5....D-9
LPM LE6....D-9
LPM LE7....D-9
LPM LM1....D-9
LPM LM3....D-9
LPM LM4....D-9
LPM LM5....D-9
LPM LM6....D-9
LPM LM7....D-9
LPS B102....D-4
LPS B103....D-4
LPS B104....D-4
LPS B105....D-4
LPS B106....D-4
LPS B1104....D-4
LPS B1113....D-4
LPS B1134....D-4
LPS B1142....D-4
LPS B1152....D-4
LPS B1163....D-4
LPS B1196....D-4
LPS B202....D-4
LPS B203....D-4
LPS B204....D-4
LPS B2104....D-4
LPS B6144....D-4
LPS B6634....D-4
LPS B6644....D-4
LPS B6844....D-4
LPS B7113....D-4
LPS B7191....D-4
LPS B7223....D-4
LPS B7345....D-4
LPS B7355....D-4
LPS B7365....D-4
LPS B7375....D-4
LPS BL103....D-5
LPS BL104....D-5
LPS BL105....D-5
LPS BL106....D-5
LPS BL203....D-5
LPS BL204....D-5
LPS BL205....D-5
LPS BL206....D-5
LPS BL6644....D-5
LPS J200....D-5
LPS J201....D-5
LPS J210....D-5
LPS J211....D-5
LPS J400....D-5
LPS J401....D-5
LPS J410....D-5
LPS J411....D-5
LPS L3....D-5
LPS L4....D-5
LPS L5....D-5
LPS L6....D-5
LPS L7....D-5
LPS S120....D-4
LPS S121....D-4
LPS S130....D-4
LPS S131....D-4
LPS S132....D-4
LPS S133....D-4
LPS S320....D-4
LPS S321....D-4
LPS S330....D-4
LPS S331....D-4
LPS S333....D-4
LPS S340....D-4
LPS S360....D-4
LPS S370....D-4
LPS SL1203....D-5
LPS SL1204....D-5
LPS SL1205....D-5
LPS SL1206....D-5
LPS SL1303....D-5
LPS SL1304....D-5
LPS SL1305....D-5
LPS SL1306....D-5
LPX A130....D-8
LPX A140....D-8
LPX A150....D-8
LPX A162....D-8
LPX A162M....D-8
LPX A170....D-8
LPX A170R....D-8
LPX A200....D-8
LPX AU00....D-8
LPX AU01....D-8
LPX AU100....D-8
LPX AU101....D-8
LPX AU105....D-8
LPX AU108....D-8
LPX AU108EN....D-8
LPX AU109....D-8
LPX AU109EN....D-8
LPX AU110....D-8
LPX AU113....D-8
LPX AU115....D-8
LPX AU120....D-7
LPX AU120M....D-7
LPX AU13....D-8
LPX AU14....D-8
LPX AU157....D-8
LPX AU158....D-8
LPX AU159....D-8
LPX AU167....D-8
LPX AU170....D-8
LPX B10....D-8
LPX B20....D-8
LPX BL10....D-8
LPX BL20....D-8
LPX C01....D-7
LPX C01D....D-7
LPX C02....D-7
LPX C10....D-7
LPX C10A....D-7
LPX C11....D-7
LPX C20....D-7
LPX CB01....D-11
LPX CB10....D-11
LPX CS01....D-7
LPX CS10....D-7
LPX DAU115024....D-8
LPX DAU115230....D-8
LPX DIN....D-8
LPX LFB3....D-7
LPX LFB4....D-7
LPX LFB5....D-7
LPX LFB6....D-7
LPX LFB8....D-7
LPX LFE....D-7
LPX LFM3....D-7
LPX LFM4....D-7
LPX LFM5....D-7
LPX LFM6....D-7
LPX LFM8....D-7
LPX LPB3....D-7
LPX LPB4....D-7
LPX LPB5....D-7
LPX LPB6....D-7
LPX LPB8....D-7
LPX LPBB....D-11
LPX LPBM....D-11
LPX LPE3....D-7
LPX LPE4....D-7
LPX LPE5....D-7
LPX LPE6....D-7
LPX LPE8....D-7
LPX LPM3....D-7
LPX LPM4....D-7
LPX LPM5....D-7
LPX LPM6....D-7
LPX LPM8....D-7
LPX LPSB....D-7
LPX LPSM....D-7
LPZ M12CA8....D-11
LPZ M16CA8....D-11
LPZ M1A5....D-11
LPZ M1A5P....D-11
LPZ M1A8....D-11
LPZ M1E8....H-2
LPZ M2A8....D-11
LPZ M2E8....H-2
LPZ M3A8....D-11
LPZ M3E8....H-2
LPZ M4A8....D-11
LPZ M5A8....D-11
LPZ M5E8....H-2
LPZ M6A8....D-11
LPZ M6E8....H-2
LPZ M7E8....H-2
LPZ M8CA8....D-11
LPZ P1A5....D-11
LPZ P1A5P....D-11
LPZ P1A8....D-11
LPZ P1B5600....D-11
LPZ P1B8100....D-11
LPZ P1B8102....D-11
LPZ P2A8....D-11
LPZ P2B802ZA....D-11
LPZ P2B8901....D-11
LPZ P3A8....D-11
LPZ P3B8907....D-11
LPZ P4A8....D-11
LPZ P5A8....D-11
LPZ P6A8....D-11
LPZ XP5....D-11
LPZ XP8....D-11
LR12XAF02FLCN....K-15
LR12XAN04FLCN....K-15
LR18XAF05FLCN....K-15
LR18XAN08FLCN....K-15
LRD10RA240....C-24
LRD12RD024....C-24
LRD20RA240....C-24
LRD20RD012....C-24
LRD20RD024....C-24
LRD20RD024P1....C-24
LRE08RA240....C-24
LRE08RD024....C-24
LREP00....C-24
LRXC02....C-24
LRXC03....C-24
LRXM00....C-24
LRXP01....C-24
LRXSW....C-24
LRXSWP01....C-24
LS-052-1....K-37
LS-055-1....K-38
LS-064A....K-37
LS-147....K-38
LS-148....K-38
LS-154-1....K-38
LS-264....K-37
LS-297....K-37
LS-317....K-37
LS-318-1....K-37
LSN501....B-17
LSN502....B-17
LSP120-01-LD6....I-18
LSP120-01-LM6....I-18
LSP120-01-M6....I-18
LSP120-02-LD6....I-18
LSP120-02-LM6....I-18
LSP120-02-M6....I-18
LSP200-01-LD8....I-18
LSP200-01-LM6....I-18
LSP200-01-M6....I-18
LSP200-02-LD8....I-18
LSP200-02-LM6....I-18
LSP200-02-M6....I-18
LSP400-01-LD10....I-18
LSP400-01-LM8....I-18
LSP400-01-M8....I-18
LSP400-02-LD10....I-18
LSP400-02-LM8....I-18
LSP400-02-M8....I-18
LT7ALLB....D-35
LT7ALLM....D-35
LT7BP01....D-35
LT7BP02....D-35
LTN50BM1....D-35
LTN50BP1....D-35
LTN50BP3....D-35
LTN50C....D-35
LTN50ML1....D-35
LTN50ML3....D-35
LTN50ML4....D-35
LTN50ML6....D-35
LTN50ML8....D-35
LTN50MSL....D-35
LTN50MW024....D-35
LTN50MW230....D-35
LTN50P100T....D-35
LTN70BM1....D-36
LTN70BP1....D-36
LTN70BP3....D-36
LTN70C....D-36
LTN70ML1....D-36
LTN70ML3....D-36
LTN70ML4....D-36
LTN70ML6....D-36
LTN70ML8....D-36
LTN70MSL....D-36
LTN70MW024....D-36
LTN70MW230....D-36
LTN70P100T....D-36
LV1024A....J-36
LV1024D....J-36
LV1110A....J-36
LV1230A....J-36
LV1400A....J-36
LV1525A....J-36
LVC1230A....J-36
LVFSA1D05....J-20
LVFSA1D10....J-20
LVFSA1D15....J-20
LVFSN1B05....J-20
LVFSN1B10....J-20
LVFSN1B15....J-20
LVFSP1W05....J-20
LVFSP1W10....J-20
LVFSP1W15....J-20
LVM20A240....J-19
LVM20A415....J-19
LVM25240....J-19
LVM30A240....J-19
LVM30A415....J-19
LVM40A240....J-19
LVM40A415....J-19
LVMP05....J-19
LVMP10A240....J-19
LX-101-P-Z....K-18
LZ060....B-7

**M**-7-J....K-27
M-7-K....K-27
M1-2.8V/5....L-20
M1-2.8VD/5....L-20
M1-4.8V/5....L-20
M1-4.8VD/5....L-20
M1-6.4V....L-20
M1-6.4VD....L-20
M1011B....L-33
M1011G....L-33
M1011V....L-33
M1015B....L-33
M1015G....L-33
M1015V....L-33
M107B....L-33
M107G....L-33
M107V....L-33
M1N....A-11
M1P00912A4....A-11
M1P00912A5....A-11
M1P00912A6....A-11
M1P00912A7....A-11
M1P00912A8....A-11
M1P00912A9....A-11
M1P00912B0....A-11
M1P01812B1....A-11
M1PA....A-11
M2-2.8V/5....L-20
M2-2.8VD/5....L-20
M2-4.8V/5....L-20
M2-4.8VD/5....L-20
M2-6.4V....L-20
M2-6.4VD....L-20
M24N....A-11
M25N....A-11
M2N....A-11
M2P02512B2....A-11
M2P03212B4....A-11
M2P03812B5....A-11
M2PA....A-11
M3N....A-11
M3PA....A-11
M5-6.4V....L-20
M5-6.4VD....L-20
MA1-50....M-7
MA10-50....M-7
MA10-C....M-7
MA102Z....B-2
MA106Z....B-2
MA110Z....B-2
MA116Z....B-2
MA120Z....B-2
MA125Z....B-2
MA132Z....B-2
MA14-50....M-7
MA14-C....M-7
MA140Z....B-2
MA150Z....B-2
MA163Z....B-2
MA19-50....M-7
MA19-C....M-7
MA2.3-50....M-7
MA202Z....B-2
MA206Z....B-2
MA210Z....B-2
MA216Z....B-2
MA220Z....B-2
MA225Z....B-2
MA232Z....B-2
MA24-50....M-7
MA24-C....M-7
MA240Z....B-2
MA250Z....B-2
MA263Z....B-2
MA30-C....M-7
MA302Z....B-2
MA306Z....B-2
MA310Z....B-2
MA316Z....B-2
MA320Z....B-2
MA325Z....B-2
MA332Z....B-2
MA340Z....B-2
MA350Z....B-2
MA363Z....B-2
MA37-C....M-7
MA406Z....B-2
MA410Z....B-2
MA416Z....B-2
MA420Z....B-2
MA425Z....B-2
MA432Z....B-2
MA440Z....B-2
MA450Z....B-2
MA463Z....B-2
MA48-C....M-7
MA5-50....M-7
MA60-C....M-7
MA7-50....M-7
MA7-C....M-7
MC 25....M-4
MCR1100....L-35
MD630F....B-10
MD63DK06....B-10
MD63DK08....B-10
MD63DK09....B-10
MD63DK10....B-10
MD63DK11....B-10
MD63DK12....B-10
MD63DK13....B-10
MD63DK14....B-10
MD63FK06....B-10

MD63FK08 ..... B-10
MD63FK09 ..... B-10
MD63FK10 ..... B-10
MD63FK11 ..... B-10
MD63FK12 ..... B-10
MD63FK13 ..... B-10
MD63FK14 ..... B-10
MD63S/024 ..... B-10
MD63S/048 ..... B-10
MD63S/230 ..... B-10
MD63SK02 ..... B-10
MD63SK04 ..... B-10
MD63SK05 ..... B-10
MD63SK06 ..... B-10
MD63SK08 ..... B-10
MD63SK09 ..... B-10
MD63SK10 ..... B-10
MD63SK11 ..... B-10
MD63SK12 ..... B-10
MD63SK13 ..... B-10
MD63SK14 ..... B-10
MD63UO/230 ..... B-10
ME024FD024 ..... A-15
ME024FSD024 ..... A-15
ME024RD024 ..... A-15
ME024RSD024 ..... A-15
ME070FD024 ..... A-15
ME070FSD024 ..... A-15
ME070RD024 ..... A-15
ME070RSD024 ..... A-15
ME1 ..... M-7
ME1-50 ..... M-7
ME10 ..... M-7
ME10-50 ..... M-7
ME10-C ..... M-7
ME14 ..... M-7
ME14-50 ..... M-7
ME14-C ..... M-7
ME19 ..... M-7
ME19-50 ..... M-7
ME19-C ..... M-7
ME2 ..... M-7
ME2-50 ..... M-7
ME24 ..... M-7
ME24-50 ..... M-7
ME24-C ..... M-7
ME24L-50 ..... M-7
ME3 ..... M-7
ME3-50 ..... M-7
ME30 ..... M-7
ME30-50 ..... M-7
ME30-C ..... M-7
ME30L-50 ..... M-7
ME37-50 ..... M-7
ME37-C ..... M-7
ME48-50 ..... M-7
ME48-C ..... M-7
ME5 ..... M-7
ME5-50 ..... M-7
ME60-C ..... M-7
ME7 ..... M-7
ME7-50 ..... M-7
ME7-C ..... M-7
ME80-C ..... M-7
MEC-SG1026S ..... A-31
MEC-SG3026S ..... A-31
MG-120 ..... H-20
MG-172 ..... H-20
MG-220 ..... H-20
MG-250 ..... H-20
MG-80 ..... H-20
MG-92 ..... H-20
MG4 ..... M-6
MGM12-6.5 ..... L-25
MGM16-8 ..... L-25
MGM18-10 ..... L-25
MGM20-12 ..... L-25
MGM20-12L ..... L-25
MGM22-14 ..... L-25
MGM25-16 ..... L-25
MGM25-16L ..... L-25
MGM32-22 ..... L-25
MGM40-30 ..... L-25
MGM50-38 ..... L-25
MGM63-44 ..... L-25
MGM8-4.5 ..... L-25
MJT702 ..... B-1
MJT706 ..... B-1
MJT710 ..... B-1
MJT716 ..... B-1
MJT720 ..... B-1
MJT725 ..... B-1
MJT732 ..... B-1
MJT740 ..... B-1
MKC-AFM ..... A-30
MKC-BFM ..... A-30
MKC-CFM ..... A-30
MKC-DN1CB ..... A-30
MKC-EN1CB ..... A-30
MKC-FN1CB ..... A-30
MKC-KPPK ..... A-30
MKM-DRB ..... A-26
MKM-DRC ..... A-26
MKM-HUB01 ..... A-26
ML100L1-4 ..... A-38
ML100L1-4 B5 ..... A-40
ML711-2 ..... A-38
ML711-2 B5 ..... A-40
ML711-4 ..... A-38
ML711-4 B5 ..... A-40
ML712-2 ..... A-38
ML712-2 B5 ..... A-40
ML712-4 ..... A-38
ML712-4 B5 ..... A-40
ML801-2 ..... A-38
ML801-2 B5 ..... A-40
ML801-4 ..... A-38
ML801-4 B5 ..... A-40
ML802-2 ..... A-38
ML802-2 B5 ..... A-40
ML802-4 ..... A-38
ML802-4 B5 ..... A-40
ML90L-2 ..... A-38
ML90L-2 B5 ..... A-40
ML90L-4 ..... A-38
ML90L-4 B5 ..... A-40
ML90S-2 ..... A-38
ML90S-2 B5 ..... A-40
ML90S-4 ..... A-38
ML90S-4 B5 ..... A-40
MN10RF-50 ..... M-7
MN2RF-50 ..... M-7
MN3RF-50 ..... M-7
MN5RF-50 ..... M-7
MN7RF-50 ..... M-7
MR-5-150-WH-O ..... K-14
MRC2150 ..... L-34
MRC2250 ..... L-34
MRS122 ..... L-34
MRS1501 ..... L-35
MRS1506 ..... L-35
MRS2000 ..... L-35
MRS3000 ..... L-35
MRS3005 ..... L-35
MRS3010 ..... L-35
MRS3500 ..... L-35
MRS416 ..... L-34
MRS420 ..... L-34
MRS5000 ..... L-35
MS-EX201 ..... K-18
MS-HG-01 ..... K-18
MSLX1 ..... K-18
MTB ..... L-34
MTHP46-F ..... I-16
MTHP46-M ..... I-16
MTS-102 ..... D-37
MTS-102T ..... D-37
MTS-103 ..... D-37
MTS-103D ..... D-37
MTS-103T ..... D-37
MTS-202 ..... D-37
MTS-203 ..... D-37
MTT2AB ..... I-16
MV106Z ..... B-1
MV110Z ..... B-1
MV116Z ..... B-1
MV120Z ..... B-1
MV125Z ..... B-1
MV132Z ..... B-1
MV140Z ..... B-1
MV2/A0-0A ..... K-5
MV2/C0-0A ..... K-5
MV4/A0-0A ..... K-5
MV4/C0-0A ..... K-5
MV6/A0-0A ..... K-5
MV6/C0-0A ..... K-5
MVC/A0-0A ..... K-5
MVC/C0-0A ..... K-5
MVE/00-0A ..... K-5
MVM12 ..... L-31
MVM16 ..... L-31
MVM8 ..... L-31
MVR/A0-0A ..... K-5
MVR/C0-0A ..... K-5
MX11P ..... A-11
MX12P ..... A-11
MX21P ..... A-11
MX30 ..... A-11
MX31 ..... A-11
MZ201 ..... B-7
MZ202 ..... B-7
MZ203 ..... B-7
MZ204 ..... B-7
MZ206 ..... B-7
MZ212 ..... B-7
MZN130 ..... B-7
MZN131 ..... B-7
MZN175 ..... B-7

**N**13484A ..... D-13
N62338A ..... D-13
NCN106A ..... B-5
NCN110A ..... B-5
NCN116A ..... B-5
NCN120A ..... B-5
NCN125A ..... B-5
NCN132A ..... B-5
NCN140A ..... B-5
NCN150A ..... B-5
NCN163A ..... B-5
NCN206A ..... B-5
NCN210A ..... B-5
NCN216A ..... B-5
NCN220A ..... B-5
NCN225A ..... B-5
NCN232A ..... B-5
NCN240A ..... B-5
NCN250A ..... B-5
NCN263A ..... B-5
NCN306A ..... B-5
NCN310A ..... B-5
NCN316A ..... B-5
NCN320A ..... B-5
NCN325A ..... B-5
NCN332A ..... B-5
NCN340A ..... B-5
NCN350A ..... B-5
NCN363A ..... B-5
NCN406A ..... B-5
NCN410A ..... B-5
NCN416A ..... B-5
NCN420A ..... B-5
NCN425A ..... B-5
NCN432A ..... B-5
NCN440A ..... B-5
NCN450A ..... B-5
NCN463A ..... B-5
NF102A ..... B-3
NF106A ..... B-3
NF110A ..... B-3
NF116A ..... B-3
NF120A ..... B-3
NF125A ..... B-3
NF132A ..... B-3
NF140A ..... B-3
NF202A ..... B-3
NF206A ..... B-3
NF210A ..... B-3
NF216A ..... B-3
NF220A ..... B-3
NF225A ..... B-3
NF232A ..... B-3
NF240A ..... B-3
NF302A ..... B-3
NF306A ..... B-3
NF310A ..... B-3
NF316A ..... B-3
NF320A ..... B-3
NF325A ..... B-3
NF332A ..... B-3
NF340A ..... B-3
NF406A ..... B-3
NF410A ..... B-3
NF416A ..... B-3
NF420A ..... B-3
NF425A ..... B-3
NF432A ..... B-3
NF440A ..... B-3
NFN150 ..... B-3
NFN163 ..... B-3
NFN250 ..... B-3
NFN263 ..... B-3
NFN350 ..... B-3
NFN363 ..... B-3
NFN450 ..... B-3
NFN463 ..... B-3
NGN102 ..... B-4
NGN104 ..... B-4
NGN106 ..... B-4
NGN110 ..... B-4
NGN116 ..... B-4
NGN120 ..... B-4
NGN125 ..... B-4
NGN132 ..... B-4
NGN140 ..... B-4
NGN150 ..... B-4
NGN163 ..... B-4
NGN202 ..... B-4
NGN206 ..... B-4
NGN210 ..... B-4
NGN216 ..... B-4
NGN220 ..... B-4
NGN225 ..... B-4
NGN232 ..... B-4
NGN240 ..... B-4
NGN250 ..... B-4
NGN263 ..... B-4
NGN306 ..... B-4
NGN310 ..... B-4
NGN316 ..... B-4
NGN320 ..... B-4
NGN325 ..... B-4
NGN332 ..... B-4
NGN340 ..... B-4
NGN350 ..... B-4
NGN363 ..... B-4
NGN406 ..... B-4
NGN410 ..... B-4
NGN416 ..... B-4
NGN420 ..... B-4
NGN425 ..... B-4
NGN432 ..... B-4
NGN440 ..... B-4
NGN450 ..... B-4
NQ418 ..... K-54
NQ618 ..... K-54
NR51UQ10A ..... D-13
NR56EQ10A ..... D-13
NRN106 ..... B-6
NRN110 ..... B-6
NRN116 ..... B-6
NRN120 ..... B-6
NRN125 ..... B-6
NRN132 ..... B-6
NRN140 ..... B-6
NRN150 ..... B-6
NRN163 ..... B-6
NRN206 ..... B-6
NRN210 ..... B-6
NRN216 ..... B-6
NRN220 ..... B-6
NRN225 ..... B-6
NRN232 ..... B-6
NRN240 ..... B-6
NRN250 ..... B-6
NRN263 ..... B-6
NRN306 ..... B-6
NRN310 ..... B-6
NRN316 ..... B-6
NRN320 ..... B-6
NRN325 ..... B-6
NRN332 ..... B-6
NRN340 ..... B-6
NRN350 ..... B-6
NRN363 ..... B-6
NRN406 ..... B-6
NRN410 ..... B-6
NRN416 ..... B-6
NRN420 ..... B-6
NRN425 ..... B-6
NRN432 ..... B-6
NRN440 ..... B-6
NRN450 ..... B-6
NRN463 ..... B-6

**P**01101959 ..... M-11
P01102080 ..... M-11
P01102095 ..... M-11
P01102100Z ..... M-10
P01102157 ..... M-13
P01102204 ..... M-11
P01120323B ..... M-11
P01120434B ..... M-11
P01120439 ..... M-13
P01120526B ..... M-11
P01120580 ..... M-11
P01120925 ..... M-10
P01120947 ..... M-10
P01146013 ..... M-13
P01157151 ..... M-11
P01191773 ..... M-9
P01196773 ..... M-9
P01295174 ..... M-11
P01295476 ..... M-11
P01298076 ..... M-9
P01298078 ..... M-11
P01651904 ..... M-12
P1000S ..... J-19
P2L131312 ..... K-48
P2LU1SAT15AG ..... K-48
P2LU1SAT75AG ..... K-48
P33032 ..... K-48
P33033 ..... K-48
P33034 ..... K-48
P33035 ..... K-48
P33036 ..... K-48
P3G08 ..... J-29
PA01AA01 ..... D-23
PA01AB01 ..... D-23
PA01AC01 ..... D-23
PA020001 ..... D-23
PA030001 ..... D-23
PA030002 ..... D-23
PA10-50 ..... M-7
PA10-C ..... M-7
PA19-50 ..... M-7
PA24-50 ..... M-7
PA24-C ..... M-7
PA48-C ..... M-7
PA5-50 ..... M-7
PA60-C ..... M-7
PA66301 ..... D-21
PA66302 ..... D-21
PA66303 ..... D-21
PA66304 ..... D-21
PB1-6.4V ..... L-21
PB1-6.4VD ..... L-21
PB2-6.4V ..... L-21
PB2-6.4VD ..... L-21
PB5-6.4V ..... L-21
PB5-6.4VD ..... L-21
PDKS11BX10 ..... K-34
PDNS11BX10 ..... K-34
PF21270100 ..... D-22
PF21270101 ..... D-22
PF2304B001 ..... D-22
PF2306B002 ..... D-22
PF2306B003 ..... D-22
PF2308B001 ..... D-22
PF2309B002 ..... D-22
PF2310B001 ..... D-22
PF26755100 ..... D-24
PF33710100 ..... D-24
PF34021004 ..... D-22
PF34021101 ..... D-22
PF34022004 ..... D-22
PF34022201 ..... D-22
PF34023004 ..... D-22
PF34023301 ..... D-22
PF34023501 ..... D-22
PF34024004 ..... D-22
PF34025501 ..... D-22
PF39020001 ..... D-20
PF39020002 ..... D-20
PF39030001 ..... D-20
PF39030002 ..... D-20
PF48020001 ..... D-24
PF48030001 ..... D-24
PF48040001 ..... D-24
PFA9142A0015001 ..... D-23
PFA9142A0025001 ..... D-23
PFA9142A0050001 ..... D-23
PFA9142A0075001 ..... D-23
PFA9142A0103001 ..... D-23
PFA9142A0158001 ..... D-23
PFB9067L0016010 ..... D-23
PFB9067L0027007 ..... D-23
PFB9067L0062033 ..... D-23
PFB9067L0103037 ..... D-23
PFB9067L0162007 ..... D-23
PFB9067L0222011 ..... D-23
PFB9067L0254019 ..... D-23
PFC9067L0031032 ..... D-23
PFC9067L0062004 ..... D-23
PFC9067L0107014 ..... D-23
PFC9067L0156004 ..... D-23
PFC9067L0214004 ..... D-23
PFC9067L0254004 ..... D-23
PFC9067L0313023 ..... D-23
PFK1/BP-3H ..... K-2
PFK1/BP-4H ..... K-2
PFM1/BP-3H ..... K-2
PFM1/BP-4H ..... K-2
PHPM12B ..... L-26
PHPM16B ..... L-26
PHPM20B ..... L-26
PHPM22B ..... L-26
PHPM25B ..... L-26
PHPM32B ..... L-26
PHPM40B ..... L-26
PHPM50B ..... L-26
PHPM63B ..... L-26
PJ-SWB-06 ..... L-27
PJ-SWB-12 ..... L-27
PJ-SWB-19 ..... L-27
PJ-VH-13.0 ..... L-27
PJ-VH-15.8 ..... L-27
PJ-VH-21.2 ..... L-27
PJ-VH-25.0 ..... L-27
PJ-VH-34.5 ..... L-27
PJ-VH-42.5 ..... L-27
PJ-VH-54.5 ..... L-27
PK3/00-1H ..... K-2
PK3/00-2H ..... K-2
PL-5-150-WH-O ..... K-14
PL-Y-AA-1 ..... G-4
PL-Y-AS-1 ..... G-4
PL-Y-AT-1 ..... G-4
PL-Y-T100 ..... G-4
PL-Y-T1000 ..... G-4
PL-Y-T15 ..... G-4
PL-Y-T150 ..... G-4
PL-Y-T250 ..... G-4
PL-Y-T32 ..... G-4
PL-Y-T50 ..... G-4
PL-Y-T500 ..... G-4
PLN131311 ..... K-48
PLNM12B ..... L-26
PLNM16B ..... L-26
PLNM20B ..... L-26
PLNM22B ..... L-26
PLNM25B ..... L-26
PLNM32B ..... L-26
PLNM40B ..... L-26
PLNM50B ..... L-26
PLNM63B ..... L-26
PLNU1AT25W ..... K-48
PM-A-2 ..... G-3
PM-A-24 ..... G-3
PM-A-28 ..... G-3
PM-A-32 ..... G-3
PM-CAB-D-10 ..... G-3
PM-CAB-D-2 ..... G-3
PM-CAB-D-5 ..... G-3
PM-CAB-RS-10 ..... G-3
PM-CAB-RS-2 ..... G-3
PM-CAB-RS-5 ..... G-3
PM-GW-ETH ..... G-3
PM-GW-GE ..... G-3
PM-GW-LTE ..... G-3
PM-GW-LTE-G ..... F-6
PM-MB4442 ..... G-3
PM-S-CUBE ..... G-3
PM3/00-1H ..... K-2
PM3/00-2H ..... K-2
PMA30240 ..... J-18
PMA50A240 ..... J-18
PMA50A415 ..... J-18
PMGB12-5 ..... L-25
PMGB12-5B ..... L-25
PMGB16-7 ..... L-25
PMGB16-7B ..... L-25
PMGB18-10 ..... L-25
PMGB18-10B ..... L-25
PMGB20-13.5 ..... L-25
PMGB20-13.5B ..... L-25
PMGB25-18 ..... L-25
PMGB25-18B ..... L-25
PMGB32-25 ..... L-25
PMGB32-25B ..... L-25
PMGB40-32 ..... L-25
PMGB40-32B ..... L-25
PMGB50-41 ..... L-25
PMGB50-41B ..... L-25
PMGB63-45 ..... L-25
PMGB63-45B ..... L-25
PMT-12V100W2BA ..... B-70
PMT-12V150W2BA ..... B-70
PMT-12V35W2BA ..... B-70
PMT-12V50W2BA ..... B-70
PMT-24V100W2BA ..... B-70
PMT-24V150W2BA ..... B-70
PMT-24V200W2BR ..... B-70
PMT-24V350W2BR ..... B-70
PMT-24V35W2BA ..... B-70
PMT-24V50W2BA ..... B-70
PMT-5V350W1AM ..... B-70
PMV10A440 ..... J-18
PMV20A575 ..... J-18
PMV50A575 ..... J-18
PMV50NA440 ..... J-18
PMV50NA600 ..... J-18
PMV55A240 ..... J-18
PMV95NA575NFC ..... J-18
PMVF81 ..... B-11
PO7000 ..... M-5
PPGA16-E-08B ..... L-26
PPGA20-E-14B ..... L-26
PPGA25-E-18B ..... L-26
PPGA32-E-25B ..... L-26
PPGB11-10B ..... L-25
PPGB13.5-12B ..... L-25
PPGB16-11B ..... L-25
PPGB19-14B ..... L-25
PPGB21-18B ..... L-25
PPGB7-5B ..... L-25
PPGB9-8B ..... L-25
PPKS11BX10 ..... K-34
PR18S-BC10DPC-E2 ..... K-16
PR18S-BC10DPO-E2 ..... K-16
PR18S-BC40DPC-E2 ..... K-16
PR18S-BC40DPO-E2 ..... K-16
PR18S-DM3DPC-E2 ..... K-16
PR18S-DM3DPO-E2 ..... K-16
PR18S-TM20D ..... K-16
PR18S-TM20DPC ..... K-16
PR18S-TM20DPO ..... K-16
PRET0215PE ..... D-20
PRGA0012PE ..... D-20
PRGU6050PE ..... D-21
PRSL0145PE ..... D-20
PRSL0173PI ..... D-22
PRSL0191PI ..... D-21
PRSL0356PI ..... D-23
PRSL0919PI ..... D-23
PRSL0920PI ..... D-23
PRSL0981PI ..... D-23
PRSL1000PI ..... D-20
PRSL1001PI ..... D-20
PRSL1002PI ..... D-20
PRSL1003PI ..... D-20
PRSL1009PI ..... D-20
PRSL1800PI ..... D-19
PRSL1801PI ..... D-19
PRSL1810PI ..... D-20
PRSL1811PI ..... D-20
PRSL1820PI ..... D-19
PRSL1821PI ..... D-19
PRSL1830PI ..... D-20
PRSL1831PI ..... D-20
PRSL1840PI ..... D-20
PRSL1841PI ..... D-20
PRSL1842PI ..... D-20
PRSL1845PI ..... D-20
PRSL1846PI ..... D-20
PRSL1850PI ..... D-20
PRSL1856BIC ..... D-20

PRSL1858BIC ..... D-20
PRSL1862BIC ..... D-20
PRSL1868PI ..... D-20
PRSL1870PI ..... D-20
PRSL1880PI ..... D-20
PRSL1885ROC ..... D-20
PRSL1890PI ..... D-20
PRSL4540PI ..... D-21
PRSL4541PI ..... D-21
PRSL8512PI ..... D-20
PRSL8750PI ..... D-20
PRSL9825PI ..... D-22
PRSL9828PI ..... D-22
PRSL9838PI ..... D-22
PRSL9839PI ..... D-22
PRSL9841PI ..... D-22
PRSL9844PI ..... D-22
PRSL9845PI ..... D-22
PRSL9849PI ..... D-22
PRSL9873PI ..... D-22
PRSL9890PI ..... D-21
PRTA001MPI ..... D-20
PRTA002MPI ..... D-20
PRTA003MPI ..... D-20
PRTA004MPI ..... D-20
PRTA005MPI ..... D-20
PRTA006MPI ..... D-20
PRTA007MPI ..... D-20
PRTA008MPI ..... D-20
PRTA011MPI ..... D-20
PRTA012MPI ..... D-20
PRTA0150PE ..... D-21
PRTA0151PE ..... D-21
PRTA0152PE ..... D-21
PRTA018MPI ..... D-20
PRTA019MPI ..... D-20
PRTA022MPI ..... D-20
PRTA023MPI ..... D-20
PRTA026MPI ..... D-20
PRTA027MPI ..... D-20
PRTA095MPI ..... D-20
PRTR0160PE ..... D-22
PRTR1035PE ..... D-20
PRVV9020PE ..... D-21
PRVV9025PE ..... D-21
PRVV9035PE ..... D-21
PS3S ..... J-19
PSC-100N ..... B-63
PSC-25/230 ..... B-63
PSC-5/1000 PV ..... B-65
PSC-5/1500 PV ..... B-65
PSC2-25/230 TT ..... B-63
PSC2-25/230 TT IR ..... B-63
PSC3-5/1000 PV ..... B-65
PSC3-5/1000 PV IR ..... B-65
PSC3-5/1500 PV ..... B-65
PSC3-5/1500 PV IR ..... B-65
PSC4-25/400 TT ..... B-63
PSC4-25/400 TT IR ..... B-63
PSE-BC30DPBR-E3 ..... K-16
PSE-GM2DPBB-E3 ..... K-16
PSE-PM3DPBR-E3 ..... K-16
PSE-TM10DPBR-E3 ..... K-16
PSE-TM10DR-E3 ..... K-16
PSE-TM20D-E3 ..... K-16
PSE-TM20DPB-E3 ..... K-16
PSM-20/230 ..... B-64
PSM-20N ..... B-64
PSM-30/750 ..... B-64
PSM-40/1000 PV ..... B-65
PSM-40/1500 PV ..... B-65
PSM-40/600 PV ..... B-65
PSM1-20/230 ..... B-64
PSM1-20N ..... B-64
PSM1-30/750 ..... B-64
PSM1-30/750 IR ..... B-64
PSM2-20/230 TT ..... B-64
PSM2-20/230 TT IR ..... B-64
PSM2-40/230 SG ..... B-66
PSM3-30/750 TNC ..... B-64
PSM3-30/750 TNC IR ..... B-64
PSM3-40/1000 PV ..... B-65
PSM3-40/1000 PV IR ..... B-65
PSM3-40/1500 PV ..... B-65
PSM3-40/1500 PV IR ..... B-65
PSM3-40/600 PV ..... B-65
PSM3-40/600 PV IR ..... B-65
PSM4-20/400 TT ..... B-64
PSM4-20/400 TT IR ..... B-64
PSM4-40/400 SG ..... B-66
PSP1002 ..... L-36
PSP1005 ..... L-36
PSR1230A ..... J-36
PSRM12-P-7B ..... L-26
PSRM16-P-10B ..... L-26
PSRM20S-P-12B ..... L-26
PT1-10V ..... L-19
PT2-10V ..... L-19
PT2-12V ..... L-19
PT5-13V ..... L-19
PTF/30 ..... B-45
PTF/35 ..... B-45
PTF/45 ..... B-45
PTF/50 ..... B-45
PTF/78 ..... B-45
PTF/80A ..... B-45
PVBN101A-F2-F ..... I-16
PVBN101A-F2-M ..... I-16
PVM12 ..... L-31
PVM12B ..... L-31
PVM16 ..... L-31
PVM16B ..... L-31
PVM8 ..... L-31
PVM8B ..... L-31
PXL ..... J-19

**Q**01-4 ..... K-54
Q048 ..... D-13
Q05-4 ..... K-54
Q50I8/0T-0A ..... K-10
Q50I8/B0-0E ..... K-10
Q50ID/0T-0A ..... K-10
Q50ID/B0-0E ..... K-10
Q50IH/00-0E ..... K-10
Q50IH/0T-0A ..... K-10
Q50IS/B0-0E ..... K-10
Q50RN/0T-0A ..... K-10
Q50RN/B0-0E ..... K-10
QA31-4 ..... K-54
QCM12-AD13 ..... L-27
QCM16-AD15.8 ..... L-27
QCM20-AD15.8 ..... L-27
QCM20-AD21.2 ..... L-27
QCM25-AD25 ..... L-27
QCM32-AD34.5 ..... L-27
QCM40-AD42.5 ..... L-27
QCM50-AD54.5 ..... L-27
QCM63-AD54.5 ..... L-27
QFI4/BP-1F ..... K-9
QFR8/BP-1F ..... K-9
QFRN/BP-1F ..... K-9
QFRS/BP-1F ..... K-9
QMI9/0P-0F ..... K-9
QMIC/0P-0F ..... K-9
QMR7/0N-0F ..... K-9
QMR7/0P-0F ..... K-9
QMR8/0N-0F ..... K-9
QMR8/0P-0F ..... K-9
QMRHD/0N-0F ..... K-9
QMRHD/0P-0F ..... K-9
QMRL/0N-0F ..... K-9
QMRL/0P-0F ..... K-9
QMRN/0N-0F ..... K-9
QMRN/0P-0F ..... K-9
QMRS/0P-0F ..... K-9
QX3/A0-1A ..... K-11
QX3/C0-1A ..... K-11
QXC/A0-1A ..... K-11
QXC/C0-1A ..... K-11
QXR/A0-1A ..... K-11
QXR/C0-1A ..... K-11
QXX/00-1A ..... K-11

**R**1-10V ..... L-19
R1-12V ..... L-19
R1-3.5MV ..... L-19
R1-3V ..... L-19
R1-4LV ..... L-19
R1-4SV ..... L-19
R1-5V ..... L-19
R1-6V ..... L-19
R1-8V ..... L-19
R1D 415 ..... B-11
R2-10V ..... L-19
R2-12V ..... L-19
R2-3.5MV ..... L-19
R2-3V ..... L-19
R2-4LV ..... L-19
R2-4SV ..... L-19
R2-5SV ..... L-19
R2-6V ..... L-19
R2-8V ..... L-19
R2D 415 ..... B-11
R2U012AD ..... J-33
R2U024AD ..... J-33
R2U110A ..... J-33
R2U230A ..... J-33
R2U400A ..... J-33
R4D 415 ..... B-11
R5-10V ..... L-19
R5-12V ..... L-19
R5-3.5SV ..... L-19
R5-3V ..... L-19
R5-4LV ..... L-19
R5-4SV ..... L-19
R5-5V ..... L-19
R5-6V ..... L-19
R5-8V ..... L-19
RAM16/M12H ..... L-26
RAM20/M16H ..... L-26
RAM25/M20H ..... L-26
RAM32/M25H ..... L-26
RAM40/M32H ..... L-26
RAM50/M40H ..... L-26
RC110 415 ..... B-11
RC60 415 ..... B-11
RC60 48 ..... B-11
RC80 415 ..... B-11
RCD02524 ..... F-8
RCD03734 ..... F-8
RCD05024 ..... F-8
RCD07534 ..... F-8
RCD10024 ..... F-8
RCD64026 ..... F-8
RCS01204 ..... F-8
RCS02504 ..... F-8
RCS05004 ..... F-8
RD-ST1 ..... J-26
RD-TPA1 ..... J-24
RD-TPA2 ..... J-24
RD-TPD1 ..... J-24
RD-TPD2 ..... J-24
RE1-4VF ..... L-21
RE1-4VFD ..... L-21
RE2-5VF ..... L-21
RE2-5VFD ..... L-21
RE5-5VF ..... L-21
RE5-5VFD ..... L-21
RF110095 ..... A-8
RF110110 ..... A-8
RF120016 ..... A-1
RF120025 ..... A-1
RF120040 ..... A-1
RF120063 ..... A-1
RF120080 ..... A-1
RF120100 ..... A-1
RF120160 ..... A-1
RF120250 ..... A-1
RF120400 ..... A-1
RF120630 ..... A-1
RF121000 ..... A-1
RF121250 ..... A-1
RF200150 ..... A-8
RF200200 ..... A-8
RF380016 ..... A-8
RF380025 ..... A-8
RF380040 ..... A-8
RF380063 ..... A-8
RF380100 ..... A-8
RF380160 ..... A-8
RF380250 ..... A-8
RF380400 ..... A-8
RF380650 ..... A-8
RF381000 ..... A-8
RF381400 ..... A-8
RF381800 ..... A-8
RF382300 ..... A-8
RF382500 ..... A-8
RF383200 ..... A-8
RF383800 ..... A-8
RF420250 ..... A-8
RF420300 ..... A-8
RF420420 ..... A-8
RF824200 ..... A-8
RF825000 ..... A-8
RF826500 ..... A-8
RF828200 ..... A-8
RF829500 ..... A-8
RFE450200 ..... A-8
RFE450800 ..... A-8
RFE453200 ..... A-8
RFE454500 ..... A-8
RFX20035 ..... A-8
RFX20036 ..... A-8
RFX3801 ..... A-8
RFX3802 ..... A-8
RFX3803 ..... A-8
RFX3804 ..... A-8
RFX42035 ..... A-8
RFX42036 ..... A-8
RGK400SA ..... F-2
RGK420SA ..... F-2
RGK600 ..... F-1
RGK600SA ..... F-2
RGK601 ..... F-1
RGK601SA ..... F-2
RGK610 ..... F-1
RGK700 ..... F-1
RGK750 ..... F-1
RGK800 ..... F-1
RGK900 ..... F-1
RGK900MC ..... F-1
RGK900SA ..... F-1
RGS304-103 ..... H-17
RGS304-123 ..... H-17
RGS304-30 ..... H-17
RGS304-40 ..... H-17
RGS304-50 ..... H-17
RGS304-65 ..... H-17
RGS304-70 ..... H-17
RGS304-80 ..... H-17
RGS304-93 ..... H-17
RHC131 ..... M-5
RL 103 ..... K-11
RL 104 ..... K-11
RL 107 ..... K-11
RL 110 ..... K-11
RL 112G ..... K-11
RL 113G ..... K-11
RL 116 ..... K-11
RM25P09A5 ..... A-11
RM25P09A6 ..... A-11
RM25P09A7 ..... A-11
RM25P09A8 ..... A-11
RM25P09A9 ..... A-11
RM25P12B0 ..... A-11
RM25P18B1 ..... A-11
RM25P25B2 ..... A-11
ROLLY3000 ..... L-56
RPQ1000 ..... L-36
RPQ1005 ..... L-36
RPQ1010 ..... L-36
RPQ1015 ..... L-36
RPQ1018 ..... L-36
RPT3000 ..... L-36
RPT3005 ..... L-36
RPU2995 ..... L-36
RPU3000 ..... L-36
RPU3005 ..... L-36
RPU3010 ..... L-36
RPU3015 ..... L-36
RPU3020 ..... L-36
RRP1012D ..... J-34
RRP1024AD ..... J-34
RRP1110A ..... J-34
RRP1230A ..... J-34
RS-LC1 ..... J-26
RS-LC3 ..... J-26
RS-MI10A ..... J-25
RS-MI5A ..... J-25
RS-MI5B ..... J-25
RS-MV13 ..... J-25
RS-MV31M ..... J-25
RS-MV32M ..... J-25
RS-MV34M ..... J-25
RS-MV36M ..... J-25
RS-TA14 ..... J-23
RS-TB14 ..... J-23
RS-TC23 ..... J-23
RS-TM14 ..... J-23
RS-TSL ..... J-24
RS-TT13 ..... J-23
RS-WIFI 12 ..... J-23
RS-WIFI 2 ..... J-23
RS11310 ..... K-48
RS131310 ..... K-48
RT110 ..... B-11
RT210 ..... B-11
RT60 ..... B-11
RT80 ..... B-11
RTA110 ..... B-11
RTA210 ..... B-11
RTD/T19W ..... K-27
RTU-485 ..... C-4
RTU-ECAT ..... C-4
RTU-EN01 ..... C-4
RTU-PD01 ..... C-4
RXLG-1.5KW/43RJ ..... A-36
RXLG-1KW/75RJ ..... A-36
RXLG-200W/360RJ ..... A-36
RXLG-200W/91RJ ..... A-36
RXLG-2KW/32RJ ..... A-36
RXLG-300W/250RJ ..... A-36
RXLG-300W/70RJ ..... A-36
RXLG-3KW/26RJ ..... A-36
RXLG-4.8KW/16RJ ..... A-36
RXLG-4KW/20RJ ..... A-36
RXLG-6KW/14RJ ..... A-36
RXLG-80W/200RJ ..... A-36
RXLG-80W/750RJ ..... A-36
RZ3A1A60S3 ..... D-15

**S**1-3.5MV ..... L-19
S1-3.5SV ..... L-19
S1-3V ..... L-19
S1-4MV ..... L-19
S1-4SV ..... L-19
S1-5SV ..... L-19
S1-6SV ..... L-19
S2-3.5MV ..... L-19
S2-3.5SV ..... L-19
S2-3V ..... L-19
S2-4LV ..... L-19
S2-4SV ..... L-19
S2-5SV ..... L-19
S2-6SV ..... L-19
S3N-PH-5-B01-N ..... K-7
S3N-PH-5-B01-P ..... K-7
S3N-PH-5-B03-OZ ..... K-8
S3N-PH-5-FG01-N ..... K-7
S3N-PH-5-FG01-P ..... K-7
S3N-PH-5-FG03-OZ ..... K-8
S3N-PH-5-M01-N ..... K-7
S3N-PH-5-M01-P ..... K-7
S3N-PH-5-M03-OZ ..... K-8
S3N-PR-5-B01-N ..... K-7
S3N-PR-5-B01-PD ..... K-7
S3N-PR-5-B01-PL ..... K-7
S3N-PR-5-B03-OZ ..... K-8
S3N-PR-5-C01-N ..... K-7
S3N-PR-5-C01-PD ..... K-7
S3N-PR-5-C01-PL ..... K-7
S3N-PR-5-C03-OZ ..... K-8
S3N-PR-5-C11-PL ..... K-7
S3N-PR-5-C13-OZ ..... K-8
S3N-PR-5-FG01-N ..... K-7
S3N-PR-5-FG01-PD ..... K-7
S3N-PR-5-FG01-PL ..... K-7
S3N-PR-5-FG03-OZ ..... K-8
S3N-PR-5-M01-N ..... K-7
S3N-PR-5-M01-PD ..... K-7
S3N-PR-5-M01-PL ..... K-7
S3N-PR-5-M03-OZ ..... K-8
S3N-PR-5-T51-N ..... K-7
S3N-PR-5-T51-PD ..... K-7
S3N-PR-5-T51-PL ..... K-7
S3N-PR-5-T53-OZ ..... K-8
S3N-PR-5-W03-OZ ..... K-8
S45/604/B6/02A ..... J-29
S45/604/B6/11A ..... J-29
S45/604/B6/22A ..... J-29
S48/704/B6/02A ..... J-29
S48/704/B6/11A ..... J-29
S48/704/B6/22A ..... J-29
S5-4SV ..... L-19
S5-5V ..... L-19
S5-6SV ..... L-19
S940700075 ..... K-7
SBN132 ..... B-13
SBN163 ..... B-13
SBN190 ..... B-13
SBN199 ..... B-13
SBN232 ..... B-13
SBN263 ..... B-13
SBN290 ..... B-13
SBN299 ..... B-13
SBN332 ..... B-13
SBN363 ..... B-13
SBN390 ..... B-13
SBN399 ..... B-13
SBN432 ..... B-13
SBN463 ..... B-13
SBN490 ..... B-13
SBN499 ..... B-13
SBQ1000 ..... L-38
SBQ1005 ..... L-38
SBQ1015 ..... L-38
SBQ1020 ..... L-38
SBQ1025 ..... L-38
SBR1000 ..... L-38
SBR1005 ..... L-38
SBR1010 ..... L-38
SBR1020 ..... L-38
SBR1025 ..... L-38
SC120A111230A ..... J-35
SC120A211230A ..... J-35
SC5X ..... M-4
SCI0100600 ..... J-15
SCI0251700 ..... J-15
SCI0501200 ..... J-15
SCT-16-6X6 ..... C-23
SCT-20-8X8 ..... C-23
SCT-25-10X10 ..... C-23
SCT-25-8X10 ..... C-23
SDI0501700 ..... J-15
SDI0501710 ..... J-15
SE1035 ..... H-17
SE1040 ..... H-17
SE1040T ..... H-17
SE1050 ..... H-17
SE1050T ..... H-17
SE1065 ..... H-17
SE1065T ..... H-17
SE1070 ..... H-17
SE1070T ..... H-17
SE1080 ..... H-17
SE1080T ..... H-17
SE1090 ..... H-17
SE1090T ..... H-17
SE1100 ..... H-17
SE1100T ..... H-17
SE1201 ..... H-17
SE1201T ..... H-17
SF1110A ..... J-35
SF1400A ..... J-35
SF1525A ..... J-35
SF1K400A ..... J-35
SF1K525A ..... J-35
SF263 ..... B-13
SF4-2/5A ..... E-17
SF4-2/7DA ..... E-18
SF4-2000DA ..... E-18
SF4-2001A ..... E-17
SF4-2001DA ..... E-18
SF4-2005A ..... E-17
SF4-2005DA ..... E-18
SF4-2007DV ..... E-18
SF4-2010A ..... E-17
SF4-2010DA ..... E-18
SF4-2015A ..... E-17
SF4-2015DA ..... E-18
SF4-2015V ..... E-17
SF4-2022Z ..... E-18
SF4-2030A ..... E-17
SF4-2030DA ..... E-18
SF4-2030V ..... E-17
SF4-2038Z ..... E-18
SF4-203DV ..... E-18
SF4-2050V ..... E-17
SF4-2060V ..... E-17
SF4-215DV ..... E-18
SF4-2420DA ..... E-18
SF4-250DV ..... E-18
SF4-2HA25 ..... E-18
SF4-2HA45 ..... E-18
SF463 ..... B-13
SF7-3CM5A ..... E-17
SF7-3HA25 ..... E-18
SF7-3HA45 ..... E-18
SF7-3MD5A ..... E-17
SF7-8/5A ..... E-17
SF7-8/7DA ..... E-18
SF7-8000DA ..... E-18
SF7-8001A ..... E-17
SF7-8001DA ..... E-18
SF7-8005A ..... E-17
SF7-8005DA ..... E-18
SF7-8007DV ..... E-18
SF7-8010A ..... E-17
SF7-8010DA ..... E-18
SF7-8015A ..... E-17
SF7-8015DA ..... E-18
SF7-8015V ..... E-17
SF7-8022Z ..... E-18
SF7-8030A ..... E-17
SF7-8030DA ..... E-18
SF7-8030V ..... E-17
SF7-8038Z ..... E-18
SF7-803DV ..... E-18
SF7-8050V ..... E-17
SF7-8060V ..... E-17
SF7-815DV ..... E-18
SF7-8420DA ..... E-18
SF7-850DV ..... E-18
SF808A ..... H-20
SF808B ..... H-20
SF809A ..... H-20
SF809B ..... H-20
SF812A ..... H-20
SF812B ..... H-20
SF817A ..... H-20
SF817B ..... H-20
SF822B ..... H-20
SF825B ..... H-20
SF9-3CM5A ..... E-17
SF9-3HA25 ..... E-18
SF9-3HA45 ..... E-18
SF9-3MD5A ..... E-17
SF9-8/5A ..... E-17
SF9-8/7DA ..... E-18
SF9-8000DA ..... E-18
SF9-8001A ..... E-17
SF9-8001DA ..... E-18
SF9-8005A ..... E-17
SF9-8005DA ..... E-18
SF9-8007DV ..... E-18
SF9-8010A ..... E-17
SF9-8010DA ..... E-18
SF9-8015A ..... E-17
SF9-8015DA ..... E-18
SF9-8015V ..... E-17
SF9-8022Z ..... E-18
SF9-8030A ..... E-17
SF9-8030DA ..... E-18
SF9-8030V ..... E-17
SF9-8038Z ..... E-18
SF9-803DV ..... E-18
SF9-8050V ..... E-17
SF9-8060V ..... E-17
SF9-815DV ..... E-18
SF9-8420DA ..... E-18
SF9-850DV ..... E-18
SFH125 ..... B-13
SFH225 ..... B-13
SFN-4K1-DCU ..... E-19
SFN-4K1-F ..... E-19
SFN-4K1-I ..... E-19
SFN-4K1-U ..... E-19
SFN-4K1DC-I ..... E-19
SFN-4K3-3I ..... E-19
SFN-4K3-3U ..... E-19
SFN-4K3-UIF ..... E-19
SFN-5K1-DCU ..... E-19
SFN-5K1-F ..... E-19
SFN-5K1-I ..... E-19
SFN-5K1-U ..... E-19
SFN-5K1DC-I ..... E-19
SFN-7K1-DCU ..... E-19
SFN-7K1-F ..... E-19
SFN-7K1-I ..... E-19
SFN-7K1-U ..... E-19
SFN-7K1DC-I ..... E-19
SFN-7K3-3I ..... E-19
SFN-7K3-3U ..... E-19
SFN-7K3-UIF ..... E-19

SFN-9K1-DCU....E-19
SFN-9K1-F....E-19
SFN-9K1-I....E-19
SFN-9K1-U....E-19
SFN-9K1DC-I....E-19
SFN-9K3-3I....E-19
SFN-9K3-3U....E-19
SFN-9K3-UIF....E-19
SFR-APF4-100/0.4B....F-13
SFR-APF4-150/0.4B....F-13
SFR-APF4-30/0.4B....F-13
SFR-APF4-50/0.4B....F-13
SFR-APF4-75/0.4B....F-13
SFR-SVG4-100/0.4B....F-14
SFR-SVG4-30/0.4B....F-14
SFR-SVG4-50/0.4B....F-14
SFR-SVG4-75/0.4B....F-14
SFT125....B-13
SFT140....B-13
SFT240....B-13
SFT440....B-13
SGB8850200....J-16
SGB8890200....J-16
SGT8658500....J-16
SGT8670500....J-16
SGT8678500....J-16
SGT8690500....J-16
SGT8698500....J-16
SGT8850200....J-16
SGT9834300....J-16
SGT9854300....J-16
SGT9874300....J-16
SGTA4650....J-16
SGTA4654....J-16
SJ-100/J505B....K-27
SJ-100/J505B3....K-27
SJ-100/J510B....K-27
SJ-100/J510B3....K-27
SJ-100/J520B....K-27
SJ-100/J520B3....K-27
SJ-100/K505B....K-27
SJ-100/K505B3....K-27
SJ-100/K510B....K-27
SJ-100/K510B3....K-27
SJ-100/K520B....K-27
SJ-100/K520B3....K-27
SJ-105/J510B....K-27
SJ-105/J510B3....K-27
SJ-105/J520B....K-27
SJ-105/J520B3....K-27
SJ-105/K510B....K-27
SJ-105/K510B3....K-27
SJ-105/K520B....K-27
SJ-105/K520B3....K-27
SJ-106/JM8B....K-27
SJ-106/JM8B3....K-27
SJ-106/KM8B....K-27
SJ-106/KM8B3....K-27
SJ-107/J5BB....K-27
SJ-107/J5BB3....K-27
SJ-107/K5BB....K-27
SJ-107/K5BB3....K-27
SJ-301/P505P....K-27
SJ-301/P505P3....K-27
SJ-301/P510T....K-27
SJ-301/P510T3....K-27
SJ-301/P520T....K-27
SJ-301/P520T3....K-27
SJ-302/P510T....K-27
SJ-302/P510T3....K-27
SJ-302/P520T....K-27
SJ-302/P520T3....K-27
SJ-305/P520T....K-27
SJ-305/P520T3....K-27
SM1P0016....A-9
SM1P0025....A-9
SM1P0040....A-9
SM1P0063....A-9
SM1P0100....A-9
SM1P0160....A-9
SM1P0250....A-9
SM1P0400....A-9
SM1P0650....A-9
SM1P1000....A-9
SM1P1400....A-9
SM1P1800....A-9
SM1P2500....A-9
SM1P3200....A-9
SM1P4000....A-9
SM1R0016....A-9
SM1R0025....A-9
SM1R0040....A-9
SM1R0063....A-9
SM1R0100....A-9
SM1R0160....A-9
SM1R0250....A-9
SM1R0400....A-9
SM1R0650....A-9
SM1R1000....A-9
SM1R1400....A-9
SM1R1800....A-9
SM1R2500....A-9
SM1R3200....A-9
SM1R4000....A-9
SM1X1111....A-10
SM1X1120....A-10
SM1X1211....A-10
SM1X1220....A-10
SM1X1311....A-10
SM1X14230....A-10
SM1X14400....A-10
SM1X16024....A-10
SM1X16110....A-10
SM1X16230....A-10
SM1X16400....A-10
SM1X1740P....A-10
SM1X1745P....A-10
SM1X18200R....A-10
SM1X18S....A-10
SM1X3040P....A-10
SM1X3040R....A-10
SM1X3141P....A-10
SM1X3141R....A-10
SM1X3150R....A-13
SM1X3241P....A-10
SM1X3241R....A-10
SM1Z1701P....A-10
SM1Z1705P....A-10
SM1Z1715R....A-10
SM20....L-37
SM25....L-37
SM2R5000....A-9
SM2R6300....A-9
SM2X1111....A-10
SM2X1120....A-10
SM2X1211....A-10
SM2X1220....A-10
SM2X1311....A-10
SM2X14230....A-10
SM2X14400....A-10
SM2X16024....A-10
SM2X16110....A-10
SM2X16230....A-10
SM2X16400....A-10
SM2X18200R....A-10
SM30....L-37
SM35....L-37
SM3R7500....A-9
SM3R9000....A-9
SM3R9900....A-9
SM40....L-37
SM45....L-37
SM51....L-37
SM60....L-37
SM76....L-37
SMB8650510....J-16
SMB8670910....J-16
SMT8620520....J-16
SMT8628520....J-16
SMX9030....A-10
SMX9032....A-10
SMX9033....A-10
SMX9034....A-10
SMX9035....A-10
SMX9042....A-10
SMX9043....A-10
SMX9044....A-10
SMX9045....A-10
SN1....J-19
SNL1....J-26
SO465020....J-15
SO465320....J-15
SO465420....J-15
SO467420....J-15
SO468020....J-15
SO468420....J-15
SO469020....J-15
SO469420....J-15
SO765090....J-13
SO767090....J-13
SO768090....J-13
SO842074....J-13
SO842974....J-13
SO845070....J-13
SO865070....J-13
SO865970....J-13
SO867070....J-13
SO867970....J-13
SO868070....J-13
SO868970....J-13
SO869070....J-13
SO869970....J-13
SO941460....J-13
SO942460....J-13
SO943460....J-13
SO945460....J-13
SO965460....J-13
SO967460....J-13
SOB965660....J-13
SOM020100....J-15
SOM040200....J-15
SP1....L-21
SP2....L-21
SP5....L-21
SPA801....B-16
SPB040D....B-16
SPB040N....B-16
SPB140D....B-16
SPB240D....B-16
SPB240R....B-16
SPB440D....B-16
SPB440R....B-16
SPN802R....B-16
SPR-024-B....L-31
SPR-034-B....L-31
SPR-060-B....L-31
SPR-071-B....L-31
SPR-100-B....L-31
SPR-120-B....L-31
SPR-140-B....L-31
SPR-158-B....L-31
SPR-178-B....L-31
SPR-215-B....L-31
SPR-245-B....L-31
SPR-306-B....L-31
SSM1089-04....L-16
SSM1089-04/PS....L-16
SSM1089-16....L-16
SSM1089-16/PS....L-16
SSM12-6.5....L-25
SSM16-08....L-25
SSM1989-04....L-16
SSM1989-04/PS....L-16
SSM1989-16....L-16
SSM1989-16/PS....L-16
SSM20-12....L-25
SSM25-16....L-25
SSM32-22....L-25
SST4/15-04....L-16
SST4/25-04....L-16
SST4/35-04....L-16
SST4/45-04....L-16
SST4/55-04....L-16
SST7/25-04....L-16
SST7/45-04....L-16
SST7/60-04....L-16
SST7/80-04....L-16
SSTP4/20-16....L-16
SSTP4/30-16....L-16
SSTP4/40-16....L-16
SSTP4/50-16....L-16
SSTP7/30-16....L-16
SSTP7/40-16....L-16
SSTP7/60-16....L-16
SSTP7/80-16....L-16
ST 01....K-11
ST 02....K-11
ST 03....K-11
ST 03U....K-11
ST 101....K-11
ST 102....K-11
ST 103....K-11
ST 104....K-11
ST 18-A....K-11
ST 18-C....K-11
ST 30-A....K-11
ST 30-C....K-11
ST 80....K-11
ST 81....K-11
ST18-S....K-4
ST18-V....K-4
ST300D....K-11
ST303....B-17
ST305....B-17
ST312....B-17
ST314....B-17
ST315....B-17
STQMO....K-11
SU213....B-17
SU214....B-17
SU215....B-17
SU842070....J-14
SU842970....J-14
SU865070....J-14
SU865970....J-14
SU867070....J-14
SU942460....J-14
SU963460....J-14
SU965460....J-14
SU967460....J-14
SUL842070....J-14
SUL842970....J-14
SUL865970....J-14
SUL942460....J-14
SVF112H....H-19
SVF113H....H-19
SVF114H....H-19
SVF115H....H-19
SVF116H....H-19
SVN121....B-17
SVN122....B-17
SVN123....B-17
SVN126....B-17
SVN131....B-17
SVN132....B-17
SVN223....B-17
SVN351....B-17
SVN391....B-17
SVN411....B-17
SY-CP4A-F....I-16
SY-CP4A-M....I-16

T10/10S230A....J-34
T10/10S400A....J-34
T10/180S024AD....J-34
T10/180S230A....J-34
T10/30S230A....J-34
T10/360S230A....J-34
T10/360S400A....J-34
T10/600S230A....J-34
T10/600S400A....J-34
T10/600S525A....J-34
T10/60M230A....J-34
T10/60S230A....J-34
T1IP/30S024AD....J-34
T1IP/30S230A....J-34
T1P/230A....J-34
T1R/180S110A....J-35
T1R/180S230A....J-35
T2D/B10M230A....J-33
T2D/B180M230A....J-33
T2D/B30M230A....J-33
T2D/B60M230A....J-33
T2D10S230A....J-33
T2D180S024AD....J-33
T2D180S230A....J-33
T2D30S230A....J-33
T2D30S400A....J-33
T2D360S024AD....J-33
T2D360S230A....J-33
T2D60S230A....J-33
T2M012AD....J-33
T2M024AD....J-33
T2M048AD....J-33
T2M110A....J-33
T2M230A....J-33
T2M400A....J-33
T3C 315L1-2....A-37
T3C 315L1-2 B5....A-39
T3C 315L1-4....A-37
T3C 315L1-4 B5....A-39
T3C 315L1-6....A-38
T3C 315L1-6 B5....A-40
T3C 315L2-6....A-38
T3C 315L2-6 B5....A-40
T3C 315L3-4....A-37
T3C 315L3-4 B5....A-39
T3C 315M-2....A-37
T3C 315M-2 B5....A-39
T3C 315M-4....A-37
T3C 315M-4 B5....A-39
T3C 315M-6....A-38
T3C 315M-6 B5....A-40
T3C 355L1-4....A-37
T3C 355L1-4 B5....A-39
T3C 355L2-4....A-37
T3C 355L2-4 B5....A-39
T3C 355L3-4....A-37
T3C 355M1-4....A-37
T3C 355M1-4 B5....A-39
T3C 355M1-6....A-38
T3C 355M1-6 B5....A-40
T3C 355M2-4....A-37
T3CR 100L-2....A-37
T3CR 100L-2 B5....A-39
T3CR 100L-6....A-38
T3CR 100L-6 B5....A-40
T3CR 100L1-4....A-37
T3CR 100L1-4 B5....A-39
T3CR 100L2-4....A-37
T3CR 100L2-4 B5....A-39
T3CR 112M-2....A-37
T3CR 112M-2 B5....A-39
T3CR 112M-4....A-37
T3CR 112M-4 B5....A-39
T3CR 112M-6....A-38
T3CR 112M-6 B5....A-40
T3CR 132M1-4....A-37
T3CR 132M1-4 B5....A-39
T3CR 132M1-6....A-38
T3CR 132M1-6 B5....A-40
T3CR 132M2-6....A-38
T3CR 132M2-6 B5....A-40
T3CR 132S-4....A-37
T3CR 132S-4 B5....A-39
T3CR 132S-6....A-38
T3CR 132S-6 B5....A-40
T3CR 132S1-2....A-37
T3CR 132S1-2 B5....A-39
T3CR 132S2-2....A-37
T3CR 132S2-2 B5....A-39
T3CR 160L-2....A-37
T3CR 160L-2 B5....A-39
T3CR 160L-4....A-37
T3CR 160L-4 B5....A-39
T3CR 160L-6....A-38
T3CR 160L-6 B5....A-40
T3CR 160M-4....A-37
T3CR 160M-4 B5....A-39
T3CR 160M-6....A-38
T3CR 160M-6 B5....A-40
T3CR 160M1-2....A-37
T3CR 160M1-2 B5....A-39
T3CR 160M2-2....A-37
T3CR 160M2-2 B5....A-39
T3CR 180L-4....A-37
T3CR 180L-4 B5....A-39
T3CR 180L-6....A-38
T3CR 180L-6 B5....A-40
T3CR 180M-2....A-37
T3CR 180M-2 B5....A-39
T3CR 180M-4....A-37
T3CR 180M-4 B5....A-39
T3CR 200L1-2....A-37
T3CR 200L1-2 B5....A-39
T3CR 200L1-4....A-37
T3CR 200L1-4 B5....A-39
T3CR 200L1-6....A-38
T3CR 200L1-6 B5....A-40
T3CR 200L2-2....A-37
T3CR 200L2-2 B5....A-39
T3CR 200L2-6....A-38
T3CR 200L2-6 B5....A-40
T3CR 225M-2....A-37
T3CR 225M-2 B5....A-39
T3CR 225M-6....A-38
T3CR 225M-6 B5....A-40
T3CR 225M1-4....A-37
T3CR 225M1-4 B5....A-39
T3CR 225S-4....A-37
T3CR 225S-4 B5....A-39
T3CR 250M1-2....A-37
T3CR 250M1-2 B5....A-39
T3CR 250M1-4....A-37
T3CR 250M1-4 B5....A-39
T3CR 250M1-6....A-38
T3CR 250M1-6 B5....A-40
T3CR 250M2-2....A-37
T3CR 250M2-2 B5....A-39
T3CR 250M2-4....A-37
T3CR 250M2-4 B5....A-39
T3CR 250M2-6....A-38
T3CR 250M2-6 B5....A-40
T3CR 280M1-2....A-37
T3CR 280M1-2 B5....A-39
T3CR 280M1-4....A-37
T3CR 280M1-4 B5....A-39
T3CR 280M1-6....A-38
T3CR 280M1-6 B5....A-40
T3CR 280M2-2....A-37
T3CR 280M2-2 B5....A-39
T3CR 280M2-4....A-37
T3CR 280M2-4 B5....A-39
T3CR 280M2-6....A-38
T3CR 280M2-6 B5....A-40
T3CR 801-2....A-37
T3CR 801-2 B5....A-39
T3CR 802-2....A-37
T3CR 802-2 B5....A-39
T3CR 802-4....A-37
T3CR 802-4 B5....A-39
T3CR 90L-2....A-37
T3CR 90L-2 B5....A-39
T3CR 90L-4....A-37
T3CR 90L-4 B5....A-39
T3CR 90L-6....A-38
T3CR 90L-6 B5....A-40
T3CR 90S-2....A-37
T3CR 90S-2 B5....A-39
T3CR 90S-4....A-37
T3CR 90S-4 B5....A-39
T3CR 90S-6....A-38
T3CR 90S-6 B5....A-40
T3M024AD....J-33
T3M110A....J-33
T3M230A....J-33
TAP-CN03....C-17
TAP-TR01....C-17
TB006....I-16
TC-CA-H/S....K-27
TC-IC-H/S....K-27
TC050....M-5
TD-02....K-16
TD-09....K-16
TG 3102-24V....H-23
TG 3200-24V....H-23
THB510....I-16
THC1230A....J-34
TMD....J-17
TMM1....J-17
TMM1NFC....J-17
TMP....J-17
TMPL....J-17
TMS1010....L-41
TMS1015....L-41
TMS1020....L-41
TMS1025....L-41
TMS1035....L-41
TMS1040....L-41
TMS1045....L-41
TMS1050....L-41
TMS1055....L-41
TMS1060....L-41
TMS1065....L-41
TMS1070....L-41
TMS1075....L-41
TMS1080....L-41
TMS1085....L-41
TMS1090....L-41
TMS1100....L-41
TMS1105....L-41
TMS1110....L-41
TMS1115....L-41
TMS1120....L-41
TMS1125....L-41
TMS1130....L-41
TMS1135....L-41
TMS1140....L-41
TMS1145....L-41
TMST....J-17
TMSTA440....J-17
TN120SE....M-5
TN70SE....M-5
TNE180S230A....J-33
TNE30S024AD....J-33
TNE30S110A....J-33
TNE30S230A....J-33
TNE30S400A....J-33
TNE60S024AD....J-33
TNE60S230A....J-33
TNE60S400A....J-33
TOP1000....L-38
TOP1005....L-38
TOP1010....L-38
TOP1025....L-38
TOP1030....L-38
TOP1035....L-38
TOP1040....L-38
TOP1045....L-38
TOP1050....L-38
TOP1055....L-38
TOP1100....L-38
TOP1105....L-38
TOP2000....L-38
TP04G-AL-C....C-14
TP04G-AL2....C-14
TP04G-AS2....C-14
TP04P-16TP1R....C-14
TP04P-22XA1R....C-14
TP04P-32TP1R....C-14
TP08G-BT2....C-14
TP1....J-32
TP19U230B....H-22
TP19U230B54....H-22
TP70P-16TP1R....C-14
TP70P-21EX1R....C-14
TP70P-22XA1R....C-14
TP70P-32TP1R....C-14
TPC150-W1010....C-16
TPC190-W1010....C-16
TPC238-W1010....C-16
TRT-10A230V-NC....H-21
TRT-10A230V-NO....H-21
TS-01....J-26
TS-S M5....L-13
TS35....L-13
TS35/C....L-13
TS35/CF5A....L-13
TS35/F5A....L-13
TS35/F6 INOX....L-13
TS35/SF6....L-13
TSL025025N....L-11
TSL025040N....L-11
TSL025060N....L-11
TSL025080N....L-11
TSL040040N....L-11
TSL040060N....L-11
TSL040060W....L-11
TSL040080N....L-11
TSL040080W....L-11
TSL040100N....L-11
TSL040100W....L-11
TSL060040N....L-11
TSL060060N....L-11
TSL060060W....L-11
TSL060080N....L-11
TSL060080W....L-11
TSL060100N....L-11
TSL060100W....L-11
TSL080040N....L-11
TSL080060N....L-11
TSL080060W....L-11
TSL080080N....L-11
TSL080080W....L-11
TSL080100N....L-11
TSL080100W....L-11
TSL100060N....L-11
TSL100060W....L-11
TSL100080N....L-11
TSL100080W....L-11
TSL100100N....L-11
TSL100100W....L-11
TSM025....L-11

TSM040 ..... L-11
TSM060 ..... L-11
TSM080 ..... L-11
TSM100 ..... L-11
TST20 ..... L-13
TST30 ..... L-13
TST40 ..... L-13
TST50 ..... L-13
TST70 ..... L-13

UB-10-ID16A ..... C-18
UB-10-ID32A ..... C-18
UB-10-IO16C ..... C-18
UB-10-IO24C ..... C-18
UB-10-IO32D ..... C-18
UB-10-OR16A ..... C-18
UB-10-OR16B ..... C-18
UB-10-OT32A ..... C-18
UC-CMC003-01A ..... C-17
UC-CMC005-01A ..... C-17
UC-CMC010-01A ..... C-17
UC-CMC020-01A ..... C-17
UC-CMC030-01A ..... C-17
UC-EMC005-02B ..... C-10
UC-EMC005-02C ..... C-10
UC-EMC010-02B ..... A-28
UC-EMC010-02C ..... C-10
UC-EMC020-02B ..... A-28
UC-EMC020-02C ..... C-10
UC-EMC050-02B ..... A-28
UC-EMC050-02C ..... C-10
UC-ET010-13B ..... C-18
UC-ET010-15B ..... C-18
UC-ET010-24A ..... C-18
UC-ET010-24C ..... C-18
UC-ET020-24B ..... C-18
UC-ET020-24D ..... C-18
UC-ET030-24B ..... C-18
UC-ET030-24D ..... C-18
UC-MS010-02A ..... C-17
UC-MS020-06A ..... C-17
UC-MS030-01A ..... C-17
UC-MS030-03A ..... C-17
UC-MS030-04A ..... C-17
UC-MS030-06A ..... C-17
UC-PRG015-01A ..... C-17
UC-PRG020-12A ..... C-17
UC-PRG030-01A ..... C-17
UC-PRG030-02A ..... C-17
UC-PRG030-10A ..... C-17
UC-PRG030-20A ..... C-17
UC000BB ..... H-12
UC000FU ..... H-11
UC000HTS ..... H-11
UC010H ..... H-6
UC011H ..... H-6
UC020H ..... H-6
UC021H ..... H-6
UC1000BU ..... H-10
UC133X ..... H-9
UC1530MDN ..... H-9
UC1560MDN ..... H-9
UC1580MDN ..... H-9
UC1600FB ..... H-9
UC163X ..... H-9
UC1800F ..... H-10
UC1800FB ..... H-9
UC183X ..... H-9
UC200 ..... H-6
UC200F ..... H-10
UC200FU ..... H-11
UC201 ..... H-6
UC2035AMD ..... H-9
UC205 ..... H-6
UC2060AMD ..... H-9
UC2060MDN ..... H-9
UC2060MP ..... H-11
UC2080AMD ..... H-9
UC2080MDN ..... H-9
UC2080MP ..... H-11
UC221 ..... H-10
UC222 ..... H-10
UC223 ..... H-10
UC224 ..... H-10
UC225 ..... H-10
UC226 ..... H-10
UC231 ..... H-10
UC232 ..... H-10
UC233 ..... H-10
UC233EM ..... H-6
UC233XH ..... H-9
UC234 ..... H-10
UC235 ..... H-10
UC236 ..... H-10
UC239 ..... H-10
UC241 ..... H-10
UC242 ..... H-10
UC243 ..... H-10
UC243EM ..... H-9
UC244 ..... H-10
UC245 ..... H-10
UC246 ..... H-10
UC249 ..... H-10
UC262XHR ..... H-9
UC263XH ..... H-9
UC268 ..... H-11
UC282XHR ..... H-9
UC283XH ..... H-9
UC300BB ..... H-12
UC300F ..... H-10
UC300FU ..... H-11
UC301 ..... H-9
UC350FU ..... H-11
UC400BB ..... H-12
UC400BU ..... H-10
UC400F ..... H-10
UC434P ..... H-6
UC434PN ..... H-9
UC434X ..... H-6
UC434XN ..... H-9
UC463PRN ..... H-9
UC463XRN ..... H-9
UC464P ..... H-6
UC464PN ..... H-9
UC464X ..... H-6
UC464XN ..... H-9
UC483PRN ..... H-9
UC483XRN ..... H-9
UC484PDN ..... H-9
UC484XDN ..... H-9
UC500BB ..... H-12
UC500FU ..... H-11
UC564H ..... H-9
UC566H ..... H-9
UC584H ..... H-9
UC586H ..... H-9
UC600BB ..... H-12
UC600BU ..... H-10
UC600F ..... H-10
UC600FU ..... H-11
UC6020PL ..... H-10
UC6040HW1 ..... H-9
UC6060HW2 ..... H-9
UC666H ..... H-9
UC686HD ..... H-9
UC700BB ..... H-12
UC700FU ..... H-11
UC800BB ..... H-12
UC800BU ..... H-10
UC800FU ..... H-11
UC8020PL ..... H-10
UC8040HW1 ..... H-9
UC8060DHW4 ..... H-9
UC8060FHW4 ..... H-9
UC8060HW2 ..... H-9
UC8110BB ..... H-12
UC815 ..... H-12
UC816 ..... H-12
UC820 ..... H-12
UC8210BB ..... H-12
UC825BB ..... H-12
UC826 ..... H-12
UC827 ..... H-12
UC828 ..... H-12
UC8310BB ..... H-12
UC9125C ..... H-12
UC9125T ..... H-12
UC915 ..... H-6
UC9160C ..... H-12
UC918125AL ..... H-12
UC918160AL ..... H-12
UC91880AL ..... H-12
UC9800C ..... H-12
UC9800T ..... H-12
UC9825S ..... H-12
UC9840S ..... H-12
UC990 ..... H-11
UC991 ..... H-11
UK1D/G6-0ESY ..... K-12
UK1D/G7-0ESY ..... K-12
UK1F/G6-0ESY ..... K-12
UK1F/G7-0ESY ..... K-12
UK6A/H1-0EUL ..... K-12
UK6A/H2-0EUL ..... K-12
UK6A/HP-0EUL ..... K-12
UK6C/H1-0EUL ..... K-12
UK6C/H2-0EUL ..... K-12
UK6C/HP-0EUL ..... K-12
UK6D/H1-0EUL ..... K-12
UK6D/H2-0EUL ..... K-12
UK6D/HP-0EUL ..... K-12
UQ1A/G6-0E ..... K-12
UQ1A/G7-0E ..... K-12
UQ1C/G6-0E ..... K-12
UQ1C/G7-0E ..... K-12
UQ1D/G6-0E ..... K-12
UQ1D/G7-0E ..... K-12
UT-12SE-A1 ..... M-14
UT-14SS2-A ..... M-14
UT-AS332-C ..... M-14
UT1B/G6-0ESY ..... K-12
UT1B/G7-0ESY ..... K-12
UT2F/G6-0ESY ..... K-12
UT2F/G7-0ESY ..... K-12
UT5L/G6-1ESY ..... K-12
UT5L/G7-1ESY ..... K-12
UZ01V1 ..... H-11
UZ25V1 ..... H-11

V-Check 2MR-25 ..... B-66
V-Check 2MR-40 ..... B-66
V-Check 4MR-16 ..... B-66
V-Check 4MR-63 ..... B-66
V-Check 4RC ..... B-66
V1C230A400MV ..... J-35
V1E230A ..... J-35
V24-1704D ..... E-22
V24-1804F ..... E-22
V24-1904F ..... E-22
V24-2004H ..... E-22
V24-2104H ..... E-22
V24-2204F ..... E-22
V34-2404H ..... E-22
V34-2504J ..... E-22
V3E110A ..... J-35
V3E400A ..... J-35
V3E525A ..... J-35
V3EN400A ..... J-35
V41-2704J ..... E-22
V41-2804J ..... E-22
V56-2704F ..... E-22
V56-2904J ..... E-22
V56-3004J ..... E-22
V56-3204J ..... E-22
V56-3304J ..... E-22
VBR1/D0-3A ..... K-4
VE103L ..... H-4
VE106L ..... H-4
VE110L ..... H-4
VE112L ..... H-4
VE112SN ..... H-4
VE118L ..... H-4
VE212L ..... H-4
VE212SN ..... H-4
VE218L ..... H-4
VE312SN ..... H-4
VE318L ..... H-4
VF108TJ ..... H-3
VF112TJ ..... H-3
VF118TJ ..... H-3
VF212TJ ..... H-3
VF218TJ ..... H-3
VF318TJ ..... H-3
VFD004DD21S ..... A-31
VFD007C4EA-21 ..... A-27
VFD011VP43BFTAA ..... A-28
VFD013VP43BFTAA ..... A-28
VFD015C4EA-21 ..... A-27
VFD015CP4EB-21 ..... A-29
VFD015FP4EA-52 ..... A-29
VFD018VP43BFTAA ..... A-28
VFD022C4EA-21 ..... A-27
VFD022CP4EB-21 ..... A-29
VFD022FP4EA-52 ..... A-29
VFD025VP43BFTAA ..... A-28
VFD032VP43BFTAA ..... A-28
VFD037C53A-21 ..... A-27
VFD037ED21S ..... A-31
VFD038VP43BFTAA ..... A-28
VFD040C4EA-21 ..... A-27
VFD040CP4EA-21 ..... A-29
VFD040FP4EA-52 ..... A-29
VFD045VP43BFTCA ..... A-28
VFD055C4EA-21 ..... A-27
VFD055C53A-21 ..... A-27
VFD055CP4EB-21 ..... A-29
VFD055ED43S ..... A-31
VFD055FP4EA-52 ..... A-29
VFD062VP43BFTCA ..... A-28
VFD073VP43BFTCA ..... A-28
VFD075C4EA-21 ..... A-27
VFD075C53A-21 ..... A-27
VFD075CP4EB-21 ..... A-29
VFD075ED43S ..... A-31
VFD075FP4EA-52 ..... A-29
VFD090VP43BFTCA ..... A-28
VFD1100C43A-00 ..... A-27
VFD1100CP43A-21 ..... A-29
VFD110C4EA-21 ..... A-27
VFD110C53A-21 ..... A-27
VFD110CP4EB-21 ..... A-29
VFD110ED43S ..... A-31
VFD110FP4EA-52 ..... A-29
VFD110VP43BFTCA ..... A-28
VFD11AME21ANN ..... A-25
VFD11AMS21ANS ..... A-25
VFD11AMS21MNS ..... A-26
VFD12AMS53ANS ..... A-26
VFD1320C43A-00 ..... A-27
VFD1320C63B-00 ..... A-27
VFD1320CP43B-21 ..... A-29
VFD13AME43ANN ..... A-25
VFD13AMS43ANS ..... A-25
VFD13AMS43MNS ..... A-26
VFD150C4EA-21 ..... A-27
VFD150C53A-21 ..... A-27
VFD150CP4EB-21 ..... A-29
VFD150ED43S ..... A-31
VFD150FP4EA-52 ..... A-29
VFD150VP43BFTCA ..... A-28
VFD1600C43A-00 ..... A-27
VFD1600C63B-00 ..... A-27
VFD1600CP43A-21 ..... A-29
VFD17AME43ANN ..... A-25
VFD17AMS43ANS ..... A-25
VFD17AMS43MNS ..... A-26
VFD180VP43BFTCA ..... A-28
VFD1850C43A-00 ..... A-27
VFD1850CP43B-00 ..... A-29
VFD185C4EA-21 ..... A-27
VFD185CP4EB-21 ..... A-29
VFD185ED43S ..... A-31
VFD185FP4EA-52 ..... A-29
VFD1A5ME43ANN ..... A-25
VFD1A5MS43ANS ..... A-25
VFD1A5MS43MNS ..... A-26
VFD1A6ME21ANN ..... A-25
VFD1A6MS21ANS ..... A-25
VFD1A7MS53ANS ..... A-26
VFD1K1VP43SHTCA ..... A-28
VFD1K2VP43SHTCA ..... A-28
VFD2000C43A-00 ..... A-27
VFD2000C63B-00 ..... A-27
VFD2200C43A-00 ..... A-27
VFD2200CP43A-00 ..... A-29
VFD220C4EA-21 ..... A-27
VFD220CP4EA-21 ..... A-29
VFD220ED43S ..... A-31
VFD220FP4EA-52 ..... A-29
VFD220VP43BFTCA ..... A-28
VFD2500C43A-00 ..... A-27
VFD2500C63B-00 ..... A-27
VFD25AMS43ANS ..... A-25
VFD260VP43BFTCA ..... A-28
VFD2800C43A-00 ..... A-27
VFD2800CP43A-00 ..... A-29
VFD2A7ME43ANN ..... A-25
VFD2A7MS43ANS ..... A-25
VFD2A7MS43MNS ..... A-26
VFD2A8ME21ANN ..... A-25
VFD2A8MS21ANS ..... A-25
VFD2A8MS21MNS ..... A-26
VFD300C4EA-21 ..... A-27
VFD300C63B-21 ..... A-27
VFD300CP4EB-21 ..... A-29
VFD300ED43S ..... A-31
VFD300FP4EA-52 ..... A-29
VFD310VP43BFTCA ..... A-28
VFD3150C43A-00 ..... A-27
VFD3150C63B-00 ..... A-27
VFD3150CP43A-00 ..... A-29
VFD32AMS43ANS ..... A-25
VFD3550C43A-00 ..... A-27
VFD3550CP43A-00 ..... A-29
VFD370C43S-00 ..... A-27
VFD370C63B-21 ..... A-27
VFD370CP4EB-21 ..... A-29
VFD370ED43S ..... A-31
VFD370FP4EA-52 ..... A-29
VFD370VP43BFTCA ..... A-28
VFD38AMS43ANS ..... A-25
VFD395VP43BFTCA ..... A-28
VFD3A0MS53ANS ..... A-26
VFD3A0VP43BFTAA ..... A-28
VFD4000C43A-00 ..... A-27
VFD4000CP43A-00 ..... A-29
VFD4500C43A-00 ..... A-27
VFD450C43S-00 ..... A-27
VFD450C63B-00 ..... A-27
VFD450CP43S-21 ..... A-29
VFD450ED43S ..... A-31
VFD450FP4EA-52 ..... A-29
VFD45AMS43ANS ..... A-25
VFD460VP43BFTCA ..... A-28
VFD485VP43BFTCA ..... A-28
VFD4A2ME43ANN ..... A-25
VFD4A2MS43ANS ..... A-25
VFD4A2MS43MNS ..... A-26
VFD4A2MS53ANS ..... A-26
VFD4A2VP43BFTAA ..... A-28
VFD4A8ME21ANN ..... A-25
VFD4A8MS21ANS ..... A-25
VFD4A8MS21MNS ..... A-26
VFD5000C43A-00 ..... A-27
VFD5000CP43A-00 ..... A-29
VFD530VP43SHTCA ..... A-28
VFD550C43A-00 ..... A-27
VFD550C63B-00 ..... A-27
VFD550CP43S-21 ..... A-29
VFD550FP4EA-52 ..... A-29
VFD5600C43A-00 ..... A-27
VFD5A5ME43ANN ..... A-25
VFD5A5MS43ANS ..... A-25
VFD5A5MS43MNS ..... A-26
VFD5A6VP43BFTAA ..... A-28
VFD616VP43SHTCA ..... A-28
VFD683VP43SHTCA ..... A-28
VFD6A6MS53ANS ..... A-26
VFD750C43A-00 ..... A-27
VFD750C63B-00 ..... A-27
VFD750CP43B-21 ..... A-29
VFD750FP4EA-52 ..... A-29
VFD770VP43SHTCA ..... A-28
VFD7A2VP43BFTAA ..... A-28
VFD7A5ME21ANN ..... A-25
VFD7A5MS21ANS ..... A-25
VFD7A5MS21MNS ..... A-26
VFD866VP43SHTCA ..... A-28
VFD900C43A-00 ..... A-27
VFD900C63B-00 ..... A-27
VFD900CP43A-21 ..... A-29
VFD900FP4EA-52 ..... A-29
VFD930VP43SHTCA ..... A-28
VFD9A0ME43ANN ..... A-25
VFD9A0MS43ANS ..... A-25
VFD9A0MS43MNS ..... A-26
VFD9A9MS53ANS ..... A-26
VFDB4030 ..... A-36
VFDB4045 ..... A-31
VFDB4110 ..... A-36
VFDB4160 ..... A-36
VFDB4185 ..... A-36
VFDB5055 ..... A-36
VFDB6055 ..... A-36
VFDB6110 ..... A-36
VFDB6160 ..... A-36
VFDB6200 ..... A-36
VK2/A0-1B ..... K-2
VK2/A0-2B ..... K-2
VK2/C0-1B ..... K-2
VK2/C0-2B ..... K-2
VM2/A0-1B ..... K-2
VM2/A0-2B ..... K-2
VM2/C0-1B ..... K-2
VM2/C0-2B ..... K-2
VS104TJ ..... H-3
VS108TJ ..... H-3
VS112TJ ..... H-3
VS118TJ ..... H-3
VS212TJ ..... H-3
VS218TJ ..... H-3
VS318TJ ..... H-3
VT2/A0-1B ..... K-3
VT2/A0-2B ..... K-3
VT2/C0-1B ..... K-3
VT2/C0-2B ..... K-3
VTC125 ..... M-8
VTS-001Kx ..... G-6
VTS-005Kx ..... G-6
VTS-010Kx ..... G-6
VTS-025Kx ..... G-6
VTS-2003RD ..... G-6
VTS-200DRTCANS ..... G-6
VTS-200DRULTCANS ..... G-6
VTS-200VIC01 ..... G-6
VU12NE ..... H-3
VU24NE ..... H-3
VU36NE ..... H-3
VU48NE ..... H-3
VZ522 ..... H-4
VZ696N ..... H-3
VZ699N ..... H-3
VZ786N ..... H-3
VZ787N ..... H-3
VZ794N ..... H-3

WA55230A ..... J-35
WAB-060-005-K-P1 ..... C-22
WAB-060-007-K-P1 ..... C-22
WAB-060-010-K-P1 ..... C-22
WAB-090-003-K-P1 ..... C-22
WAB-090-007-K-P1 ..... C-22
WAB-090-010-K-P1 ..... C-22
WAB-090-020-K-P1 ..... C-22
WAB-090-040-K-P1 ..... C-22
WAB-115-003-K-P1 ..... C-22
WAB-115-010-K-P1 ..... C-22
WAB-142-003-K-P1 ..... C-22
WAB-180-003-K-P1 ..... C-22
WAB115-DZ-95-115-M8 . C-22
WCTM16-AD13 ..... L-27
WCTM20-AD15.8 ..... L-27
WCTM20-AD21.2 ..... L-27
WCTM25-AD25 ..... L-27
WCTM32-AD34.5 ..... L-27
WCTM40-AD42.5 ..... L-27
WCTM50-AD54.5 ..... L-27
WCTM63-AD54.5 ..... L-27
WDH-31-531-100 ..... A-16
WDH-31-531-25 ..... A-16
WDH-31-531-5 ..... A-16
WDH-31-533-100 ..... A-16
WDH-31-533-25 ..... A-16
WDH-31-533-5 ..... A-16
WDH-31-53X ..... A-16
WDH-31-53XC ..... A-16
WE40 ..... D-13
WF108110 ..... J-13
WF112100 ..... J-14
WF115100 ..... J-13
WF151200 ..... J-13
WF311100 ..... J-14
WLCM20S-11B ..... L-26
WLCM20S-7B ..... L-26
WLCM25-16B ..... L-26
WLCM25-18B ..... L-26
WMS03804 ..... F-11
WMS05004 ..... F-11
WMS07504 ..... F-11
WMS10004 ..... F-11
WMS12504 ..... F-11
WMS15004 ..... F-11
WP-01 ..... D-37
WP-02 ..... D-37

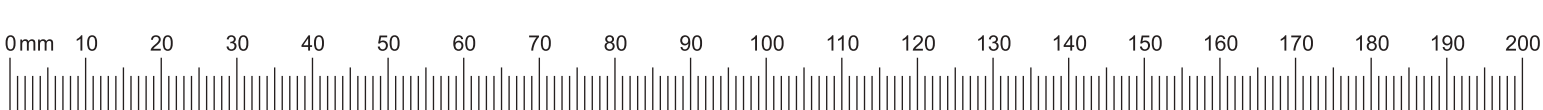
XTI15163 ..... J-29
XTI2045 ..... J-29
XTI2048 ..... J-29
XTI2049 ..... J-29

YDC100-27.6 ..... B-72
YDC180-27.6 ..... B-72
YDC40-13.8 ..... B-72
YDC40-27.6 ..... B-72
YDC60-27.6 ..... B-72
YDD-120-12A ..... B-72
YDD-120-12B ..... B-72
YDD-120-12C ..... B-72
YDD-120-24A ..... B-72
YDD-120-24B ..... B-72
YDD-120-24C ..... B-72
YS-C005 ..... I-16
YSD100L-2404000 ..... B-71
YSD100L-4802000 ..... B-71
YSD100S-1207100 ..... B-71
YSD100S-2404170 ..... B-71
YSD150S-24 ..... B-71
YSD15S-0502400 ..... B-71
YSD15S-1201250 ..... B-71
YSD15S-2400630 ..... B-71
YSD20L-0503000 ..... B-71
YSD20L-1201670 ..... B-71
YSD20L-2401000 ..... B-71
YSD30S-1202000 ..... B-71
YSD30S-2401500 ..... B-71
YSD60L-05006000 ..... B-71
YSD60L-12005000 ..... B-71
YSD60L-24001700 ..... B-71
YSD60L-24002500 ..... B-71
YSD60L-48001250 ..... B-71
YSD60S-1204500 ..... B-71
YSD60S-2402500 ..... B-71
YSDU40-24 ..... B-72
YSDW120-24 ..... B-71
YSDW120-48 ..... B-71
YSDW240-24 ..... B-71
YSDW60-12 ..... B-71
YSDW60-24 ..... B-71

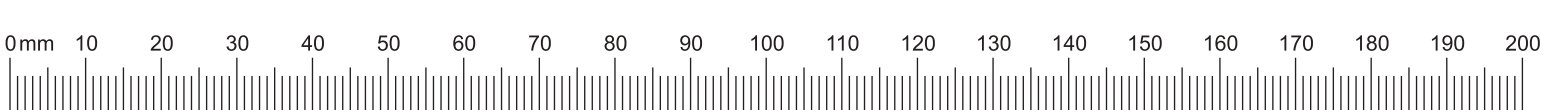
Z1.299.9753.0 ..... L-2
Z5 ..... K-34
Z5.522.8553.0 ..... L-2
Z5.523.5753.0 ..... L-2
Z5.523.9353.0 ..... L-2
Z5.523.9453.0 ..... L-2
Z5.567.5653.0 ..... I-11
Z52 ..... K-34
Z7.261.1227.0 ..... L-1
Z7.261.1327.0 ..... L-1
Z7.261.1427.0 ..... L-1
Z7.261.1527.0 ..... L-1
Z7.261.2027.0 ..... L-1
Z7.280.0027.0 ..... L-4
Z7.280.6227.0 ..... L-1
Z7.280.6327.0 ..... L-1
Z7.280.6427.0 ..... L-1
Z7.280.6527.0 ..... L-1
Z7.280.7027.0 ..... L-1
Z7.280.8027.0 ..... L-1
Z7.281.0027.0 ..... L-4
Z7.282.0027.0 ..... L-4
Z7.282.5227.0 ..... L-1
Z7.282.5327.0 ..... L-1
Z7.282.5427.0 ..... L-1
Z7.282.5527.0 ..... L-1
Z7.283.6027.0 ..... L-4
Z7.283.8227.0 ..... L-1
Z7.284.2027.0 ..... L-4
Z7.284.7027.0 ..... L-1
Z7.284.7127.0 ..... L-1
Z7.284.7227.0 ..... L-1
Z7.284.7327.0 ..... L-1
Z7.285.2027.0 ..... L-4
Z7.419.6128.0 ..... I-15
Z7.419.6228.0 ..... I-15
Z7.428.1153.0 ..... I-15
Z7.428.1253.0 ..... I-15
Z7.428.1353.0 ..... I-15
Z7.428.1453.0 ..... I-15
Z7.428.5553.0 ..... I-15
Z7.428.5653.0 ..... I-15
Z7.428.5753.0 ..... I-15
ZJP-8 ..... K-16
ZJP-9 ..... K-16


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# Standard terms and conditions

1. Representations:
1.1. The Purchaser acknowledges that it does not rely on any representations made by THE COMPANY, in regard to the goods or any of its qualities, leading up to the conclusion of this Agreement, other than those contained in this Agreement. All specifications, price lists, performance figures, advertisements, brochures and other technical data furnished by THE COMPANY in respect of the goods (or ancillary services) orally or in writing will not form part of the Agreement in any way unless agreed to in writing by THE COMPANY.
1.2. The Purchaser agrees that neither THE COMPANY nor any of its employees will be liable for any negligent or innocent misrepresentations made to the Purchaser.
1.3. It is the sole responsibility of the Purchaser to determine that the goods (or ancillary services) ordered are suitable for the purposes of intended use.
2. Prices and Rates:
2.1. Prices are exclusive of VAT.
2.2. The prices are based on the cost to THE COMPANY of material, labour, transport, insurance and the rates of exchange ruling at the date of the sale. In the event of there being any increase or additional cost arising due to factors beyond the control of THE COMPANY, which affects any such costs prior to delivery, the prices will be subject to variation proportionally and without prior notice, at the discretion of THE COMPANY. All prices quoted do not include applicable value added taxes or duties unless where specially referred to. Additionally, no local taxes, local levies or other charges are included in the prices unless specifically indicated on the quote as a separate line item or as specifically stated to be included in the price on the proposal document, as applicable.
2.3. The Purchaser agrees to the standard rates of THE COMPANY for any goods, or ancillary services rendered in relation to the goods, which rates may be obtained on request by the Purchaser to THE COMPANY.
3. Quotations:
3.1. All quotations will remain valid for a period of 30 days from the date of the quotation, unless otherwise specified in writing by THE COMPANY, or until the date of issue of a new price list, (which price list will be furnished to the Purchaser by THE COMPANY), whichever occurs first.
3.2. All quotations are subject to the availability of the goods or ancillary services and subject to correction of good faith errors by THE COMPANY and the prices quoted are subject to any increases in the cost price, including currency fluctuations, as contemplated in clause 2.2 of this Part B, before acceptance of the order.
4. Acceptance:
4.1. The Purchaser hereby confirms that -
4.1.1. the goods or ancillary services on any Tax Invoice issued by THE COMPANY duly represent the goods or ancillary services ordered by the Purchaser at the prices agreed to by the Purchaser; and
4.1.2. where delivery / performance has already taken place, that the goods or ancillary services were inspected and that the Purchaser is satisfied that these conform in all respects to the quality and quantity ordered and are free from any defects.
4.2. Failure on the part of the Purchaser to object to any item appearing on THE COMPANY'S statement of account within 14 days of date of dispatch of such statement, shall deem the account to be in order.
5. Delivery/Performance and Insurance:
5.1. THE COMPANY shall be entitled in its sole discretion to split the delivery / performance of the goods or ancillary services ordered in the quantities and on the dates it decides.
5.2. THE COMPANY shall be entitled to invoice each delivery / performance actually made separately.
5.3. Any delivery note or waybill (copy or original) signed by the Purchaser or a third party engaged to transport the goods and held by THE COMPANY shall be proof that valid delivery was made to the Purchaser.
5.4. The risk of damage to, destruction or theft of goods shall pass to the Purchaser upon delivery of the goods, and the Purchaser undertakes to comprehensively insure the goods until paid for in full.
5.5. Delivery and performance times quoted are merely estimates and are not binding on THE COMPANY.
5.6. THE COMPANY shall not be responsible for freight or courier or any other delivery charges, and the Purchaser is required to appoint its own delivery agent at its own cost. Goods to be dispatched to the Purchaser by rail or other carriers shall be at the Purchaser's risk from the time delivery is made by THE COMPANY to the carrier.
5.7. Claims for shortages or damages must be notified in writing within 48 hours after delivery of goods, failing which no claim will be recognised.
5.8. THE COMPANY will repair or at its discretion replace, at THE COMPANY'S premises, any goods sold which are proved within 12 (twelve) months from delivery, not to conform to specification or to be defective due to faulty workmanship or materials.
6. Indemnity: The Purchaser indemnifies THE COMPANY against, and excludes THE COMPANY's liability for, any claims for shortages or damages that may arise from Part B of such Agreement after the expiry of the 48 hour period contemplated in clause 5.7 of this Part B.
7. Returns:
7.1. All goods taken on a consignment basis by the Purchaser are deemed sold if not returned within 7 days in the original condition, in the original packaging and with all accessories and manuals intact.
7.2. Should THE COMPANY agree to accept return of goods, the Purchaser warrants the good condition thereof and a 15% (fifteen percent) handling charge shall apply.
8. Warranties:
8.1. Goods are sold voetstoots with no warranty against patent or latent defects and all other guarantees including common law guarantees are hereby specifically excluded, save for the 1 (one) year guarantee provided by THE COMPANY, from date of invoice, contemplated in clause 5.8 of this Part B above. Ancillary services carry no guarantee.
8.2. Should the goods supplied by THE COMPANY be used in the Purchaser's process and THE COMPANY is thereafter paid subject to and as a ratio of the Purchaser's production, THE COMPANY makes no warranty that the specific goods supplied by it will yield any particular production by the Purchaser.
9. Exclusion of liability:
Under no circumstances shall THE COMPANY, nor its employees, agents, sub-contractors or other persons for whom THE COMPANY may be liable in law (in whose favour this constitutes a stipulatio alteri), be liable for any indirect, extrinsic, special, penal, punitive, exemplary or consequential loss or damages, including loss of profits, from whatever cause arising, and whether or not the loss or damage was foreseeable, which may be suffered or incurred by the Purchaser, its customers, affiliates, directors, employees, contractors and/or agents, as a result of, or in connection with, the provisions of this Agreement, or for any delictual liability of any nature whatsoever, including arising from any misuse, abuse or neglect of the goods or ancillary services.
10. Payment of invoices and Credit Approved Purchasers:
10.1. The Purchaser agrees that the amount contained in a Tax Invoice issued by THE COMPANY shall be due and payable unconditionally (a) in cash on order; or (b) if the Purchaser is a Credit Approved Purchaser, within 30 days from the end of the month in which a Tax Invoice has been issued by THE COMPANY: or (c) on other terms agreed in writing with the COMPANY.
10.2. The Purchaser agrees to pay the amount on the Tax Invoice into THE COMPANY's designated bank account, or at such other place THE COMPANY may designate in writing.
10.3. The risk of payment rests with the Purchaser.
10.4. If the Purchaser orders goods that are non-stocked goods, which do not appear in THE COMPANY'S most recent catalogue, the Purchaser shall pay 50% (fifty percent) of the selling price on order, as a non-refundable deposit. All non-stocked goods are not returnable.
10.5. The Purchaser has no right to withhold payment for any reason whatsoever and agrees that no extension of payment of any nature shall be extended to the Purchaser and any such extension will not be applicable or enforceable unless agreed to by THE COMPANY, reduced to writing and signed by the Purchaser and a duly authorised representative of THE COMPANY.
10.6. The Purchaser is not entitled to set off any amount due to the Purchaser by THE COMPANY against this debt, and THE COMPANY shall be entitled to allocate any payments received from or credit granted to the Purchaser towards any obligation owed by the Purchaser.
10.7. The Purchaser agrees that the amount due and payable to THE COMPANY may be determined and proven by a certificate issued and signed by any director or manager or member or partner of THE COMPANY, whose authority need not be proven or by any independent auditor nominated by THE COMPANY. Such certificate shall be binding and shall be proof of the indebtedness of the Purchaser, and the Purchaser shall bear the onus of proving that the amount is not due and payable.
10.8. Any printout or computer evidence tendered by the Company shall be admissible evidence in relation to clause 10.7 of this Part B.
10.9. The Purchaser agrees that interest shall be payable at the maximum legal interest rate prescribed in terms of the National Credit Act No 34 of 2005 on any monies past due date to THE COMPANY and that interest shall be calculated daily and compounded monthly from the date of acceptance of the order.
10.10. A Credit Approved Purchaser acknowledges that the extension of credit by THE COMPANY for the purchase of goods represents an Incidental Credit Agreement between the Purchaser and THE COMPANY, as defined by the National Credit Act No. 34 of 2005, unless the Purchaser is a juristic person whose asset value or annual turnover, together with the combined asset value or annual turnover of all related juristic persons, at the time this Agreement becomes an incidental credit agreement, equals or exceeds the threshold value determined by the Minister in terms of section 7(1) of the National Credit Act No. 34 of 2005.
11. Remedies:
11.1. The Purchaser agrees that if an account is not settled in full (a) against order; or (b) within the period agreed in clause 10.1 of this Part B above in the case of a Credit Approved Purchaser; THE COMPANY is: entitled to elect to (i) demand specific performance of the Purchaser's payment obligations, (ii) immediately institute action against the Purchaser at the sole expense of the Purchaser; or (iii) to cancel the Agreement and take possession of any goods delivered to the Purchaser, and (iv) claim damages. These remedies are without prejudice to any other right THE COMPANY may be entitled to in terms of this Agreement or in law. THE COMPANY reserves its right to stop supply immediately on cancellation or on non-payment. A Credit Approved Purchaser will forthwith lose this approval when payment is not made according to these terms and conditions, and all amounts then outstanding shall immediately become due and payable.
11.2. THE COMPANY shall be entitled to withdraw or amend credit facilities at any time within its sole discretion.
11.3. In the event that the Purchaser is a company and the Board of the company resolves that the company voluntarily begins business rescue proceedings, or in the event that the business rescue proceedings are commenced by a third party in terms of the provisions of Chapter 6 of the Companies Act 71 of 2008, this Agreement is deemed to have terminated on the date on which the Purchaser's board passed the said resolution or such proceedings were commenced by a third party.
11.4. The Purchaser irrevocably authorises THE COMPANY to enter its premises to repossess any goods delivered, with a duly authorised court order, and indemnifies THE COMPANY completely against any damage whatsoever relating to the removal of repossessed goods.
11.5. In the event of cancellation of the Agreement by THE COMPANY, it is entitled not to produce the goods in respect of the unmade balance of a contract and to recover any loss sustained thereby from the Purchaser.
11.6. The Purchaser shall be liable to THE COMPANY for all legal expenses on the attorney-and-client scale (not limited by tariff) of an attorney and counsel (whether junior or senior) incurred by THE COMPANY in the event of (a) any default by the Purchaser or (b) any litigation in regard to the validity and enforceability of this Agreement. The Purchaser shall also be liable for any letter of demand, tracing, collection or valuation fees incurred as well as for any costs, including stamp duties, for any form of security that THE COMPANY may demand. The Purchaser acknowledges that these charges have been fully explained to it, and that it shall be liable for payment thereof.
11.7. The Purchaser agrees that no indulgence whatsoever by THE COMPANY will affect the terms of this Agreement or any of the rights of THE COMPANY and such indulgence shall not constitute a waiver by THE COMPANY in respect of any of its rights herein. Under no circumstances will THE COMPANY be estopped from exercising any of its rights in terms of this Agreement.
11.8. Other events which will entitle THE COMPANY to the rights contemplated in this clause 11 include if the Purchaser breaches any term of this Agreement in addition to the default contemplated in clause 11.1 and fails to remedy such default within a period of 7 (seven) days after the delivery of written notice by THE COMPANY to the Purchaser requiring the Purchaser to remedy the default, or if the Purchaser makes any attempt of compromise with its creditors, commits an act of insolvency, is placed into provisional or final liquidation, or under provisional or final sequestration or judgment is recorded against the Purchaser or any of its principals, or the Purchaser causes to be done anything which may prejudice THE COMPANY's rights hereunder or at all (including committing a violation of the South African Prevention and Combating of Corrupt Activities Act, 2004 or the Prevention of Organised Crime Act, 1998), without prejudice to any other right which THE COMPANY may have against the Purchaser. In this sentence, any goods delivered by THE COMPANY to the Purchaser and in respect of which payment has not been made at the date on which one of the aforementioned events occurs shall immediately be returned to and recoverable by THE COMPANY and the Agreement pursuant to which such goods were sold shall be deemed to have been cancelled in respect of the goods so returnable.
11.9. The Purchaser agrees that THE COMPANY will be immediately and irrevocably released from any contractual damages and penalty obligations should any event in clauses 11 or 17 of this Part B occur.
11.10. Termination of this Agreement (for whatever reason) shall be without prejudice to any rights or obligations of a party which have accrued or become due prior to the date of termination.
12. Ownership:
12.1. All goods supplied by THE COMPANY remain the property of THE COMPANY until such goods have been fully paid for, whether such goods are attached to other property or not.
12.2. The Purchaser shall not allow the goods to become encumbered in any manner prior to the full payment thereof and shall advise third parties of the rights of THE COMPANY in and to the goods.
12.3. If any goods supplied to the Purchaser are of a generic nature and have become the property of the Purchaser by operation of law the Purchaser shall be obliged on notice of cancellation of the Agreement to retransfer the same quantity of goods and ownership thereof to THE COMPANY.
13. Jurisdiction and governing law:
13.1. The Parties will attempt in good faith to promptly resolve any dispute arising from or in connection with this Agreement by negotiations between representatives of the parties who have authority to settle the dispute. Any dispute not resolved by negotiation may then, at THE COMPANY'S election, be submitted for final resolution to either –
13.1.1. the Arbitration Foundation of Southern Africa in accordance with its Rules; or
13.1.2. a court of competent jurisdiction.
13.2. If the dispute is referred to arbitration, the parties agree to the following:
13.2.1. One arbitrator will be appointed;
13.2.2. The place of the arbitration will be Johannesburg, South Africa;
13.2.3. The language of the arbitration will be English; and
13.2.4. There will be no appeal process and the decision of the arbitrator will be final and binding.
13.3. If the dispute is referred to a court of competent jurisdiction, The Purchaser hereby consents that THE COMPANY shall have the right to institute any legal action in the Magistrate's Court, notwithstanding that the amounts claimed by THE COMPANY shall exceed the jurisdiction of the Magistrate's Court. THE COMPANY may, at its option, institute any such proceedings in the High Court of the Republic of South Africa, Gauteng Local Division, Johannesburg (or any successor to that court), and in such event, the Purchaser hereby irrevocably and unconditionally consents to the jurisdiction of the High Court, in regard to all matters arising from this Agreement.
13.4. This Agreement and its interpretation is subject to South African law.
14. Notices:
14.1. Any document shall be deemed duly presented to and accepted by the Purchaser (i) within 3 days of prepaid registered mail to any of the Purchaser's business or postal addresses or to the personal address of any director, member or owner of the Purchaser; or (ii) within 24 hours of being emailed to any of the Purchaser's email addresses or any director, member's or owner's email addresses; or (iii) on being delivered by hand to the Purchaser or any director, member or owner of the Purchaser; or (iv) within 48 hours if sent by overnight courier or (v) within 7 days of being sent by surface mail.
14.2. The Purchaser chooses its address for any notification by THE COMPANY, or service of legal documents or processes as the address for delivery of the goods nominated in the Credit Application form or if no Credit Application form, in the applicable purchase order, as its chosen domicilium citandi et executandi.
15. Change of Management and Shareholding in Purchaser, or disposal of Purchaser's business: The Purchaser undertakes to inform THE COMPANY in writing within 7 days of any change of Director, Member, Shareholder, Owner or Partner or address, or 14 days prior to selling or alienating the Purchaser's shares or business, and failure to do so will constitute a material breach of this Agreement. Upon receipt of such written notification, THE COMPANY reserves the right, at its sole discretion, to withdraw or amend any credit facility advanced to the Purchaser, it being acknowledged by the Purchaser that such discretion is exercised by THE COMPANY on reasonable commercial grounds.
16. Protection of Personal Information: The Purchaser hereby consents to the storage and use by THE COMPANY of the personal information that it has provided to THE COMPANY for establishing its credit rating, and to THE COMPANY disclosing such information to credit control companies, banks and other institutions involved in rating credit, in accordance with the Protection of Personal Information Act 4 of 2013. The Purchaser agrees that THE COMPANY will not be held liable for the good faith disclosure of any of this information to such third parties and that no further specific consent needs to be obtained for the transfer of such information to a specific third party.
17. Force majeure: Any order is subject to cancellation by THE COMPANY due to Acts of God or from any cause beyond the control of THE COMPANY which has endured for a period of at least 30 days or more from its commencement (whereafter force majeure may be declared). Neither THE COMPANY nor the Purchaser shall be in breach of its obligations under this Agreement (save for payment obligations) to the extent that performance of such obligations is prevented by any circumstances of force majeure and the affected party shall take reasonable steps to shorten and avoid the delay. If force majeure continues for 90 consecutive days, then THE COMPANY shall be entitled to terminate the Agreement on 14 days written notice to the Purchaser and to obtain payment in respect of deliveries already made and/or ancillary services already performed prior to date of such termination. No claim for damages of any nature whatsoever and from whatsoever cause arising shall lie against THE COMPANY in respect of such interruption, delay, suspension or termination of the Agreement on account of a force majeure event.
18. Confidentiality:
18.1. Any information obtained by either party to this Agreement in terms, or arising from the implementation, of this Agreement shall be treated as confidential by the receiving party and shall not be used, divulged or permitted to be divulged to any person not being a party to this Agreement, without the prior written consent of the other disclosing party, save that –
18.1.1. each party shall be entitled to disclose such information to such of its employees (which shall include any of its directors) who need to know for the purposes of this Agreement. Before revealing such information to any such employees, it undertakes to procure that the employees are aware of the confidential nature of the information being made available to them;
18.1.2. any information which is required to be furnished by law or by existing contract or by any stock exchange on which the shares of either party to this Agreement are listed may be so furnished;
18.1.3. either party shall be entitled (after consultation with the other party so as to avoid embarrassment or prejudice to the extent possible) to make such information available to its shareholders as may be necessary to enable such shareholders to consider the value and prospects of their shareholdings;
18.1.4. neither party shall be precluded from divulging any information to any person who is negotiating with such party for the acquisition of an interest in such party, provided that the person to whom any disclosure is made in the aforesaid circumstances shall first have undertaken in writing not to divulge such information to any other person and to use it only for the purpose of evaluating the business;
18.1.5. no party shall be precluded from using or divulging such information in order to pursue any legal remedy available to it.
18.2. The provisions of this clause 18 of this Part B shall continue following the termination or expiry of a party's obligations under this Agreement.
19. Publicity: The Purchaser agrees that THE COMPANY may disclose in the ordinary course of business the Purchaser's name and logo on THE COMPANY's customer list and website. For the work performed pursuant to this Agreement, the Purchaser consents (or shall procure its customer's consent where the Purchaser is not the end user) to THE COMPANY's desire to publicise a brief summary thereof, identifying the type of work performed, THE COMPANY's products and services used, location, industry and the Purchaser's name for marketing purposes only.

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