



## Main

|                            |   |
|----------------------------|---|
| Range of product           | Zelio Control   |
| Product or component type  | Modular measurement and control relays  |
| Relay type                 | Frequency control relays  |
| Relay name                 | RM35HZ21FM  |
| Relay monitored parameters | Overfrequency and underfrequency 50 or 60 Hz  |
| Time delay type            | On crossing the threshold adjustable 0.1...10 s, +/- 10 %   |
| Switching capacity in VA   | 1250 VA   |
| Minimum switching current  | 10 mA at 5 V DC   |
| Power consumption in VA    | <= 6 VA AC  |
| Measurement range          | 40...70 Hz frequency  |
| 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 for time delay   |
| Maximum switching voltage | 250 V AC/DC  |
| [Us] rated supply voltage | 120...277 V AC   |
| [Us] rated supply voltage | 120...277 V AC   |
| Supply voltage limits     | 102...308 V AC   |
| Control circuit frequency | 40...70 Hz   |
| Width                     | 1.38 in (35 mm)  |
| Output contacts           | 1 C/O + 1 C/O  |
| Contacts material         | Cadmium free   |
| Nominal output current    | 5 A  |
| Input frequency           | 70 Hz  |
| Measuring cycle           | <= 200 ms measurement cycle as true rms value  |
| Run-up delay at power-up  | 0.5 s  |
| Hysteresis                | 0.3 % fixed  |
| Measurement accuracy      | +/- 10 % of the full scale value in time delay<br>+/- 10 % of the full scale value in input  |
| Repeat accuracy           | +/- 0.5 % input and measurement circuit<br>+/- 0.5 % time delay  |
| Measurement error         | +/- 0.05 %/°C with temperature variation<br>< +/- 1 % over the whole range with voltage variation  |
| Threshold setting         | -10...2 Hz<br>-2...10 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 |

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. 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. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

|                                |  |
|--------------------------------|--|
|                                | 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  |
| Control circuit voltage limits | - 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 mm <sup>2</sup> - AWG 20...AWG 11, solid cable without cable end<br>Screw terminals 2 x 0.5...2 x 2.5 mm <sup>2</sup> - AWG 20...AWG 14, solid cable without cable end<br>Screw terminals 1 x 0.2...1 x 2.5 mm <sup>2</sup> - AWG 24...AWG 12, flexible cable with cable end<br>Screw terminals 2 x 0.2...2 x 1.5 mm <sup>2</sup> - AWG 24...AWG 16, flexible cable with cable end |
| Tightening torque              | 5.31...8.85 lbf.in (0.6...1 N.m) conforming to IEC 60947-1   |
| Housing material               | Self-extinguishing plastic   |
| Status LED                     | 1 LED green power ON<br>1 LED yellow correct frequency (high R1)<br>1 LED yellow correct frequency (low R2)  |
| Mounting support               | 35 mm symmetrical DIN rail conforming to EN/IEC 60715  |
| Electrical durability          | 100000 cycles  |
| Mechanical durability          | 30000000 cycles  |
| Operating rate                 | <= 360 operations/hour under full load   |

## Environment

|                                       |  |
|---------------------------------------|--|
| immunity to microbreaks               | 10 ms  |
| electromagnetic compatibility         | Emission standard for industrial environments conforming to EN/IEC 61000-6-4<br>Emission standard for residential, commercial and light-industrial environments conforming to EN/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                | CSA<br>C-Tick<br>GL<br>GOST<br>UL  |
| ambient air temperature for storage   | -40...158 °F (-40...70 °C)   |
| ambient air temperature for operation | -4...122 °F (-20...50 °C)  |
| relative humidity                     | 95 % at 131 °F (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 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   |

## Offer Sustainability

|   |  |
|---|--|
| Green Premium product   | Green Premium product  |
| Compliant - since 0701 - Schneider Electric declaration of conformity | Compliant - since 0701 - Schneider Electric declaration of conformity              |
| Reference not containing SVHC above the threshold                     | Reference not containing SVHC above the threshold                                  |
| Available   | Available  |
| Available   | Available  |
| WARNING: This product can expose you to chemicals including:          | WARNING: This product can expose you to chemicals including:                       |
| Lead and lead compounds, which is known to the State                  | Lead and lead compounds, which is known to the State of California to cause cancer |

of California to cause cancer and birth defects or other reproductive harm. and birth defects or other reproductive harm.

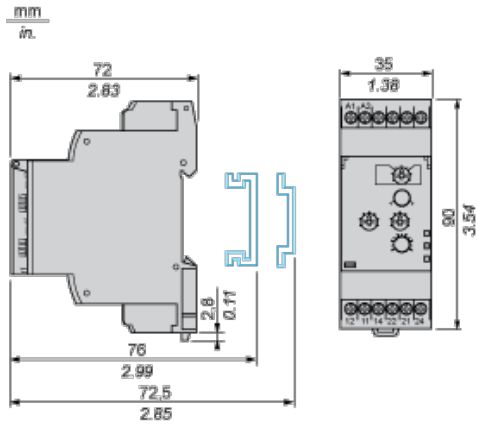
For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov) For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

### Contractual warranty

Warranty period 18 months

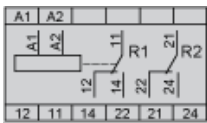
## Frequency Control Relay

### Dimensions and Mounting



## Frequency Control Relay

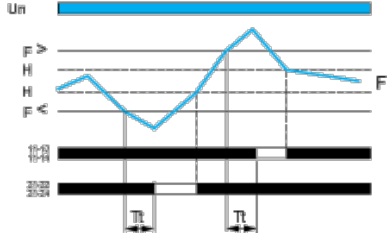
### Wiring Diagram



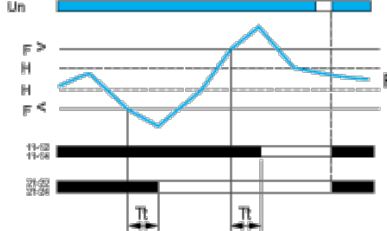
## Function Diagrams

### Over-Frequency and Under-Frequency Control on 50 Hz or 60 Hz Supplies

#### Without memory ("No Memory" mode)



#### With memory ("Memory" mode)



### Legend

Tt Time delay after crossing of threshold from 0.1 s to 10 s

Un 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.