

# Product data sheet

Specifications



## three-phase network control relay RM4-T - range 300..430 V

RM4TU02

⚠ Discontinued on: Dec 31, 2016

⚠ Discontinued

### Main

|                               |                                                                     |
|-------------------------------|---------------------------------------------------------------------|
| Range Of Product              | Harmony Relay                                                       |
| Relay Type                    | Control relay                                                       |
| Product Or Component Type     | Industrial measurement and control relays                           |
| Product Specific Application  | For 3-phase supply                                                  |
| Relay Name                    | RM4-T                                                               |
| Relay Monitored Parameters    | Phase sequence<br>Undervoltage detection<br>Phase failure detection |
| Time Delay                    | Without                                                             |
| Contacts Type And Composition | 2 C/O                                                               |
| Poles Description             | 3P                                                                  |

### Complementary

|                                             |                                                                                                                       |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Maximum Switching Voltage                   | 440 V AC                                                                                                              |
| Control Threshold Undervoltage              | 300...430 V                                                                                                           |
| Output Contacts                             | 2 C/O                                                                                                                 |
| Setting Accuracy Of The Switching Threshold | +/-3 %                                                                                                                |
| Switching Threshold Drift                   | <= 0.06 % per degree centigrade depending permissible ambient air temperature<br><= 0.5 % within the measuring range  |
| Setting Accuracy Of Time Delay              | 10 P                                                                                                                  |
| Time Delay Drift                            | <= 0.07 % per degree centigrade depending on the rated operational temperature<br><= 0.5 % within the measuring range |
| Hysteresis                                  | 5 % fixed of de-energisation threshold                                                                                |
| Delay At Power Up                           | 650 ms                                                                                                                |
| Maximum Measuring Cycle                     | 80 ms                                                                                                                 |
| Marking                                     | CE                                                                                                                    |
| Overvoltage Category                        | III conforming to IEC 60664-1                                                                                         |
| [Ui] Rated Insulation Voltage               | 500 V conforming to IEC                                                                                               |
| Supply Frequency                            | 50/60 Hz +/- 5 %                                                                                                      |
| Operating Position                          | Any position without derating                                                                                         |
| Connections - Terminals                     | Screw terminals, 2 x 1.5 mm²flexible with cable end<br>Screw terminals, 2 x 2.5 mm²flexible without cable end         |

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

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tightening Torque                           | 0.6...1.1 N.m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Mechanical Durability                       | 30000000 cycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| [Ith] Conventional Free Air Thermal Current | 8 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| [Ie] Rated Operational Current              | 2 A at 70 °C 24 V DC-13 conforming to IEC 60947-5-1/1991<br>2 A at 70 °C 24 V DC-13 conforming to VDE 0660<br>3 A at 70 °C 115 V AC-15 conforming to IEC 60947-5-1/1991<br>3 A at 70 °C 115 V AC-15 conforming to VDE 0660<br>3 A at 70 °C 24 V AC-15 conforming to IEC 60947-5-1/1991<br>3 A at 70 °C 24 V AC-15 conforming to VDE 0660<br>3 A at 70 °C 250 V AC-15 conforming to IEC 60947-5-1/1991<br>3 A at 70 °C 250 V AC-15 conforming to VDE 0660<br>0.1 A at 70 °C 250 V DC-13 conforming to IEC 60947-5-1/1991<br>0.1 A at 70 °C 250 V DC-13 conforming to VDE 0660<br>0.3 A at 70 °C 115 V DC-13 conforming to IEC 60947-5-1/1991<br>0.3 A at 70 °C 115 V DC-13 conforming to VDE 0660 |
| Switching Capacity In Ma                    | 10 mA at 12 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Switching Voltage                           | 250 V AC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Contacts Material                           | 90/10 silver nickel contacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Number Of Cables                            | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Height                                      | 78 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Width                                       | 22.5 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Depth                                       | 80 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Terminals Description Iso N°1               | ALT<br>(25-26-28)OC<br>(L1-L2-L3)CO<br>(15-16-18)OC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Output Relay State                          | Tripped, fault present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 9 Mm Pitches                                | 2.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Net Weight                                  | 0.11 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Terminals Description Iso N°2               | (L1-L2-L3)CO<br>(11-12-14)OC<br>(21-22-24)OC<br>ALT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## Environment

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electromagnetic Compatibility         | Electrostatic discharge - test level: 6 kV level 3 (contact discharge) conforming to IEC 61000-4-2<br>Electrostatic discharge - test level: 8 kV level 3 (air discharge) conforming to IEC 61000-4-2<br>Resistance to electrostatic discharge - test level: 6 kV (contact) conforming to IEC 61000-4-2 level 3<br>Resistance to electrostatic discharge - test level: 8 kV (air) conforming to IEC 61000-4-2 level 3 |
| Standards                             | EN/IEC 60255-6                                                                                                                                                                                                                                                                                                                                                                                                       |
| Product Certifications                | CSA<br>GL<br>UL                                                                                                                                                                                                                                                                                                                                                                                                      |
| Directives                            | 73/23/EEC - low voltage directive<br>89/336/EEC - electromagnetic compatibility                                                                                                                                                                                                                                                                                                                                      |
| Ambient Air Temperature For Storage   | -40...85 °C                                                                                                                                                                                                                                                                                                                                                                                                          |
| Ambient Air Temperature For Operation | -20...65 °C                                                                                                                                                                                                                                                                                                                                                                                                          |
| Relative Humidity                     | 15...85 % 3K3 conforming to IEC 60721-3-3                                                                                                                                                                                                                                                                                                                                                                            |
| Vibration Resistance                  | 0.35 ms (f= 10...55 Hz) conforming to IEC 60068-2-6                                                                                                                                                                                                                                                                                                                                                                  |
| Shock Resistance                      | 15 gn for 11 ms conforming to IEC 60068-2-27                                                                                                                                                                                                                                                                                                                                                                         |

|                                       |                                                                                                  |
|---------------------------------------|--------------------------------------------------------------------------------------------------|
| Ip Degree Of Protection               | IP20 (terminals) conforming to IEC 60529<br>IP50 (casing) conforming to IEC 60529                |
| Pollution Degree                      | 3 conforming to IEC 60664-1                                                                      |
| Dielectric Test Voltage               | 2.5 kV                                                                                           |
| Non-Dissipating Shock Wave            | 4.8 kV                                                                                           |
| Resistance To Electrostatic Discharge | 6 kV contact conforming to IEC 61000-4-2 level 3<br>8 kV air conforming to IEC 61000-4-2 level 3 |
| Resistance To Electromagnetic Fields  | 10 V/m conforming to IEC 61000-4-3 level 3                                                       |
| Resistance To Fast Transients         | 2 kV conforming to IEC 61000-4-4 level 3                                                         |
| Disturbance Radiated/Conducted        | CISPR 22 - class A<br>CISPR 11 group 1 - class A                                                 |

## Packing Units

|                              |     |
|------------------------------|-----|
| Unit Type Of Package 1       | PCE |
| Number Of Units In Package 1 | 1   |

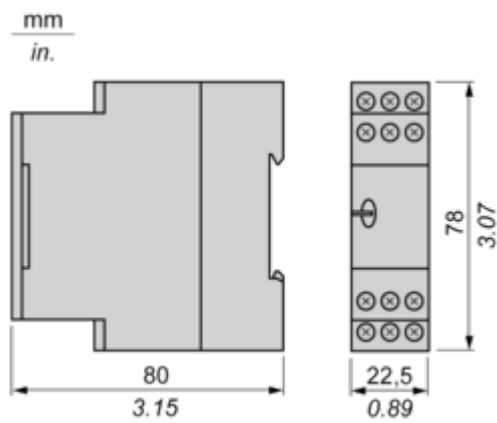
## Contractual warranty

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

Dimensions Drawings

3-phase Supply Control Relays

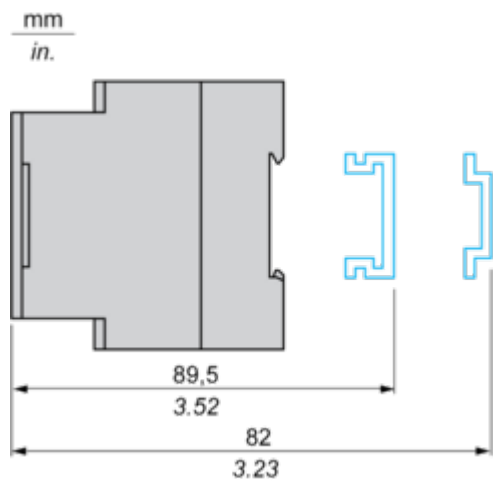
Dimensions



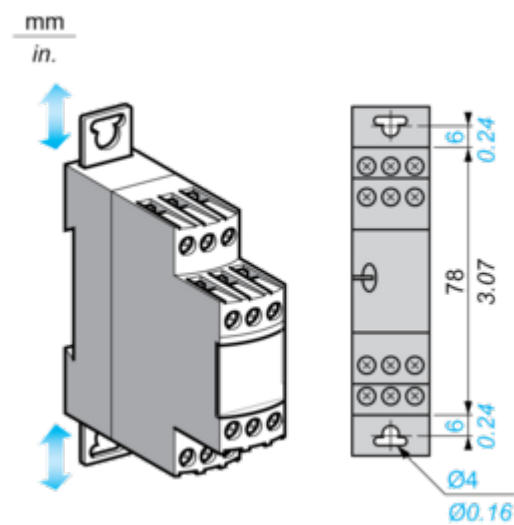
Mounting and Clearance

3-phase Supply Control Relays

Rail mounting



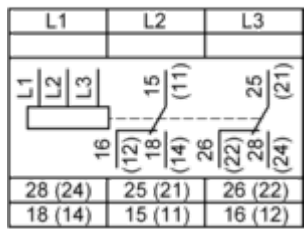
Screw fixing



Connections and Schema

3-Phase Supply Control Relays

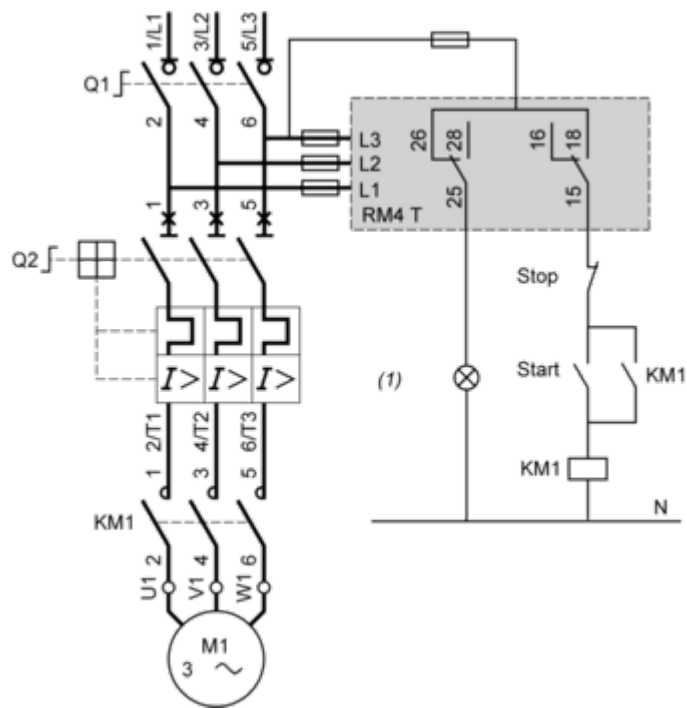
Wiring Diagram



L1, L2, L3 Supply to be monitored  
15(11)-18(14), 15(11)-16(12) 1st C/O contact of the output relay  
25(21)-28(24), 25(21)-26(22) 2nd C/O contact of the output relay

Application Scheme

Example



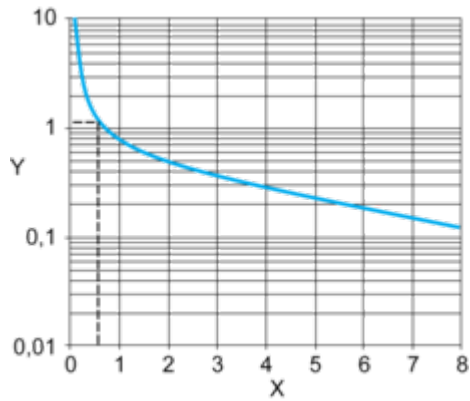
(1) Fault

Performance Curves

Electrical Durability and Load Limit Curves

AC Load

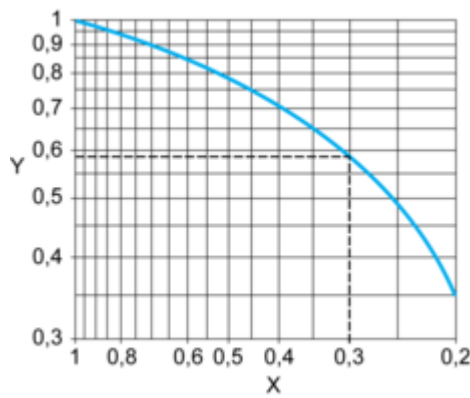
Curve 1: Electrical durability of contacts on resistive load in millions of operating cycles



X Current broken in A

Y Millions of operating cycles

Curve 2: Reduction factor k for inductive loads (applies to values taken from durability Curve 1)

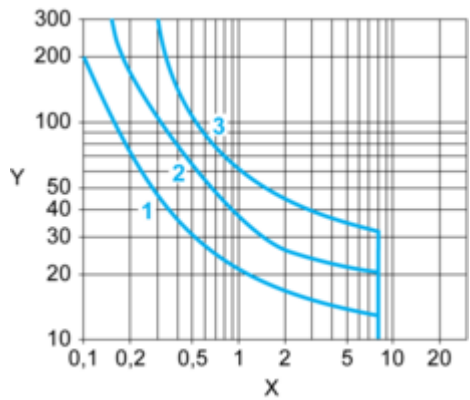


X Power factor on breaking (cos φ)

Y Reduction factor K

DC Load

Load limit curve



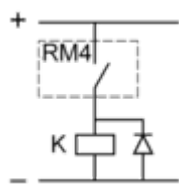
X Current in A

Y Voltage in V

1 L/R = 20 ms



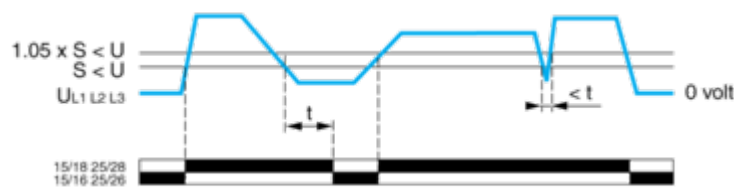
- 2 L/R with load protection diode
- 3 Resistive load



Technical Description

Function Diagram

Undervoltage Detection Only



Legend

- t Fixed time delay = 550 ms
- U 3-phase supply voltage monitored
- S Overvoltage or undervoltage setting
- 15/18, 15/16; 25/28, 25/26 Output relays connections
- Relay status: black color = energized.