# Product data sheet
## Characteristics

# RM35TF30
## Harmony, Modular multifunction 3-phase supply control relay, 5 A, 2 CO, 220...480 V AC

## Main

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|---|---|
| Range of product | Harmony Control Relays |
| Product or component type | 3-phase control relay |
| Relay type | Multifunction control relay |
| Product specific application | For 3-phase supply |
| Relay name | RM35TF |
| Relay monitored parameters | Undervoltage and overvoltage in window mode<br>Phase sequence<br>Phase failure detection<br>Asymmetry |
| Time delay | Adjustable 0.1...10 s, +/- 10 % of the full scale value |
| Switching capacity in VA | 1250 VA |
| Measurement range | 220...480 V voltage AC |
| Contacts type and composition | 2 C/O |
| [Uc] control circuit voltage | 220...480 V |

## Complementary

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|---|---|
| Reset time | 1500 ms at 480 V |
| Maximum switching voltage | 250 V AC<br>250 V DC |
| Minimum switching current | 10 mA at 5 V DC |
| Maximum switching current | 5 A AC<br>5 A DC |
| Supply voltage limits | 194…528 V AC, 3 phases |
| Control circuit voltage limits | - 12 % + 10 % Un |
| Power consumption in VA | 0…22 VA at 400 V AC 50 Hz |
| Voltage detection threshold | < 194 V |
| Control circuit frequency | 50...60 Hz +/- 10 % |
| Output contacts | 2 C/O |
| Nominal output current | 5 A |
| Measurement voltage limits | 176…528 V AC |
| Hysteresis | 2 % |
| Delay at power up | 650 ms |
| Maximum measuring cycle | 140 ms measurement cycle as true rms value |
| Threshold adjustment voltage | -20...-2 % in the range 380...480 V AC<br>2...20 % of Un selected<br>-12...-2 % in the range 220 V AC<br>+2...+20 % in the range 220...440 V AC<br>+2...+10 % in the range 480 V AC |
| Voltage range | 220...480 V phase to phase |
| Adjustment of asymmetry threshold | 5...15 % of Un selected |
| Repeat accuracy | 0.3 % for time delay<br>0.5 % for input and measurement circuit |
| Measurement error | < 1 % over the whole range with voltage variation<br>0.05 %/°C with temperature variation |
| Response time | < 200 ms (in the event of a fault) |
| Marking | CE |

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|---|---|
| Overvoltage category | III conforming to IEC 60664-1 |
| Insulation resistance | > 500 MOhm at 500 V DC conforming to IEC 60255-5<br>> 500 MOhm at 500 V DC conforming to IEC 60664-1 |
| [Ui] rated insulation voltage | 400 V conforming to IEC 60664-1 |
| Supply frequency | 50/60 Hz +/- 10 % |
| 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 | 0.6…1 N.m conforming to IEC 60947-1 |
| Housing material | Self-extinguishing plastic |
| Local signalling | LED (green) for power ON<br>LED (yellow) for relay ON<br>LED (yellow) for fault |
| Mounting support | 35 mm symmetrical DIN rail conforming to EN/IEC 60715 |
| Electrical durability | 100000 cycles |
| Mechanical durability | 30000000 cycles |
| Operating rate | <= 360 operations/hour full load |
| Utilisation category | AC-12 conforming to IEC 60947-5-1<br>AC-13 conforming to IEC 60947-5-1<br>AC-14 conforming to IEC 60947-5-1<br>AC-15 conforming to IEC 60947-5-1<br>DC-12 conforming to IEC 60947-5-1<br>DC-13 conforming to IEC 60947-5-1 |
| Safety reliability data | MTTFd = 399.5 years<br>B10d = 360000 |
| Width | 35 mm |
| Net weight | 0.13 kg |

## Environment

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|---|---|
| Electromagnetic compatibility | Emission standard for industrial environments conforming to EN/IEC 61000-6-4<br>Emission standard for residential, commercial and light-industrial environments conforming to EN/IEC 61000-6-3<br>Immunity for industrial environments conforming to EN/IEC 61000-6-2 |
| Standards | EN/IEC 60255-1 |
| Product certifications | GL<br>UL<br>CSA<br>GOST<br>C-Tick |
| Directives | 89/336/EEC - electromagnetic compatibility<br>73/23/EEC - low voltage directive |
| Ambient air temperature for storage | -40…70 °C |
| Ambient air temperature for operation | -20…50 °C |
| Relative humidity | 95 % at 55 °C conforming to IEC 60068-2-30 |
| Vibration resistance | 0.35 mm (f= 5…57.6 Hz) conforming to IEC 60068-2-6<br>1 gn (f= 57.6…150 Hz) conforming to IEC 60255-21-1 |
| Shock resistance | 15 gn for 11 ms conforming to IEC 60255-21-1 |
| IP degree of protection | IP20 (terminals) conforming to IEC 60529<br>IP30 (casing) conforming to IEC 60529 |
| Pollution degree | 3 conforming to IEC 60664-1 |
| Dielectric test voltage | 2 kV, 1 min AC 50 Hz |
| Non-dissipating shock wave | 4 kV |

## Packing Units

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|---|---|
| Unit Type of Package 1 | PCE |
| Number of Units in Package 1 | 1 |
| Package 1 Weight | 130 g |
| Package 1 Height | 4.8 cm |
| Package 1 width | 7.8 cm |

| | |
|---|---|
| Package 1 Length | 9.7 cm |
| Unit Type of Package 2 | S03 |
| Number of Units in Package 2 | 48 |
| Package 2 Weight | 6.827 kg |
| Package 2 Height | 30 cm |
| Package 2 width | 30 cm |
| Package 2 Length | 40 cm |
| Unit Type of Package 3 | P06 |
| Number of Units in Package 3 | 384 |
| Package 3 Weight | 64.124 kg |
| Package 3 Height | 77 cm |
| Package 3 width | 80 cm |
| Package 3 Length | 60 cm |

## Offer Sustainability

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|---|---|
| Sustainable offer status | Green Premium product |
| REACh Regulation | REACh Declaration |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope) EU RoHS Declaration |
| Mercury free | Yes |
| RoHS exemption information | Yes |
| China RoHS Regulation | China RoHS Declaration |
| Environmental Disclosure | Product Environmental Profile |
| Circularity Profile | End Of Life Information |

## Contractual warranty

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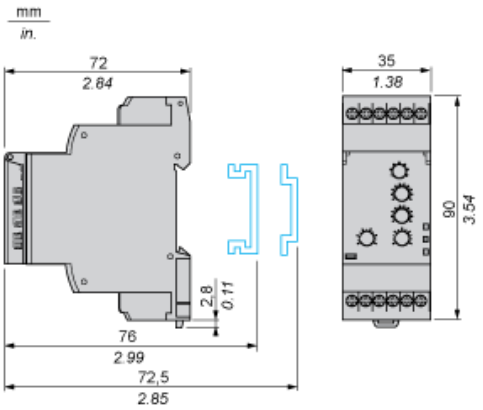
|---|---|
| Warranty | 18 months |

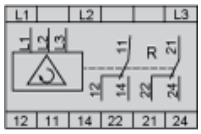
## Multifunction 3-Phase Supply Control Relays

### Dimensions and Mounting



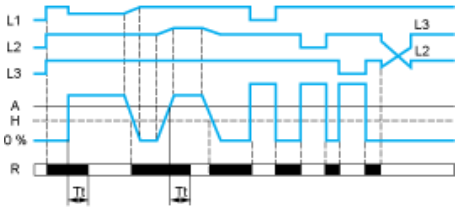
## Multifunction 3-Phase Supply Control Relays

### Wiring Diagram

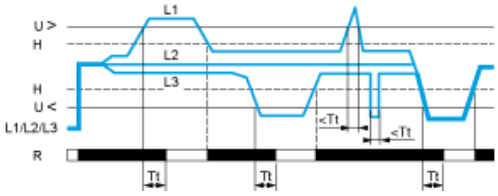


## Function Diagrams

### Phase Sequence Control, Phase Failure Detection (U measured < 0.7 x nominal supply voltage) and Asymmetry Detection




### Control of Overvoltage and Undervoltage in Window Mode




### Legend

A Asymmetry thershold
Tt Time delay after crossing of threshold
H Hysteresis
U> Overvoltage threshold
U< Undervoltage threshold
L1, L2, L3 Phases of the supply voltage monitored
R Output relay
Relay status: black color = energized.