

Product datasheet

Specifications



analog input module X80 - 4 inputs +/- 40 mV

BMXART0414H

Price: 22,230.18 ZAR

Main

Range Of Product	Modicon X80
Product Or Component Type	Analog input module
Product Specific Application	For severe environments
Electrical Connection	40 ways 1 connector
Isolation Between Channels	Isolated
Input Level	Low level
Analogue Input Number	4
Analogue Input Type	Voltage +/- 1.28 V Voltage +/- 160 mV Voltage +/- 320 mV Voltage +/- 40 mV Voltage +/- 640 mV Voltage +/- 80 mV Resistor 400 Ohm 2 wires Resistor 400 Ohm 3 wires Resistor 400 Ohm 4 wires Resistor 4000 Ohm 2 wires Resistor 4000 Ohm 3 wires Resistor 4000 Ohm 4 wires Temperature probe -100...+260 °C Cu 10 Temperature probe -100...+450 °C Pt 100 conforming to UL/JIS Temperature probe -100...+450 °C Pt 1000 conforming to UL/JIS Temperature probe -200...+850 °C Pt 100 conforming to IEC Temperature probe -200...+850 °C Pt 1000 conforming to IEC Temperature probe -60...+180 °C Ni 100 Temperature probe -60...+180 °C Ni 1000 Thermocouple +130...+1820 °C thermocouple B Thermocouple +270...+1300 °C thermocouple N Thermocouple -200...+600 °C thermocouple U Thermocouple -200...+760 °C thermocouple J Thermocouple -200...+900 °C thermocouple L Thermocouple -270...+1000 °C thermocouple E Thermocouple -270...+1370 °C thermocouple K Thermocouple -270...+400 °C thermocouple T Thermocouple -50...+1769 °C thermocouple R Thermocouple -50...+1769 °C thermocouple S

Complementary

Analog/Digital Conversion	Sigma delta 16 bits
Analogue Input Resolution	15 bits + sign
Permitted Overload On Inputs	+/- 7.5 V +/- 1.28 V +/- 7.5 V +/- 160 mV +/- 7.5 V +/- 320 mV +/- 7.5 V +/- 40 mV +/- 7.5 V +/- 640 mV +/- 7.5 V +/- 80 mV
Common Mode Rejection	120 dB 50/60 Hz

Excluding VAT and subject to change. Please check with your local distributor through "Where to buy"

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Differential Mode Rejection	60 dB 50/60 Hz
Cold Junction Compensation	External by Pt100 probe
Type Of Filter	First order digital filtering
Nominal Read Cycle Time	200 ms with thermocouple 400 ms with temperature probe
Measurement Error	+/- 0.7 °C Ni 1000 25 °C +/- 2.1 °C Ni 100 25 °C +/- 2.1 °C Pt 100 25 °C +/- 2.1 °C Pt 1000 25 °C +/- 2.7 °C thermocouple U 25 °C +/- 2.8 °C thermocouple J 25 °C +/- 3 °C thermocouple L 25 °C +/- 3.2 °C thermocouple R 25 °C +/- 3.2 °C thermocouple S 25 °C +/- 3.5 °C thermocouple B 25 °C +/- 3.7 °C thermocouple E 25 °C +/- 3.7 °C thermocouple K 25 °C +/- 3.7 °C thermocouple N 25 °C +/- 3.7 °C thermocouple T 25 °C +/- 4 °C Cu 10 25 °C 0.05 % of full scale +/- 1.28 V 25 °C 0.05 % of full scale +/- 160 mV 25 °C 0.05 % of full scale +/- 320 mV 25 °C 0.05 % of full scale +/- 40 mV 25 °C 0.05 % of full scale +/- 640 mV 25 °C 0.05 % of full scale +/- 80 mV 25 °C 0.12 % of full scale 400 Ohm 25 °C 0.12 % of full scale 4000 Ohm 25 °C +/- 1.5 °C Ni 1000 - 25...70 °C +/- 3.5 °C Ni 100 - 25...70 °C +/- 3.5 °C Pt 100 - 25...70 °C +/- 3.5 °C Pt 1000 - 25...70 °C +/- 4.5 °C Cu 10 - 25...70 °C +/- 5.5 °C thermocouple J - 25...70 °C +/- 5.5 °C thermocouple L - 25...70 °C +/- 5.5 °C thermocouple R - 25...70 °C +/- 5.5 °C thermocouple S - 25...70 °C +/- 5.5 °C thermocouple U - 25...70 °C +/- 6 °C thermocouple B - 25...70 °C +/- 6 °C thermocouple E - 25...70 °C +/- 6 °C thermocouple K - 25...70 °C +/- 6 °C thermocouple N - 25...70 °C +/- 6 °C thermocouple T - 25...70 °C <= 0.2 % of full scale +/- 1.28 V - 25...70 °C <= 0.2 % of full scale +/- 160 mV - 25...70 °C <= 0.2 % of full scale +/- 320 mV - 25...70 °C <= 0.2 % of full scale +/- 40 mV - 25...70 °C <= 0.2 % of full scale +/- 640 mV - 25...70 °C <= 0.2 % of full scale +/- 80 mV - 25...70 °C <= 0.3 % of full scale 400 Ohm - 25...70 °C <= 0.3 % of full scale 4000 Ohm - 25...70 °C
Temperature Drift	25 ppm/°C 400 Ohm 25 ppm/°C 4000 Ohm 25 ppm/°C Ni 1000 25 ppm/°C thermocouple B 25 ppm/°C thermocouple E 25 ppm/°C thermocouple J 25 ppm/°C thermocouple K 25 ppm/°C thermocouple L 25 ppm/°C thermocouple N 25 ppm/°C thermocouple R 25 ppm/°C thermocouple S 25 ppm/°C thermocouple T 25 ppm/°C thermocouple U 30 ppm/°C +/- 1.28 V 30 ppm/°C +/- 160 mV 30 ppm/°C +/- 320 mV 30 ppm/°C +/- 40 mV 30 ppm/°C +/- 640 mV 30 ppm/°C +/- 80 mV 30 ppm/°C Cu 10 30 ppm/°C Ni 100 30 ppm/°C Pt 100 30 ppm/°C Pt 1000

Recalibration	Internal
Detection Type	Open circuit Cu 10 Open circuit Ni 100 Open circuit Ni 1000 Open circuit Pt 100 Open circuit Pt 1000 Open circuit thermocouple B Open circuit thermocouple E Open circuit thermocouple J Open circuit thermocouple K Open circuit thermocouple L Open circuit thermocouple N Open circuit thermocouple R Open circuit thermocouple S Open circuit thermocouple T Open circuit thermocouple U
Maximum Wiring Resistance	20 Ohm 2 wires Cu 10 20 Ohm 2 wires Ni 100 20 Ohm 2 wires Pt 100 20 Ohm 3 wires Cu 10 20 Ohm 3 wires Ni 100 20 Ohm 3 wires Pt 100 200 Ohm 2 wires Ni 1000 200 Ohm 2 wires Pt 1000 200 Ohm 3 wires Ni 1000 200 Ohm 3 wires Pt 1000 50 Ohm 4 wires Cu 10 50 Ohm 4 wires Ni 100 50 Ohm 4 wires Pt 100 500 Ohm 4 wires Ni 1000 500 Ohm 4 wires Pt 1000
Measurement Resolution	0.1 °C Cu 10 0.1 °C Ni 100 0.1 °C Ni 1000 0.1 °C Pt 100 0.1 °C Pt 1000 0.1 °C thermocouple B 0.1 °C thermocouple E 0.1 °C thermocouple J 0.1 °C thermocouple K 0.1 °C thermocouple L 0.1 °C thermocouple N 0.1 °C thermocouple R 0.1 °C thermocouple S 0.1 °C thermocouple T 0.1 °C thermocouple U 1280/2exp14 mV +/- 1.28 V 160/2exp14 mV +/- 160 mV 320/2exp14 mV +/- 320 mV 40/2exp14 mV +/- 40 mV 12.5 mOhm 400 Ohm 125 mOhm 4000 Ohm 640/2exp14 mV +/- 640 mV 80/2exp14 mV +/- 80 mV
Maximum Conversion Value	+/- 100 % 400 Ohm +/- 100 % 4000 Ohm +/- 102.5 % +/- 1.28 V +/- 102.5 % +/- 160 mV +/- 102.5 % +/- 320 mV +/- 102.5 % +/- 40 mV +/- 102.5 % +/- 640 mV +/- 102.5 % +/- 80 mV
Mtbf Reliability	1400000 H
Operating Altitude	0...2000 m 2000...5000 m with derating factor
Status Led	1 LED (green) RUN 1 LED per channel (green) channel diagnostic 1 LED (red) ERR 1 LED (red) I/O
Net Weight	0.135 kg
Current Consumption	150 mA at 3.3 V DC

Environment

Vibration Resistance	3 gn
Shock Resistance	30 gn
Ambient Air Temperature For Storage	-40...85 °C
Ambient Air Temperature For Operation	-25...70 °C
Relative Humidity	5...95 % at 55 °C without condensation
Ip Degree Of Protection	IP20
Directives	2014/35/EU - low voltage directive 2014/30/EU - electromagnetic compatibility
Product Certifications	IEC-Ex Merchant Navy UL RCM EAC CSA CE ATEX
Standards	EN 61131-2 EN 61000-6-4 EN 61000-6-2 EN 61010-2-201
Environmental Characteristic	Gas resistant class Gx Gas resistant class 3C4 Dust resistant class 3S4 Sand resistant class 3S4 Salt resistant level 2 Mold growth resistant class 3B2 Fungal spore resistant class 3B2 Hazardous location class I division 2
Protective Treatment	Conformal coating

Packing Units

Unit Type Of Package 1	PCE
Number Of Units In Package 1	1
Package 1 Height	5.500 cm
Package 1 Width	11.500 cm
Package 1 Length	11.800 cm
Package 1 Weight	172.000 g
Unit Type Of Package 2	S02
Number Of Units In Package 2	15
Package 2 Height	15.000 cm
Package 2 Width	30.000 cm
Package 2 Length	40.000 cm
Package 2 Weight	2.921 kg

Contractual warranty

Warranty	18 months
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Sustainability

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Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

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Transparency RoHS/REACH

Well-being performance

✓

Mercury Free

✓

Rohs Exemption Information

Yes

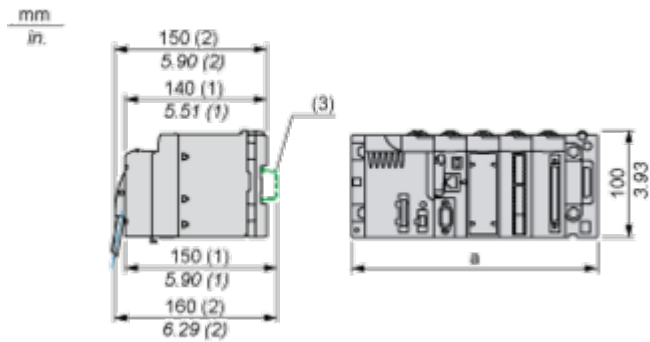
Certifications & Standards

Reach Regulation	REACH Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)
China Rohs Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
Circularity Profile	End of Life Information

Dimensions Drawings

Modules Mounted on Racks

Dimensions



- (1) With removable terminal block (cage, screw or spring).
(2) With FCN connector.
(3) On AM1 ED rail: 35 mm wide, 15 mm deep. Only possible with BMXXBP0400/0400H/0600/0600H/0800/0800H rack.

Rack references	a in mm	a in in.
BMXXBP0400 and BMXXBP0400H	242.4	09.54
BMXXBP0600 and BMXXBP0600H	307.6	12.11
BMXXBP0800 and BMXXBP0800H	372.8	14.68
BMXXBP1200 and BMXXBP1200H	503.2	19.81

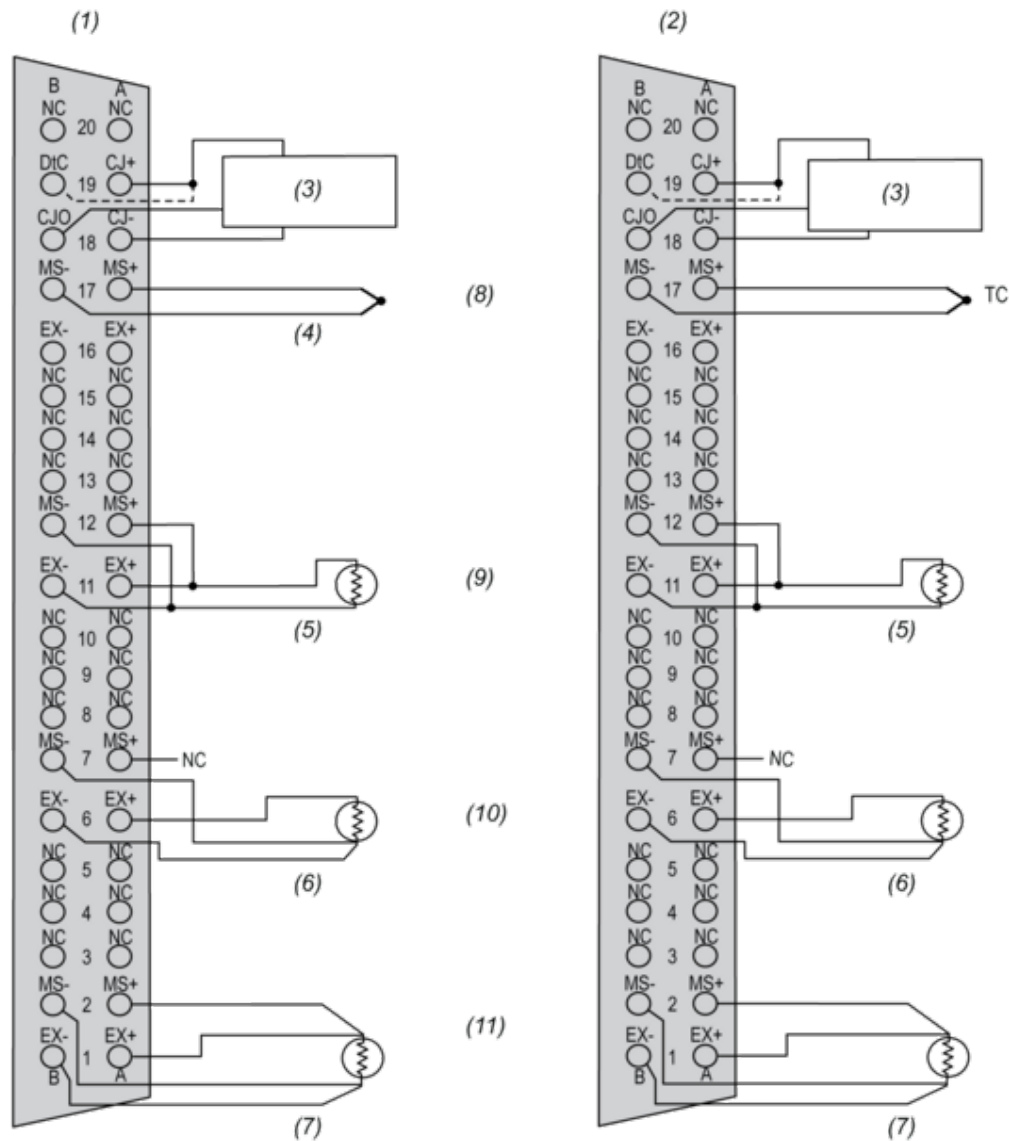
Connections and Schema

Connections and Schema

Below example shows a probe configuration with:

- Channel 0/4: Thermocouple
- Channel 1/5: 2-wires RTD
- Channel 2/6: 3-wires RTD
- Channel 3/7: 4-wires RTD

Module Front View - cabling view



- (1) Left connector
(2) Right connector (BMX ART 414 only)
(3) Cold Junction temperature sensor
(4) Thermocouple
(5) 2-wire RTD probe
(6) 3-wire RTD probe
(7) 4-wire RTD probe
(8) Channel 4/0
(9) Channel 5/1
(10) Channel 6/2
(11) Channel 7/3
MS+ RTD Measure + input / Thermocouple + input
MS- RTD Measure - input / Thermocouple - input

EX+ RTD probe current generator + output

EX- RTD probe current generator - output

NC Not connected

DtC The CJC sensor detection input is connected to CJ+ if the sensor type is DS600. It is not connected (NC) if the sensor type is LM31.

NOTE: The CJC sensor is needed for TC only.