



## Main

|                                 |   |
|---------------------------------|---|
| Range of Product                | Harmony Control Relays  |
| Product or Component Type       | Current control relay   |
| Relay Type                      | Current control relay   |
| Relay name                      | RM35JA  |
| Relay monitored parameters      | Overcurrent or undercurrent in window mode<br>Overcurrent or undercurrent detection   |
| Time delay                      | Adjustable 1...20 s, 0 + 10 % on energisation T <sub>i</sub><br>Adjustable 0.3...30 s, 0 + 10 % on crossing the threshold T <sub>t</sub>                      |
| Switching capacity in VA        | 1250 VA   |
| Minimum switching current       | 10 mA 5 V DC  |
| Maximum switching current       | 5 A AC  |
| Maximum power consumption in VA | 3.5 VA AC   |
| Measurement range               | 10...100 mA E2-M terminals<br>2...20 mA E1-M terminals<br>2...500 mA current<br>50...500 mA E3-M terminals  |
| Utilisation category            | AC-12 IEC 60947-5-1<br>AC-13 IEC 60947-5-1<br>AC-14 IEC 60947-5-1<br>AC-15 IEC 60947-5-1<br>DC-12 IEC 60947-5-1<br>DC-13 IEC 60947-5-1<br>DC-14 IEC 60947-5-1 |
| Contacts type and composition   | 2 C/O   |

## Complementary

|                                |   |
|--------------------------------|---|
| Reset time                     | 1500 ms time delay  |
| Maximum switching voltage      | 250 V AC  |
| [Us] Rated Supply Voltage      | 24...240 V AC/DC 50/60 Hz +/- 10 %  |
| Supply voltage limits          | 20.4...264 V AC/DC  |
| Operating voltage tolerance    | - 15 % + 10 % Un  |
| Maximum power consumption in W | 0.6 W DC  |
| Control circuit frequency      | 40...70 Hz +/- 10 %   |
| Resistance across terminals    | 1 Ohm E2-M terminals<br>5 Ohm E1-M terminals<br>0.2 Ohm 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 % threshold setting  |
| Delay at power up              | 0.3 s   |
| Measurement accuracy           | +/- 10 % of the full scale value  |
| Repeat accuracy                | +/- 0.5 % input and measurement circuit<br>+/- 2 % time delay                                 |
| Measurement error              | 0.05 %/°C with temperature variation<br>1 by volt over the whole range with voltage variation |

|                               |  |
|-------------------------------|--|
| Polarity                      | No DC  |
| Threshold setting             | 10...100 %   |
| Marking                       | CE : EMC 89/336/EEC<br>CE : 73/23/EEC  |
| Overvoltage category          | III IEC 60664-1  |
| Insulation resistance         | > 500 MOhm 500 V DC between supply and relay output IEC 60255-5<br>> 500 MOhm 500 V DC between measurement and relay output IEC 60664-1<br>> 1 MOhm 500 V DC between supply and measurement IEC 60255-5<br>> 500 MOhm 500 V DC between supply and relay output IEC 60664-1<br>> 500 MOhm 500 V DC between measurement and relay output IEC 60255-5<br>> 1 MOhm 500 V DC between supply and measurement IEC 60664-1 |
| [Ui] rated insulation voltage | 250 V IEC 60664-1  |
| 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             | 5.31...8.85 lbf.in (0.6...1 N.m) IEC 60947-1   |
| Housing material              | Self-extinguishing plastic   |
| Local signalling              | For power ON LED (green)<br>For relay ON LED (yellow)  |
| 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   |
| Safety reliability data       | MTTFd = 296.8 years<br>B10d = 270000   |
| Contacts material             | Cadmium free   |
| Width                         | 1.38 in (35 mm)  |
| Net Weight                    | 0.29 lb(US) (0.13 kg)  |

## Environment

|                                       |  |
|---------------------------------------|--|
| Immunity to microbreaks               | 50 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  |
| Product Certifications                | GL[RETURN]CSA[RETURN]GOST[RETURN]UL[RETURN]C-tick  |
| 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 % 131 °F (55 °C) IEC 60068-2-30   |
| Vibration resistance                  | 0.35 mm 5...57.6 Hz)IEC 60068-2-6<br>1 gn 57.6...150 Hz)IEC 60255-21-1   |
| Shock resistance                      | 15 gn 11 ms IEC 60255-21-1   |
| IP degree of protection               | IP20 IEC 60529 terminals)<br>IP30 IEC 60529 casing)  |
| Pollution degree                      | 3 IEC 60664-1  |
| Dielectric test voltage               | 2 KV AC 50 Hz, 1 min IEC 60255-5<br>2 kV AC 50 Hz, 1 min IEC 60664-1   |
| Non-dissipating shock wave            | 4 KV IEC 60255-5<br>4 KV IEC 60664-1<br>4 kV IEC 61000-4-5   |

## Ordering and shipping details

|                   |                                      |
|-------------------|--------------------------------------|
| Category          | 22380-RELAYS-MEASUREMENT (RM17-RM35) |
| Discount Schedule | CP2                                  |
| GTIN              | 3389119405218                        |
| Returnability     | Yes                                  |
| Country of origin | ID                                   |

## Packing Units

|                              |                         |
|------------------------------|-------------------------|
| Unit Type of Package 1       | PCE                     |
| Number of Units in Package 1 | 1                       |
| Package 1 Height             | 1.77 in (4.500 cm)      |
| Package 1 Width              | 3.07 in (7.800 cm)      |
| Package 1 Length             | 3.74 in (9.500 cm)      |
| Package 1 Weight             | 4.87 oz (138.000 g)     |
| Unit Type of Package 2       | S03                     |
| Number of Units in Package 2 | 48                      |
| Package 2 Height             | 11.81 in (30.000 cm)    |
| Package 2 Width              | 11.81 in (30.000 cm)    |
| Package 2 Length             | 15.75 in (40.000 cm)    |
| Package 2 Weight             | 16.20 lb(US) (7.350 kg) |

## Offer Sustainability

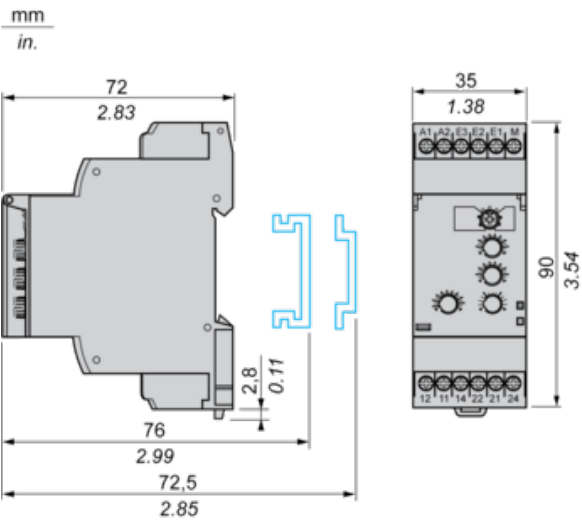
|                            |   |
|----------------------------|---|
| Sustainable offer status   | Green Premium product   |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |
| REACH Regulation           | <a href="#">REACH Declaration</a>   |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)  |
| 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 |
|----------|-----------|

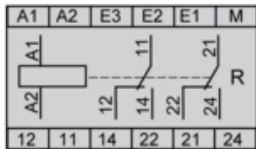
Current Control Relays

Dimensions and Mounting



## Current Control Relays

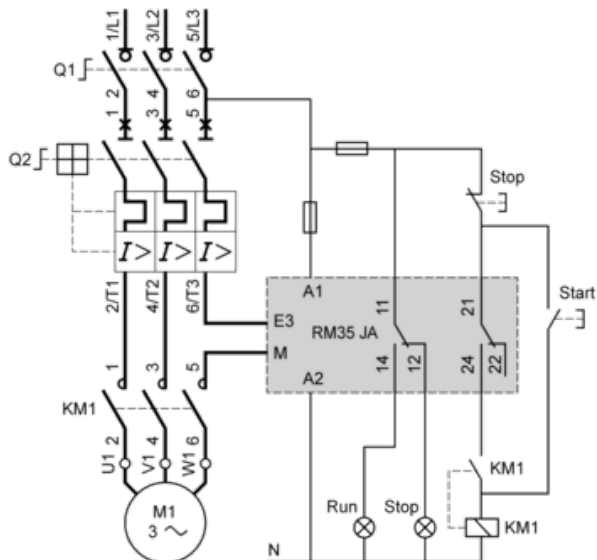
### Wiring Diagram



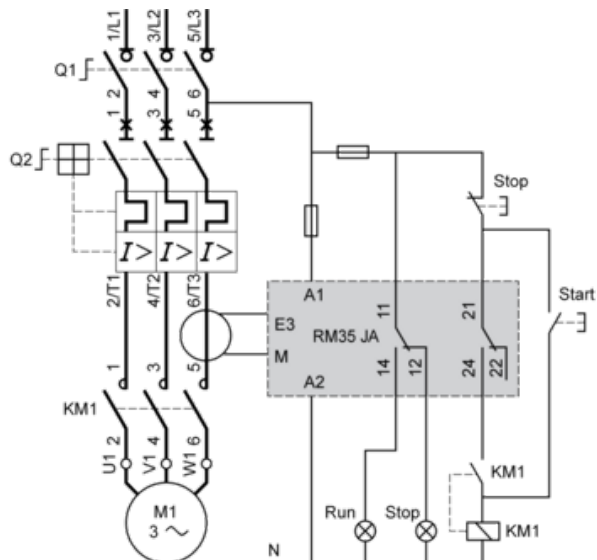
### Application Schemes

#### Example: Detection of Jamming on a Crusher (Overcurrent Function)

Current measured  $\leq 15$  A



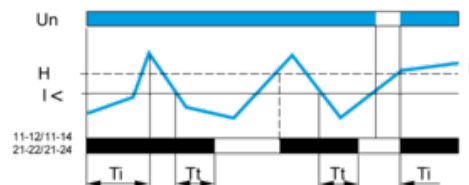
Current measured  $> 15$  A



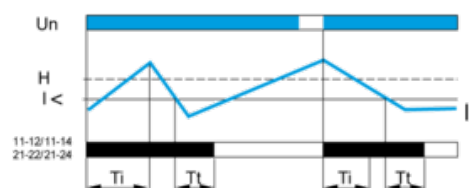
## Function Diagrams

### Undercurrent Detection

Without memory ("No Memory" mode)

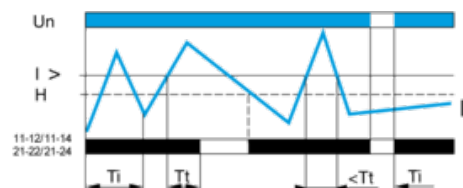


With memory ("Memory" mode)

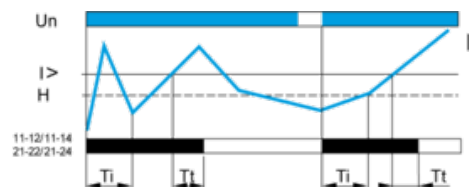


### Overcurrent Detection

Without memory ("No Memory" mode)



With memory ("Memory" mode)



### Legend

$T_i$  Starting inhibition time delay

$T_t$  Time delay after crossing of threshold

$U_n$  Supply voltage

$I$  Monitored current

$H$  Hysteresis

$I_{>}$  Overcurrent threshold

$I_{<}$  Undercurrent 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.