

# RM4TU02

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

Product availability: Stock - Normally stocked in distribution facility

Price\*: 252.00 USD



### Main

|                               |                                                                     |
|-------------------------------|---------------------------------------------------------------------|
| Commercial Status             | Commercialised                                                      |
| Range of product              | Zelio Control                                                       |
| Product or component type     | Industrial measurement and control relays                           |
| Relay type                    | Control relay                                                       |
| Product specific application  | For 3-phase supply                                                  |
| Relay name                    | RM4-T                                                               |
| Relay monitored parameters    | Phase failure detection<br>Phase sequence<br>Undervoltage detection |
| Time delay type               | Without                                                             |
| Measurement range             | 290...484 V                                                         |
| Contacts type and composition | 2 C/O                                                               |
| Poles description             | 3P                                                                  |

### Complementary

|                                             |                                                                                                                             |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Control threshold undervoltage              | 300...430 V                                                                                                                 |
| Output contacts                             | 2 C/O                                                                                                                       |
| Setting accuracy of the switching threshold | +/-3 %                                                                                                                      |
| Switching threshold drift                   | <= 0.5 % within the measuring range<br><= 0.06 % per degree centigrade depending permissible ambient air temperature        |
| Setting accuracy of time delay              | 10 P                                                                                                                        |
| Time delay drift                            | <= 0.5 % within the measuring range<br><= 0.07 % per degree centigrade depending on the rated operational temperature       |
| Hysteresis                                  | 5 % fixed of de-energisation threshold                                                                                      |
| Run-up delay at power-up                    | < 650 ms                                                                                                                    |
| 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                                                                                                        |
| Connections - terminals                     | Screw terminals 2 x 2.5 mm², flexible cable without cable end<br>Screw terminals 2 x 1.5 mm², flexible cable with cable end |
| Tightening torque                           | 5.31...9.73 lbf.in (0.6...1.1 N.m)                                                                                          |
| Mechanical durability                       | <= 30000000 cycles                                                                                                          |
| [Ith] conventional free air thermal current | 8 A                                                                                                                         |

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [I <sub>e</sub> ] rated operational current | 0.3 A at 158 °F (70 °C) 115 V DC-13 conforming to VDE 0660<br>0.3 A at 158 °F (70 °C) 115 V DC-13 conforming to IEC 60947-5-1/1991<br>0.1 A at 158 °F (70 °C) 250 V DC-13 conforming to VDE 0660<br>0.1 A at 158 °F (70 °C) 250 V DC-13 conforming to IEC 60947-5-1/1991<br>3 A at 158 °F (70 °C) 250 V AC-15 conforming to VDE 0660<br>3 A at 158 °F (70 °C) 250 V AC-15 conforming to IEC 60947-5-1/1991<br>3 A at 158 °F (70 °C) 24 V AC-15 conforming to VDE 0660<br>3 A at 158 °F (70 °C) 24 V AC-15 conforming to IEC 60947-5-1/1991<br>3 A at 158 °F (70 °C) 115 V AC-15 conforming to VDE 0660<br>3 A at 158 °F (70 °C) 115 V AC-15 conforming to IEC 60947-5-1/1991<br>2 A at 158 °F (70 °C) 24 V DC-13 conforming to VDE 0660<br>2 A at 158 °F (70 °C) 24 V DC-13 conforming to IEC 60947-5-1/1991 |
| Switching capacity in mA                    | 10 mA at 12 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Switching voltage                           | 250 V AC<br>≤ 440 V AC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Contacts material                           | 90/10 silver nickel contacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Number of cables                            | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Height                                      | 3.07 in (78 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Width                                       | 0.89 in (22.5 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Depth                                       | 3.15 in (80 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Terminals description ISO n°1               | (15-16-18)OC<br>(25-26-28)OC<br>(L1-L2-L3)CO<br>ALT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Output relay state                          | Tripped, fault present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 9 mm pitches                                | 2.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Product weight                              | 0.24 lb(US) (0.11 kg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Terminals description ISO n°2               | (11-12-14)OC<br>(21-22-24)OC<br>(L1-L2-L3)CO<br>ALT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## Environment

|                                       |                                                                                                                                                                                                      |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electromagnetic compatibility         | Electrostatic discharge - test level 8 kV, level 3 - air discharge conforming to IEC 61000-4-2<br>Electrostatic discharge - test level 6 kV, level 3 - contact discharge conforming to IEC 61000-4-2 |
| Standards                             | EN/IEC 60255-6                                                                                                                                                                                       |
| Product certifications                | CSA<br>GL<br>UL                                                                                                                                                                                      |
| Directives                            | 89/336/EEC - electromagnetic compatibility<br>73/23/EEC - low voltage directive                                                                                                                      |
| Ambient air temperature for storage   | -40...185 °F (-40...85 °C)                                                                                                                                                                           |
| Ambient air temperature for operation | -4...149 °F (-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 11 ms conforming to IEC 60068-2-27                                                                                                                                                             |
| IP degree of protection               | IP50 (casing) conforming to IEC 60529<br>IP20(Terminals) 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 | 8 kV air conforming to IEC 61000-4-2 level 3<br>6 kV contact conforming to IEC 61000-4-2 level 3                                                                                                     |
| Resistance to electromagnetic fields  | 9.14 V/yd (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 11 group 1 - class A<br>CISPR 22 - class A                                                                                                                                                     |

### Ordering and shipping details

|                       |                                                   |
|-----------------------|---------------------------------------------------|
| Category              | 22376 - RELAYS-MEASUREMENT(RM4)                   |
| Discount Schedule     | CP2                                               |
| GTIN                  | 00785901689973                                    |
| Nbr. of units in pkg. | 1                                                 |
| Product availability  | Stock - Normally stocked in distribution facility |
| Returnability         | Y                                                 |
| Country of origin     | ID                                                |

### Contractual warranty

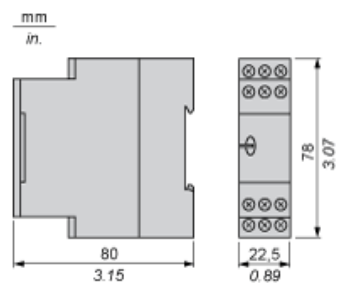
|                 |           |
|-----------------|-----------|
| Warranty period | 18 months |
|-----------------|-----------|

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3-phase Supply Control Relays

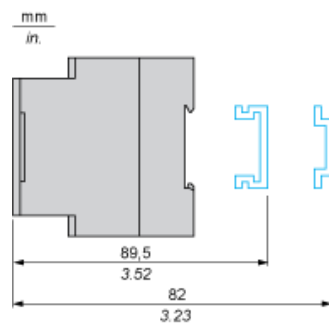
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Dimensions

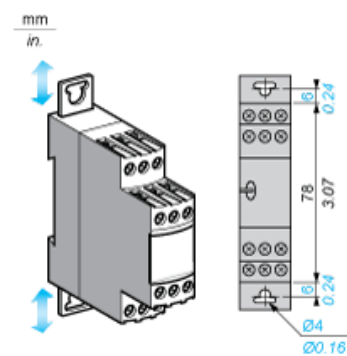


### 3-phase Supply Control Relays

#### Rail mounting



#### Screw fixing



## 3-Phase Supply Control Relays

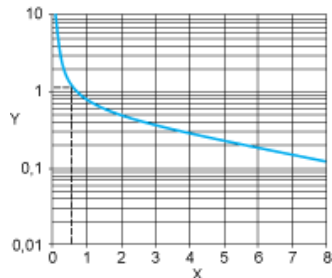
### Wiring Diagram

| L1        | L2        | L3        |
|-----------|-----------|-----------|
| 1 (11)    | 15 (11)   | 25 (21)   |
| 3 (13)    | 17 (13)   | 27 (23)   |
| 5 (15)    | 19 (15)   | 29 (25)   |
| 7 (17)    | 21 (17)   | 31 (27)   |
| 9 (19)    | 23 (19)   | 33 (29)   |
| 11 (21)   | 25 (21)   | 35 (31)   |
| 13 (23)   | 27 (23)   | 37 (33)   |
| 15 (25)   | 29 (25)   | 39 (35)   |
| 17 (27)   | 31 (27)   | 41 (37)   |
| 19 (29)   | 33 (29)   | 43 (39)   |
| 21 (31)   | 35 (31)   | 45 (41)   |
| 23 (33)   | 37 (33)   | 47 (43)   |
| 25 (35)   | 39 (35)   | 49 (45)   |
| 27 (37)   | 41 (37)   | 51 (47)   |
| 29 (39)   | 43 (39)   | 53 (49)   |
| 31 (41)   | 45 (41)   | 55 (51)   |
| 33 (43)   | 47 (43)   | 57 (53)   |
| 35 (45)   | 49 (45)   | 59 (55)   |
| 37 (47)   | 51 (47)   | 61 (57)   |
| 39 (49)   | 53 (49)   | 63 (59)   |
| 41 (51)   | 55 (51)   | 65 (61)   |
| 43 (53)   | 57 (53)   | 67 (63)   |
| 45 (55)   | 59 (55)   | 69 (65)   |
| 47 (57)   | 61 (57)   | 71 (67)   |
| 49 (59)   | 63 (59)   | 73 (69)   |
| 51 (61)   | 65 (61)   | 75 (71)   |
| 53 (63)   | 67 (63)   | 77 (73)   |
| 55 (65)   | 69 (65)   | 79 (75)   |
| 57 (67)   | 71 (67)   | 81 (77)   |
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| 63 (73)   | 77 (73)   | 87 (83)   |
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| 555 (565) | 569 (565) | 579 (575) |
| 557 (567) | 571 (567) | 581 (577) |
| 559 (569) | 573 (569) | 583 (579) |
| 561 (571) | 575 (571) | 585 (581) |
| 563 (573) | 577 (573) | 587 (583) |
| 565 (575) | 579 (575) | 589 (585) |
| 567 (577) | 581 (577) | 591 (587) |
| 569 (579) | 583 (579) | 593 (589) |
| 571 (581) | 585 (581) | 595 (591) |
| 573 (583) | 587 (583) | 597 (593) |
| 575 (585) | 589 (585) | 599 (595) |
| 577 (587) | 591 (587) | 601 (597) |
| 579 (589) | 593 (589) | 603 (599) |
| 581 (591) | 595 (591) | 605 (601) |
| 583 (593) | 597 (593) | 607 (603) |
| 585 (595) | 599 (595) | 609 (605) |
| 587 (597) | 601 (597) | 611 (607) |
| 589 (599) | 603 (599) | 613 (609) |
| 591 (601) | 605 (601) | 61        |

## Electrical Durability and Load Limit Curves

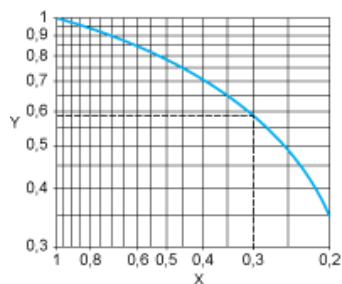
### AC Load

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



X Current broken in A  
Y Millions of operating cycles

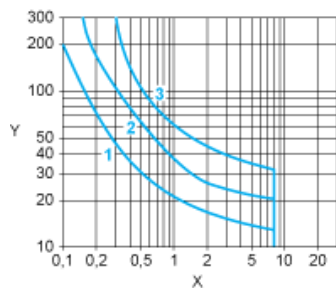
Curve 2: Reduction factor k for inductive loads (applies to values taken from durability Curve 1)



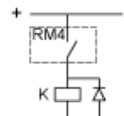
X Power factor on breaking ( $\cos \phi$ )  
Y Reduction factor K

### 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

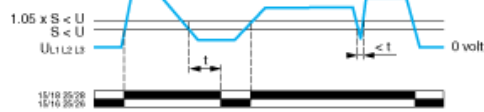


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## Function Diagram

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### 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.