

# Product datasheet

Specifications



Harmony. Modular frequency control relay. 5 A. 1 CO + 1 CO. 120...277 V AC

RM35HZ21FM

Price: 3,775.79 ZAR

## Main

|                                 |                                                                                                                                                                                                                                                                 |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range Of Product                | Harmony Control Relays                                                                                                                                                                                                                                          |
| Relay Type                      | Frequency control relays                                                                                                                                                                                                                                        |
| Product Or Component Type       | Frequency control relay                                                                                                                                                                                                                                         |
| Relay Name                      | RM35HZ21FM                                                                                                                                                                                                                                                      |
| Relay Monitored Parameters      | Overfrequency and underfrequency 50 or 60 Hz                                                                                                                                                                                                                    |
| Time Delay Type                 | Adjustable 0.1...10 s, +/- 10 % Tt- time delay upon fault                                                                                                                                                                                                       |
| Switching Capacity In Va        | 1250 VA                                                                                                                                                                                                                                                         |
| Minimum Switching Current       | 10 mA at 5 V DC                                                                                                                                                                                                                                                 |
| Maximum Power Consumption In Va | 6 VA AC                                                                                                                                                                                                                                                         |
| Measurement Range               | 40...70 Hz                                                                                                                                                                                                                                                      |
| Utilisation Category            | AC-12 conforming to IEC 60947-5-1<br>AC-13 conforming to IEC 60947-5-1<br>AC-14 conforming to IEC 60947-5-1<br>AC-15 conforming to IEC 60947-5-1<br>DC-12 conforming to IEC 60947-5-1<br>DC-13 conforming to IEC 60947-5-1<br>DC-14 conforming to IEC 60947-5-1 |

## Complementary

|                            |                                            |
|----------------------------|--------------------------------------------|
| Reset Time                 | 2000 ms time delay                         |
| Maximum Switching Voltage  | 250 V AC/DC                                |
| [Us] Rated Supply Voltage  | 120...277 V AC                             |
| [Un] Rated Nominal Voltage | 120...277 V AC, non self-powered           |
| Supply Voltage Limits      | 102...308 V AC                             |
| Control Circuit Frequency  | 40...70 Hz                                 |
| Width                      | 35 mm                                      |
| Output Contacts            | 1 C/O + 1 C/O                              |
| Contacts Material          | Cadmium free                               |
| Nominal Output Current     | 5 A                                        |
| Maximum Input Frequency    | 70 Hz                                      |
| Maximum Measuring Cycle    | 200 ms measurement cycle as true rms value |
| Delay At Power Up          | 0.5 s                                      |
| Hysteresis                 | 0.3 % fixed                                |

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

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurement Accuracy          | +/- 10 % of the full scale value in input<br>+/- 10 % of the full scale value in time delay                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Repeat Accuracy               | +/- 0.5 % for input and measurement circuit<br>+/- 0.5 % for time delay                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Measurement Error             | +/- 0.05 %/°C with temperature variation<br>< +/- 1 % over the whole range with voltage variation                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Threshold Setting             | -2...10 Hz<br>-10...2 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Marking                       | CE : 73/23/EEC<br>CE : EMC 89/336/EEC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Overvoltage Category          | III conforming to IEC 60664-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Insulation Resistance         | > 500 MOhm at 500 V DC between supply and relay output conforming to IEC 60255-5<br>> 500 MOhm at 500 V DC between measurement and relay output conforming to IEC 60664-1<br>> 1 MOhm at 500 V DC between supply and measurement conforming to IEC 60255-5<br>> 500 MOhm at 500 V DC between supply and relay output conforming to IEC 60664-1<br>> 500 MOhm at 500 V DC between measurement and relay output conforming to IEC 60255-5<br>> 1 MOhm at 500 V DC between supply and measurement conforming to IEC 60664-1 |
| [Ui] Rated Insulation Voltage | 400 V conforming to IEC 60664-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Operating Voltage Tolerance   | - 15 % + 10 % Un                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Supply Frequency              | 50/60 Hz +/- 10 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Insulation                    | No galvanic insulation between supply and measurement                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Operating Position            | Any position without derating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Connections - Terminals       | Screw terminals, 1 x 0.5...1 x 4 mm² (AWG 20...AWG 11) solid without cable end<br>Screw terminals, 2 x 0.5...2 x 2.5 mm² (AWG 20...AWG 14) solid without cable end<br>Screw terminals, 1 x 0.2...1 x 2.5 mm² (AWG 24...AWG 12) flexible with cable end<br>Screw terminals, 2 x 0.2...2 x 1.5 mm² (AWG 24...AWG 16) flexible with cable end                                                                                                                                                                               |
| Tightening Torque             | 0.6...1 N.m conforming to IEC 60947-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Housing Material              | Self-extinguishing plastic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Local Signalling              | 1 LED green for power ON<br>1 LED yellow for correct frequency (high R1)<br>1 LED yellow for correct frequency (low R2)                                                                                                                                                                                                                                                                                                                                                                                                  |
| Mounting Support              | 35 mm symmetrical DIN rail conforming to IEC 60715                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Electrical Durability         | 100000 cycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Mechanical Durability         | 30000000 cycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Operating Rate                | <= 360 operations/hour full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Control Type                  | Without test button                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Environment

|                               |                                                                                                                                                                                                                                                                    |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Immunity To Microbreaks       | 10 ms                                                                                                                                                                                                                                                              |
| Electromagnetic Compatibility | Emission standard for industrial environments conforming to IEC 61000-6-4<br>Emission standard for residential, commercial and light-industrial environments conforming to IEC 61000-6-3<br>Immunity for industrial environments conforming to NF EN/IEC 61000-6-2 |
| Standards                     | IEC 60255-6<br>NF EN 60255-6                                                                                                                                                                                                                                       |

|                                       |                                                                                                                                           |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Product Certifications                | GL<br>UL<br>CSA<br>C-Tick<br>GOST                                                                                                         |
| Ambient Air Temperature For Storage   | -40...70 °C                                                                                                                               |
| Ambient Air Temperature For Operation | -20...50 °C                                                                                                                               |
| Relative Humidity                     | 95 % at 55 °C conforming to IEC 60068-2-30                                                                                                |
| Vibration Resistance                  | 0.35 mm (f= 5...57.6 Hz) conforming to IEC 60068-2-6/IEC 60255-21-1<br>1 gn (f= 57.6...150 Hz) conforming to IEC 60068-2-6/IEC 60255-21-1 |
| Shock Resistance                      | 15 gn for 11 ms conforming to IEC 60255-21-1                                                                                              |
| Ip Degree Of Protection               | IP20 (terminals) conforming to IEC 60529<br>IP30 (casing) conforming to IEC 60529                                                         |
| Pollution Degree                      | 3 conforming to IEC 60664-1                                                                                                               |
| Dielectric Test Voltage               | 2 kV AC 50 Hz                                                                                                                             |
| Non-Dissipating Shock Wave            | 4 kV                                                                                                                                      |

## Packing Units

|                              |           |
|------------------------------|-----------|
| Unit Type Of Package 1       | PCE       |
| Number Of Units In Package 1 | 1         |
| Package 1 Height             | 4.600 cm  |
| Package 1 Width              | 8.000 cm  |
| Package 1 Length             | 9.700 cm  |
| Package 1 Weight             | 126.000 g |
| Unit Type Of Package 2       | S03       |
| Number Of Units In Package 2 | 48        |
| Package 2 Height             | 30.000 cm |
| Package 2 Width              | 30.000 cm |
| Package 2 Length             | 40.000 cm |
| Package 2 Weight             | 6.838 kg  |

## Contractual warranty

|          |           |
|----------|-----------|
| Warranty | 18 months |
|----------|-----------|

Sustainability



**Green Premium™ label** is Schneider Electric’s commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO<sub>2</sub> products.

**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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[Guide to assess a product’s sustainability >](#)



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](#)

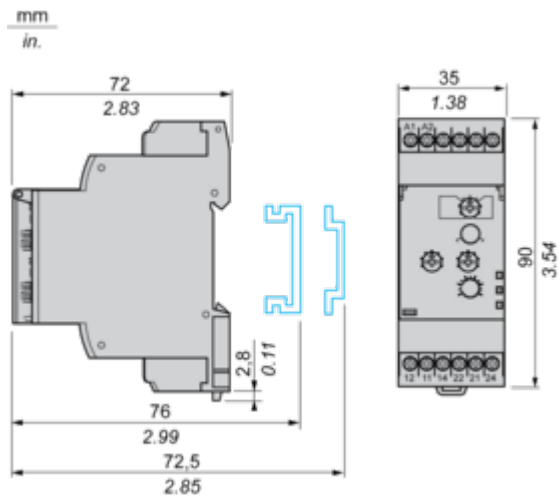
Circularity Profile

[End of Life Information](#)

Dimensions Drawings

Frequency Control Relay

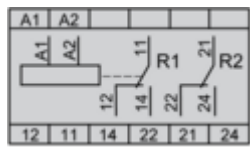
Dimensions and Mounting



Connections and Schema

Frequency Control Relay

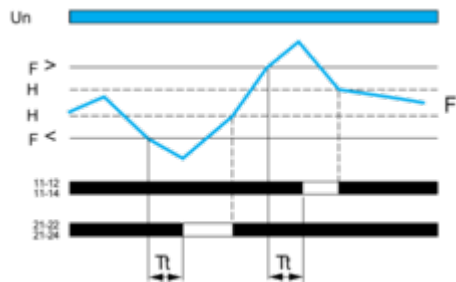
Wiring Diagram



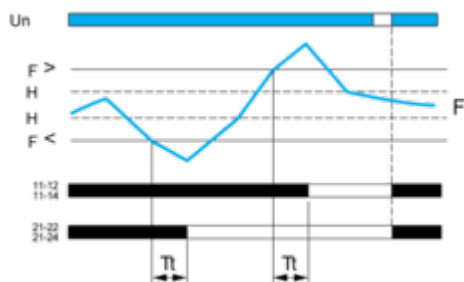
Technical Description

Function Diagrams

Over-Frequency and Under-Frequency Control on 50 Hz or 60 Hz Supplies  
Without memory ("No Memory" mode)



With memory ("Memory" mode)



Legend

- $T_t$  Time delay after crossing of threshold from 0.1 s to 10 s
- $U_n$  Supply voltage
- $F$  Monitored frequency
- $H$  Hysteresis
- $F >$  Over-frequency threshold
- $F <$  Under-frequency threshold
- 11-12, 11-14 R1 output relay connections
- 21-22, 21-24 R2 output relay connections
- Relay status: black color = energized.

**NOTE:** In "Memory" mode, the relay opens after the time delay and stays in that position when crossing of the threshold is detected. The power supply voltage must be switched off to reset the product.