



### Main

|                               |                                                                                      |
|-------------------------------|--------------------------------------------------------------------------------------|
| Range of Product              | Harmony Control Relays                                                               |
| Product or Component Type     | 3-phase control relay                                                                |
| Relay Type                    | Control relay                                                                        |
| Phase                         | 3 phase                                                                              |
| Relay name                    | RM22TR                                                                               |
| Relay monitored parameters    | Phase sequence<br>Phase failure detection<br>Overvoltage and undervoltage detection  |
| Time delay type               | Adjustable 0.1...30 s, +/- 10 % of the full scale value on crossing the threshold Tt |
| Switching capacity in VA      | 2000 VA                                                                              |
| Measurement range             | 200...240 V voltage AC                                                               |
| Contacts type and composition | 2 C/O                                                                                |

### Complementary

|                                             |                                                                                                                         |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Reset time                                  | 1500 ms at maximum voltage                                                                                              |
| Maximum switching voltage                   | 250 V AC                                                                                                                |
| Minimum switching current                   | 10 mA 5 V DC                                                                                                            |
| Maximum switching current                   | 8 A AC                                                                                                                  |
| [Us] Rated Supply Voltage                   | 200...240 V AC                                                                                                          |
| Supply voltage limits                       | 160...288 V AC                                                                                                          |
| Operating limits                            | - 20 % + 20 % Un                                                                                                        |
| Power consumption in VA                     | 10 VA 240 V AC 60 Hz                                                                                                    |
| Voltage detection threshold                 | < 100 V AC                                                                                                              |
| Supply voltage frequency                    | 50...60 Hz +/- 10 %                                                                                                     |
| Output contacts                             | 2 C/O                                                                                                                   |
| Setting accuracy of the switching threshold | +/- 10 % of the full scale                                                                                              |
| Switching threshold drift                   | <= 0.05 % per degree centigrade depending permissible ambient air temperature<br><= 1 % within the supply voltage range |
| Setting accuracy of time delay              | 10 P                                                                                                                    |
| Time delay drift                            | <= 0.05 % per degree centigrade depending permissible ambient air temperature<br><= 1 % within the supply voltage range |
| Hysteresis                                  | 2 % fixed selectable                                                                                                    |
| Run-up delay at power-up                    | 650 ms                                                                                                                  |
| Maximum measuring cycle                     | 150 ms measurement cycle as true rms value                                                                              |
| Threshold adjustment voltage                | 2...20 % of Un selected                                                                                                 |
| Voltage range                               | 200...240 V phase to phase                                                                                              |
| Repeat accuracy                             | +/- 0.5 % input and measurement circuit<br>+/- 3 % time delay                                                           |
| Measurement error                           | < 1 % over the whole range with voltage variation<br>< 0.05 %/°C with temperature variation                             |
| Response time                               | <= 300 ms                                                                                                               |
| Overvoltage category                        | III IEC 60664-1<br>III UL 508                                                                                           |
| Insulation resistance                       | > 100 MOhm 500 V DC IEC 60255-27                                                                                        |
| Mounting position                           | Any position                                                                                                            |

The information provided in this documentation contains general descriptions and/or technical characteristics of the products 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.

|                         |                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connections - terminals | 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, 2 x 0.2...2 x 1.5 mm <sup>2</sup> AWG 24...AWG 16) flexible with cable end<br>Screw terminals, 1 x 0.5...1 x 3.3 mm <sup>2</sup> AWG 20...AWG 12) solid without cable end<br>Screw terminals, 1 x 0.2...1 x 2.5 mm <sup>2</sup> AWG 24...AWG 14) 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                                                                                                                                                                                                                                                                                                                                                               |
| Status LED              | Relay ON LED Yellow)<br>Power ON LED Green)                                                                                                                                                                                                                                                                                                                                              |
| Mounting support        | 35 mm DIN rail conforming to EN/IEC 60715                                                                                                                                                                                                                                                                                                                                                |
| Electrical durability   | 100000 cycles                                                                                                                                                                                                                                                                                                                                                                            |
| Mechanical durability   | 10000000 cycles                                                                                                                                                                                                                                                                                                                                                                          |
| Utilisation category    | AC-15 IEC 60947-5-1<br>DC-13 IEC 60947-5-1<br>AC-1 IEC 60947-4-1<br>DC-1 IEC 60947-4-1                                                                                                                                                                                                                                                                                                   |
| Safety reliability data | MTTFd = 388.1 years<br>B10d = 350000                                                                                                                                                                                                                                                                                                                                                     |
| Contacts material       | Cadmium free                                                                                                                                                                                                                                                                                                                                                                             |
| Width                   | 0.89 in (22.5 mm)                                                                                                                                                                                                                                                                                                                                                                        |
| Net Weight              | 0.20 lb(US) (0.09 kg)                                                                                                                                                                                                                                                                                                                                                                    |

## Environment

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Immunity to microbreaks               | 10 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Electromagnetic compatibility         | Immunity for residential, commercial and light-industrial environments EN/IEC 61000-6-1<br>Immunity for industrial environments EN/IEC 61000-6-2<br>Emission standard for residential, commercial and light-industrial environments EN/IEC 61000-6-3<br>Emission standard for industrial environments EN/IEC 61000-6-4<br>Electrostatic discharge 6 kV contact discharge)level 3 IEC 61000-4-2<br>Electrostatic discharge 8 kV air discharge)level 3 IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test 10 V/mlevel 3 IEC 61000-4-3<br>Electrical fast transient/burst immunity test 4 kV direct)level 4 IEC 61000-4-4<br>Electrical fast transient/burst immunity test 2 kV capacitive coupling)level 4 IEC 61000-4-4<br>Surge immunity test 4 kV common mode)level 4 IEC 61000-4-5<br>Surge immunity test 2 kV differential mode)level 4 IEC 61000-4-5<br>Conducted and radiated emissionsclass B group 1 CISPR 11<br>Conducted and radiated emissionsclass B CISPR 22 |
| Standards                             | EN/IEC 60255-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Product Certifications                | CSA<br>CCC<br>EAC<br>RCM<br>CE<br>GL<br>UL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Ambient Air Temperature for Storage   | -40...158 °F (-40...70 °C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Ambient air temperature for operation | -4...122 °F (-20...50 °C) 60 Hz<br>-4...140 °F (-20...60 °C) 50 Hz AC/DC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Relative humidity                     | 93...97 % 77...131 °F (25...55 °C) IEC 60068-2-30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Vibration resistance                  | 0.075 mm 10...58.1 Hz) not in operation IEC 60068-2-6<br>1 gn 10...58.1 Hz) not in operation IEC 60068-2-6<br>0.035 mm 58.1...150 Hz) in operation IEC 60068-2-6<br>0.5 gn 58.1...150 Hz) in operation IEC 60068-2-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Shock resistance                      | 15 gn 11 ms) not in operation IEC 60068-2-27<br>5 gn 11 ms) in operation IEC 60068-2-27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| IP degree of protection               | IP20 IEC 60529 terminals)<br>IP40 IEC 60529 housing)<br>IP50 IEC 60529 front panel)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Pollution degree                      | 3 IEC 60664-1<br>3 UL 508                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Dielectric test voltage               | 2.5 kV AC 50 Hz, 1 min IEC 60255-27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Ordering and shipping details

|                       |                                        |
|-----------------------|----------------------------------------|
| Category              | 22380 - RELAYS-MEASUREMENT (RM17-RM35) |
| Discount Schedule     | CP2                                    |
| GTIN                  | 3606480792182                          |
| Nbr. of units in pkg. | 1                                      |
| Package weight(Lbs)   | 3.56 oz (101 g)                        |
| Returnability         | Yes                                    |
| Country of origin     | ID                                     |

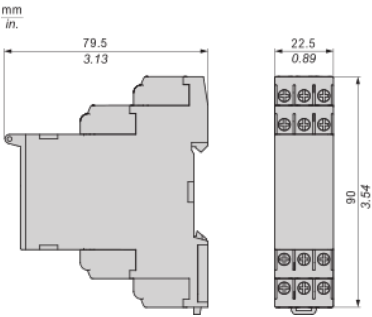
## Packing Units

|                              |                          |
|------------------------------|--------------------------|
| Unit Type of Package 1       | PCE                      |
| Package 1 Height             | 3.23 in (8.2 cm)         |
| Package 1 width              | 3.74 in (9.5 cm)         |
| Package 1 Length             | 1.02 in (2.6 cm)         |
| Unit Type of Package 2       | S02                      |
| Number of Units in Package 2 | 40                       |
| Package 2 Weight             | 9.91 lb(US) (4.495 kg)   |
| Package 2 Height             | 5.91 in (15 cm)          |
| Package 2 width              | 11.81 in (30 cm)         |
| Package 2 Length             | 15.75 in (40 cm)         |
| Unit Type of Package 3       | PAL                      |
| Number of Units in Package 3 | 640                      |
| Package 3 Weight             | 189.99 lb(US) (86.18 kg) |
| Package 3 Height             | 19.69 in (50 cm)         |
| Package 3 width              | 23.62 in (60 cm)         |
| Package 3 Length             | 31.50 in (80 cm)         |

## 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) <a href="#">EU RoHS Declaration</a>                                                                                                                                                                                              |
| Mercury free               | Yes                                                                                                                                                                                                                                                                                         |
| RoHS exemption information | <a href="#">Yes</a>                                                                                                                                                                                                                                                                         |
| China RoHS Regulation      | <a href="#">China RoHS Declaration</a>                                                                                                                                                                                                                                                      |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>                                                                                                                                                                                                                                               |
| Circularity Profile        | <a href="#">End Of Life Information</a>                                                                                                                                                                                                                                                     |

Dimensions

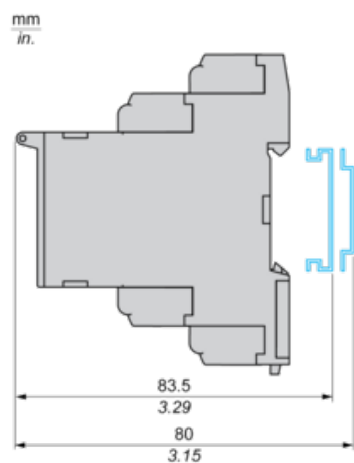


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Mounting and Clearance

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Rail Mounting



3-Phase Voltage Control Relay

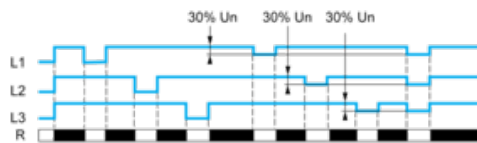
Wiring Diagram



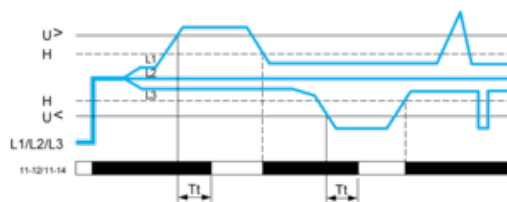
L1,L2,L3 : Supply to be monitored  
11-14,12 : 1st C/O contact of output relay  
21-24,22 : 2nd C/O contact of output relay

## Function Diagrams

### Phase Failure Detection ( $U_{\text{measured}} < 0.7 \times \text{nominal supply voltage}$ )



### Control of Overvoltage and Undervoltage



### Legend

$U_n$  Nominal supply voltage

R Output relay

$T_t$  Overvoltage and undervoltage threshold delay (adjustable on front panel from 0.3 to 30 s)

H Hysteresis

$U>$  Overvoltage threshold

$U<$  Undervoltage threshold

L1, L2, L3 Phases of the supply voltage monitored

11-12, 11-14 R1 output relay connections

Relay status: black color = energized.

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