

Product datasheet

Specifications



three-phase network control relay RM4-T - range 380..500 V

RM4TA32

⚠ Discontinued on: 2 Apr 2021

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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 Phase failure detection Asymmetry
time delay	Adjustable 0.1...10 s
Contacts type and composition	2 C/O
Poles description	3P

Complementary

Maximum switching voltage	440 V AC
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 <= 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	50 % fixed of asymmetry percentage
delay at power up	650 ms
Maximum measuring cycle	80 ms
Adjustment of asymmetry threshold	5...15 %
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 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 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
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	(25-26-28)OC (L1-L2-L3)CO (15-16-18)OC
Output relay state	Tripped, fault present
9 mm pitches	2.5
Product weight	0.11 kg
Time delay on de-energisation	0.1...10 s

Environment

Electromagnetic compatibility	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
Standards	EN/IEC 60255-6
Product certifications	UL CSA GL
Directives	73/23/EEC - low voltage directive 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 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 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 CISPR 11 group 1 - class A

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1

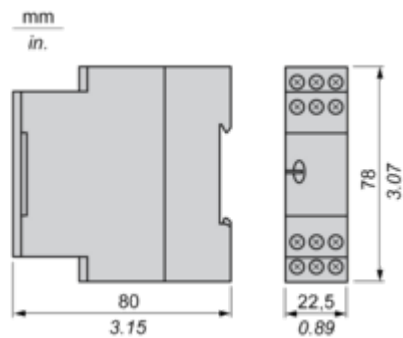
Contractual warranty

Warranty	18 months
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Dimensions Drawings

3-phase Supply Control Relays

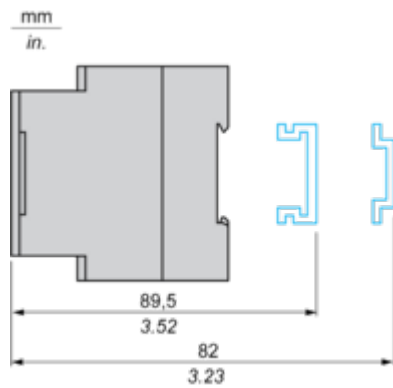
Dimensions



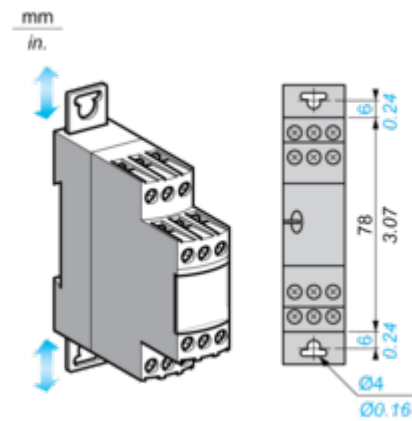
Mounting and Clearance

3-phase Supply Control Relays

Rail mounting



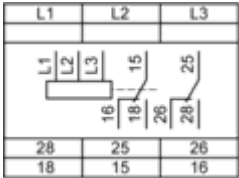
Screw fixing



Connections and Schema

3-Phase Supply Control Relays

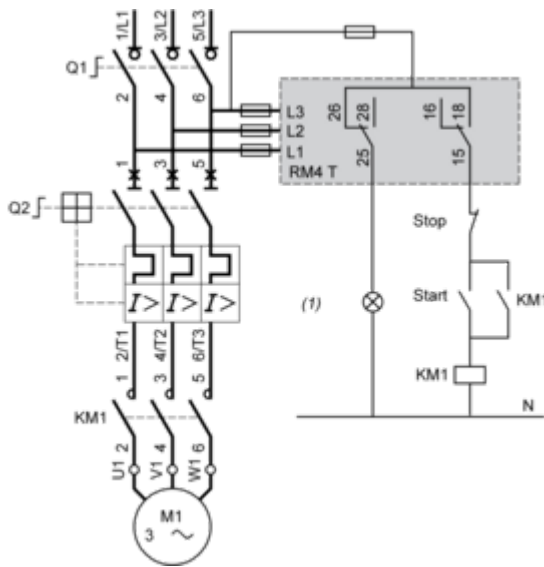
Wiring Diagram



L1, L2, L3 Supply to be monitored
15-18, 15-16 1st C/O contact of the output relay
25-28, 25-26 2nd C/O contact of the output relay

Application Scheme

Example



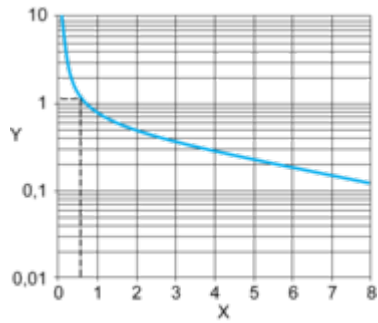
(1) Fault

Performance Curves

Electrical Durability and Load Limit Curves

AC Load

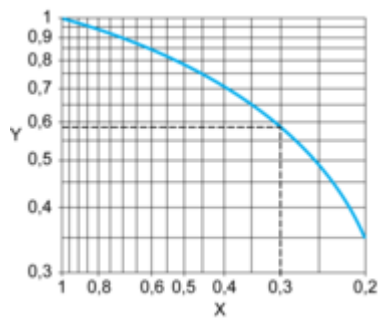
Curve 1: Electrical durability of contacts on resistive load in millions of operating cycles



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)

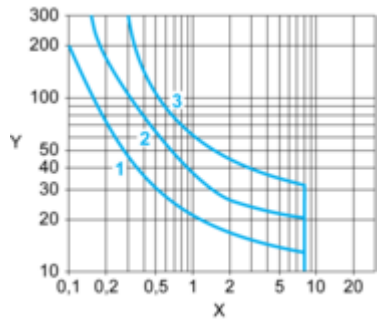


X Power factor on breaking ($\cos \varphi$)

Y Reduction factor K

DC Load

Load limit curve



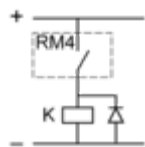
X Current in A

Y Voltage in V

1 L/R = 20 ms

2 L/R with load protection diode

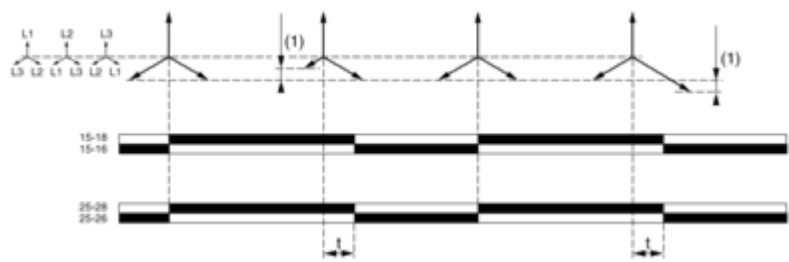
3 Resistive load



Technical Description

Function Diagram

Detection of Phase Asymmetry



Legend

- t Time delay
- (1) Asymmetry > set threshold
- 15/18, 15/16; 25/28, 25/26 Output relays connections
- Relay status: black color = energized.