

# Product datasheet

Specifications



## three-phase network control relay RM4-T - range 360 V

RM4TR34

⚠ Discontinued on: 24 June 2016

⚠ End-of-service on: 31 Dec 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 failure detection Overvoltage and undervoltage detection Phase sequence
time delay	Adjustable 0.1...10 s
Output contacts	2 C/O
Contacts type and composition	2 C/O
Poles description	3P

### Complementary

[Ie] rated operational current	2 A at 70 °C 24 V DC-13 conforming to IEC 60947-5-1/1991 2 A at 70 °C 24 V DC-13 conforming to VDE 0660 3 A at 70 °C 115 V AC-15 conforming to IEC 60947-5-1/1991 3 A at 70 °C 115 V AC-15 conforming to VDE 0660 3 A at 70 °C 24 V AC-15 conforming to IEC 60947-5-1/1991 3 A at 70 °C 24 V AC-15 conforming to VDE 0660 3 A at 70 °C 250 V AC-15 conforming to IEC 60947-5-1/1991 3 A at 70 °C 250 V AC-15 conforming to VDE 0660 0.1 A at 70 °C 250 V DC-13 conforming to IEC 60947-5-1/1991 0.1 A at 70 °C 250 V DC-13 conforming to VDE 0660 0.3 A at 70 °C 115 V DC-13 conforming to IEC 60947-5-1/1991 0.3 A at 70 °C 115 V DC-13 conforming to VDE 0660
Maximum switching voltage	440 V AC
Control threshold overvoltage	440 V
Setting accuracy of the switching threshold	+/-3 %
Switching threshold drift	<= 0.06 % per degree centigrade depending permissible ambient air temperature <= 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 <= 0.5 % within the measuring range
Hysteresis	5 % fixed of de-energisation threshold
delay at power up	650 ms
Maximum measuring cycle	80 ms

<b>[Ui] rated insulation voltage</b>	500 V conforming to IEC
<b>Supply frequency</b>	50/60 Hz +/- 5 %
<b>Operating position</b>	Any position without derating
<b>Connections - terminals</b>	Screw terminals, 2 x 1.5 mm <sup>2</sup> flexible with cable end Screw terminals, 2 x 2.5 mm <sup>2</sup> flexible without cable end
<b>Tightening torque</b>	0.6...1.1 N.m
<b>Mechanical durability</b>	30000000 cycles
<b>[Ith] conventional free air thermal current</b>	8 A
<b>Switching capacity in mA</b>	10 mA at 12 V
<b>Switching voltage</b>	250 V AC
<b>Contacts material</b>	90/10 silver nickel contacts
<b>Number of cables</b>	2
<b>Height</b>	78 mm
<b>Width</b>	22.5 mm
<b>Depth</b>	80 mm
<b>Terminals description ISO n°1</b>	(15-16-18)OC (25-26-28)OC (L1-L2-L3)CO
<b>Output relay state</b>	Tripped, fault present
<b>9 mm pitches</b>	2.5
<b>Net weight</b>	0.11 kg

## Environment

<b>Electromagnetic compatibility</b>	Electrostatic discharge - test level: 6 kV level 3 (contact discharge) conforming to IEC 61000-4-2 Electrostatic discharge - test level: 8 kV level 3 (air discharge) conforming to IEC 61000-4-2 Resistance to electrostatic discharge - test level: 6 kV (contact) conforming to IEC 61000-4-2 level 3 Resistance to electrostatic discharge - test level: 8 kV (air) conforming to IEC 61000-4-2 level 3
<b>Standards</b>	EN/IEC 60255-6
<b>Product certifications</b>	UL GL CSA
<b>Marking</b>	CE
<b>Directives</b>	73/23/EEC - low voltage directive 89/336/EEC - electromagnetic compatibility
<b>Ambient air temperature for storage</b>	-40...85 °C
<b>Ambient air temperature for operation</b>	-20...65 °C
<b>Relative humidity</b>	15...85 % 3K3 conforming to IEC 60721-3-3
<b>Vibration resistance</b>	0.35 ms (f= 10...55 Hz) conforming to IEC 60068-2-6
<b>Shock resistance</b>	15 gn for 11 ms conforming to IEC 60068-2-27
<b>IP degree of protection</b>	IP20 (terminals) conforming to IEC 60529 IP50 (casing) conforming to IEC 60529
<b>Pollution degree</b>	3 conforming to IEC 60664-1
<b>Overvoltage category</b>	III conforming to IEC 60664-1

<b>Dielectric test voltage</b>	2.5 kV
<b>Non-dissipating shock wave</b>	4.8 kV
<b>Resistance to electrostatic discharge</b>	6 kV contact conforming to IEC 61000-4-2 level 3 8 kV air conforming to IEC 61000-4-2 level 3
<b>Resistance to electromagnetic fields</b>	10 V/m conforming to IEC 61000-4-3 level 3
<b>Resistance to fast transients</b>	2 kV conforming to IEC 61000-4-4 level 3
<b>Disturbance radiated/conducted</b>	CISPR 11 group 1 - class A CISPR 22 - class A

## Packing Units

<b>Unit Type of Package 1</b>	PCE
<b>Number of Units in Package 1</b>	1

## Contractual warranty

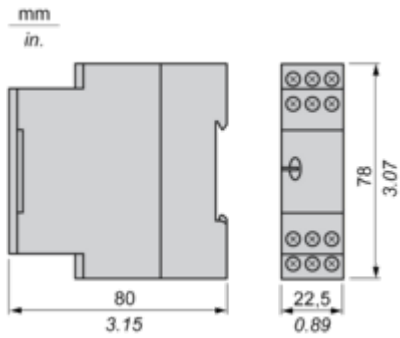
<b>Warranty</b>	18 months
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## Dimensions Drawings

### 3-phase Supply Control Relays

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#### Dimensions

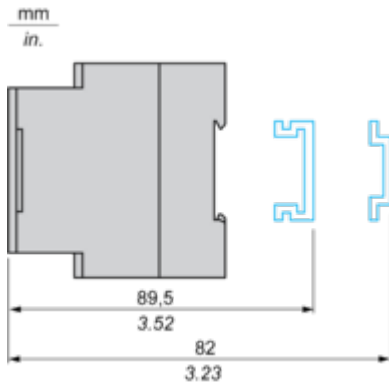


Mounting and Clearance

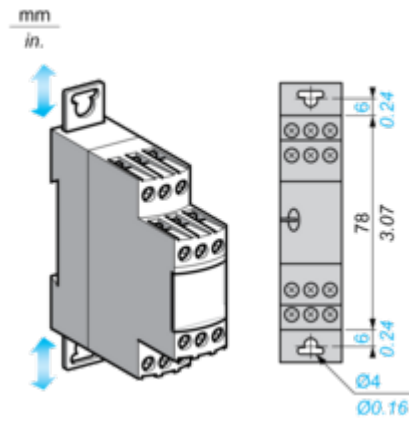
3-phase Supply Control Relays

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Rail mounting



Screw fixing

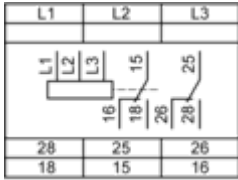


## Connections and Schema

### 3-Phase Supply Control Relays

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#### Wiring Diagram



L1, L2, L3 Supply to be monitored

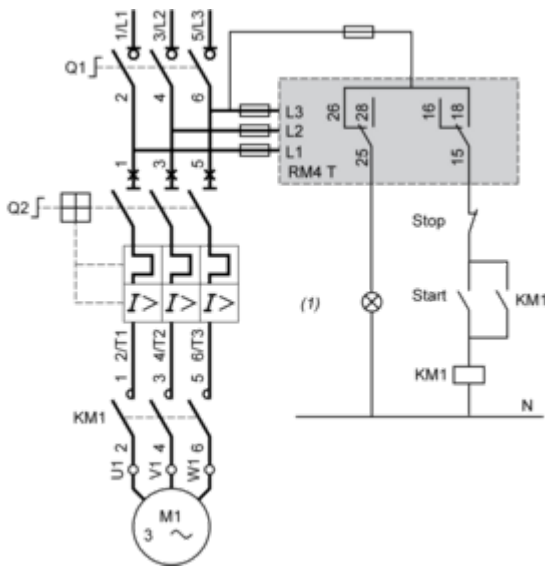
15-18, 15-16 1st C/O contact of the output relay

25-28, 25-26 2nd C/O contact of the output relay

Application Scheme

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Example



(1) Fault

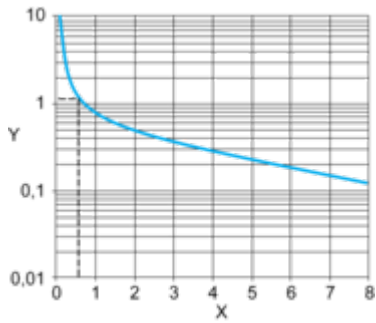
Performance Curves

**Electrical Durability and Load Limit Curves**

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**AC Load**

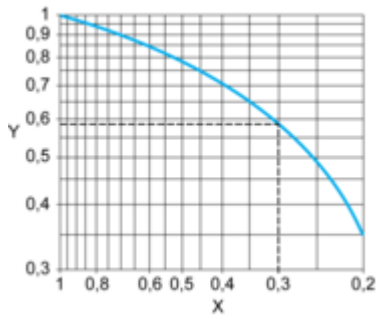
Curve 1: Electrical durability of contacts on resistive load in millions of operating cycles



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)

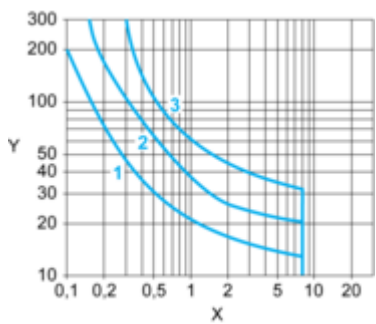


X Power factor on breaking (cos φ)

Y Reduction factor K

**DC Load**

Load limit curve



X Current in A

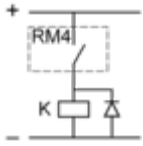
Y Voltage in V

1 L/R = 20 ms

2 L/R with load protection diode

3 Resistive load



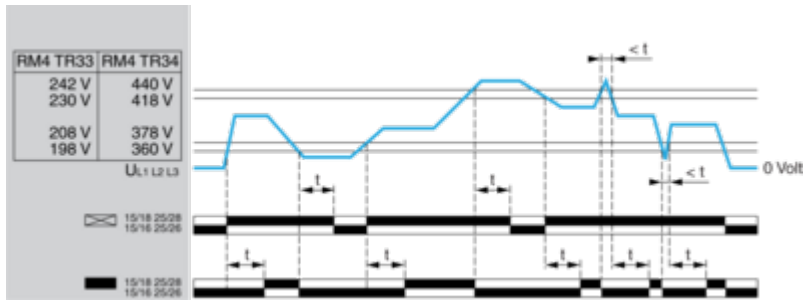


Technical Description

Function Diagram

Overvoltage and Undervoltage Detection

Functions "Fault detection delayed" or "Fault detection extended" (by switch selector)



Legend

t Time delay

U 3-phase supply voltage monitored

15/18, 15/16; 25/28, 25/26 Output relays connections

Relay status: black color = energized.