

## Product data sheet

### Characteristics

# RM35UA12MW

Harmony Control Relays, Modular 1 phase Voltage control relay, 5A, 2CO, range 1..100V, 24..240V AC DC



### Main

|                               |   |
|-------------------------------|---|
| Range of product              | Harmony Control Relays  |
| Product or component type     | Voltage control relay   |
| Relay type                    | Multifunction voltage control relay   |
| Relay name                    | RM35UA  |
| Relay monitored parameters    | Overvoltage or undervoltage detection   |
| Time delay                    | Adjustable 0.3...30 s, 0 + 10 % on crossing the threshold   |
| Switching capacity in VA      | 1250 VA   |
| Minimum switching current     | 10 mA at 5 V DC   |
| Maximum switching current     | 5 A AC/DC   |
| Power consumption in VA       | 0...3.5 VA AC   |
| Measurement range             | 1...100 V voltage   |
| 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 |
| Contacts type and composition | 2 C/O   |

### Complementary

|                                |   |
|--------------------------------|---|
| Reset time                     | 1500 ms time delay  |
| Maximum switching voltage      | 250 V AC/DC   |
| [Us] rated supply voltage      | 24...240 V AC/DC 50/60 Hz +/- 10 %  |
| Supply voltage limits          | 20.4...264 V AC/DC  |
| Maximum power consumption in W | 0.6 W DC  |
| Immunity to microbreaks        | 10 ms   |
| Control circuit frequency      | 40...70 Hz +/- 10 %   |
| Resistance across terminals    | 110 MOhm at E2-M terminals<br>22 MOhm at E1-M terminals<br>220 mOhm at E3-M terminals |
| Output contacts                | 2 C/O   |
| Nominal output current         | 5 A   |
| Maximum measuring cycle        | 30 ms measurement cycle as true rms value   |
| Hysteresis                     | 5...50 % of threshold setting   |
| Delay at power up              | 600 ms  |
| Measurement accuracy           | +/- 10 % of the full scale value  |
| Repeat accuracy                | +/- 0.5 % for input and measurement circuit<br>+/- 2 % for time delay                 |

|  |  |
|--|--|
| Measurement error                          | +/- 0.05 %/°C with temperature variation<br>< 1 % over the whole range with voltage variation  |
| Polarity                                   | Non reversible polarity on DC supply   |
| Sensitivity scale                          | 1...10 V E1-M terminals<br>10...100 V E3-M terminals<br>5...50 V E2-M terminals  |
| Threshold setting                          | 10...100 %   |
| Quality labels                             | CE   |
| 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 |
| [U <sub>I</sub> ] rated insulation voltage | 250 V conforming to IEC 60664-1<br>600 V conforming to IEC 60664-1   |
| Operating voltage tolerance                | - 15 % + 10 % U <sub>n</sub>   |
| 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 without cable end<br>Screw terminals, 2 x 0.5...2 x 2.5 mm <sup>2</sup> (AWG 20...AWG 14) solid without cable end<br>Screw terminals, 1 x 0.2...2 x 2.5 mm <sup>2</sup> (AWG 24...AWG 12) flexible with cable end<br>Screw terminals, 2 x 0.2...2 x 1.5 mm <sup>2</sup> (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                           | LED (green) for power ON<br>LED (yellow) for relay ON  |
| 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 full load   |
| Safety reliability data                    | B10d = 290000<br>MTTFd = 308.2 years   |
| Width                                      | 35 mm  |
| Net weight                                 | 0.08 kg  |
| Compatibility code                         | RM3  |

## Environment

|                                       |  |
|---------------------------------------|--|
| 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                             | EN/IEC 60255-6   |
| Product certifications                | GOST<br>C-Tick<br>UL<br>GL<br>CSA  |
| Directives                            | 73/23/EEC - low voltage directive<br>89/336/EEC - electromagnetic compatibility  |
| 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<br>1 gn (f= 57.6...150 Hz) conforming to IEC 60255-21-1   |
| Shock resistance                      | 5 gn conforming to IEC 60068-2-27  |

|                            |  |
|----------------------------|--|
| 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, 1 min AC 50 Hz conforming to IEC 60255-5<br>2 kV, 1 min AC 50 Hz conforming to IEC 60664-1     |
| Non-dissipating shock wave | 4 kV conforming to IEC 60255-5<br>4 kV conforming to IEC 60664-1<br>4 kV conforming to IEC 61000-4-5 |

### Packing Units

|                              |          |
|------------------------------|----------|
| Unit Type of Package 1       | PCE      |
| Number of Units in Package 1 | 1        |
| Package 1 Height             | 4.5 cm   |
| Package 1 Width              | 7.8 cm   |
| Package 1 Length             | 9.5 cm   |
| Package 1 Weight             | 137.0 g  |
| Unit Type of Package 2       | S03      |
| Number of Units in Package 2 | 48       |
| Package 2 Height             | 30.0 cm  |
| Package 2 Width              | 30.0 cm  |
| Package 2 Length             | 40.0 cm  |
| Package 2 Weight             | 7.305 kg |

### Offer Sustainability

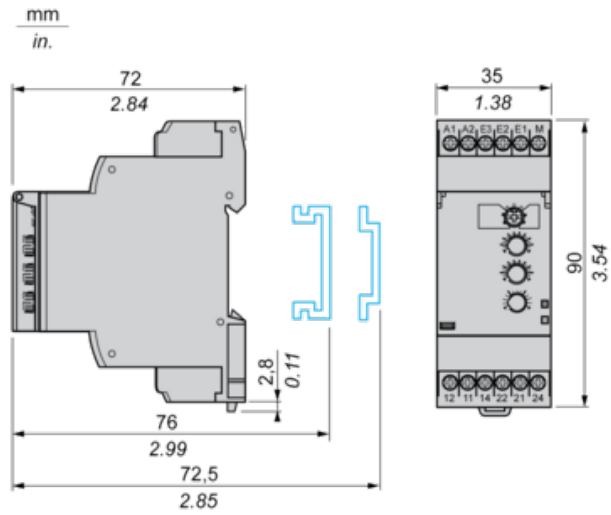
|                            |   |
|----------------------------|---|
| Sustainable offer status   | Green Premium product   |
| REACH Regulation           | <a href="#">REACH Declaration</a>   |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope) <a href="#">EU RoHS Declaration</a>                              |
| Mercury free               | Yes   |
| China RoHS Regulation      | <a href="#">China RoHS Declaration</a>  |
| RoHS exemption information | <a href="#">Yes</a>   |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>   |
| Circularity Profile        | <a href="#">End Of Life Information</a>   |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |

### Contractual warranty

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

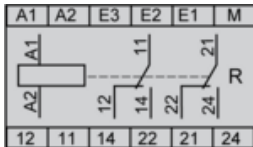
Multifunction Voltage Control Relays

Dimensions and Mounting



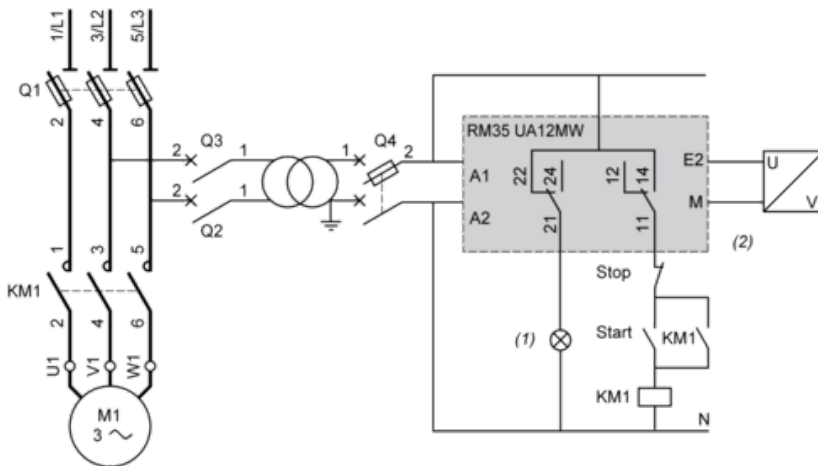
Multifunction Voltage Control Relays

Wiring Diagram



Application Scheme

Example: Overspeed Monitoring (Undervoltage Function)

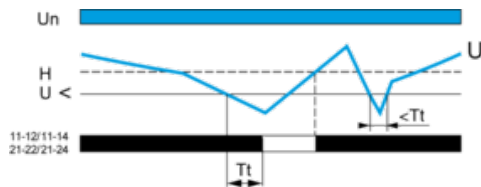


- (1) Overspeed
- (2) Tachogenerator

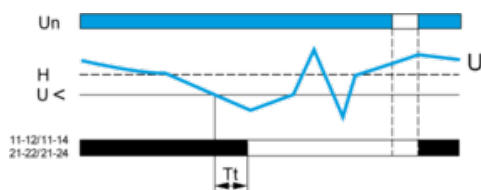
Function Diagrams

Undervoltage Control

Without memory ("No Memory" mode)

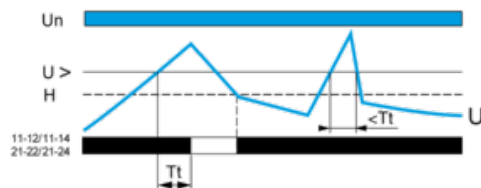


With memory ("Memory" mode)

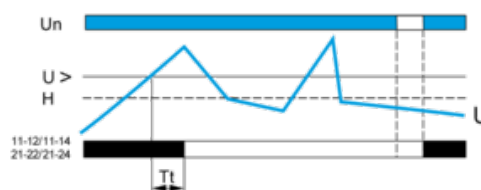


Overvoltage Control

Without memory ("No Memory" mode)



With memory ("Memory" mode)



Legend

Tt Time delay after crossing of threshold

Un Nominal supply voltage

U Monitored supply voltage

H Hysteresis

U> Overvoltage threshold

U< Undervoltage threshold

11-12/11-14, 21-22/21-24 Output relay connections

Relay status: black color = energized.

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