

Product datasheet

Specifications



three-phase network control relay RM4-T - range 200..240 V

RM4TA31

⚠ Discontinued on: 24 June 2016

⚠ End-of-service on: 11 May 2022

⚠ 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 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 (15-16-18)OC (L1-L2-L3)CO
Output Relay State	Tripped, fault present
9 Mm Pitches	2.5
Net 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	GL CSA UL
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 11 group 1 - class A CISPR 22 - class A

Packing Units

Unit Type Of Package 1	PCE
Number Of Units In Package 1	1
Package 1 Height	2.7 cm
Package 1 Width	8.2 cm
Package 1 Length	8.5 cm
Package 1 Weight	132 g

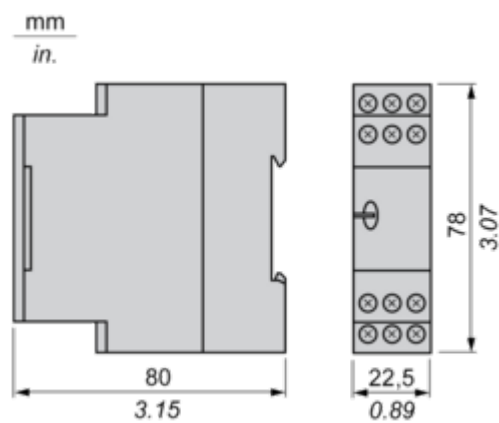
Contractual warranty

Warranty	18 months
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Dimensions Drawings

3-phase Supply Control Relays

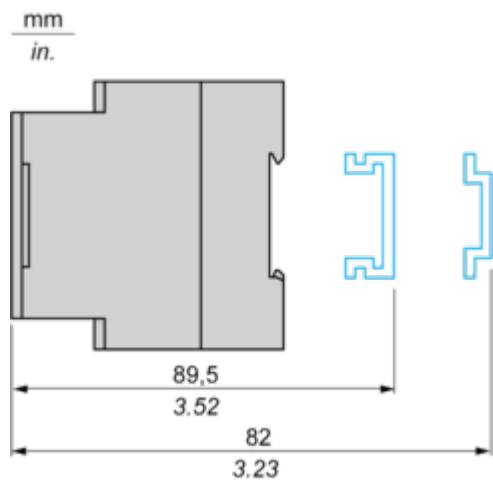
Dimensions



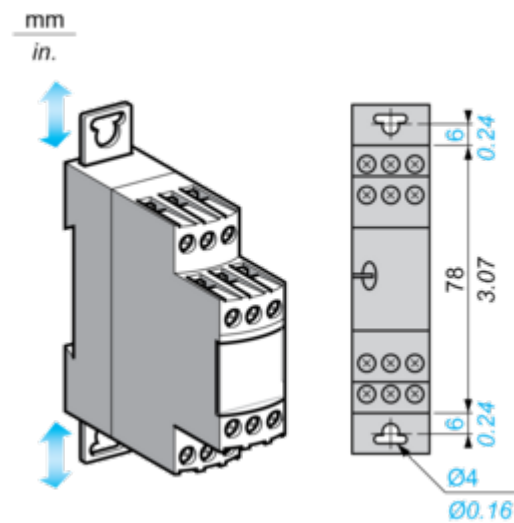
Mounting and Clearance

3-phase Supply Control Relays

Rail mounting



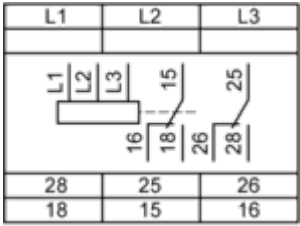
Screw fixing



Connections and Schema

3-Phase Supply Control Relays

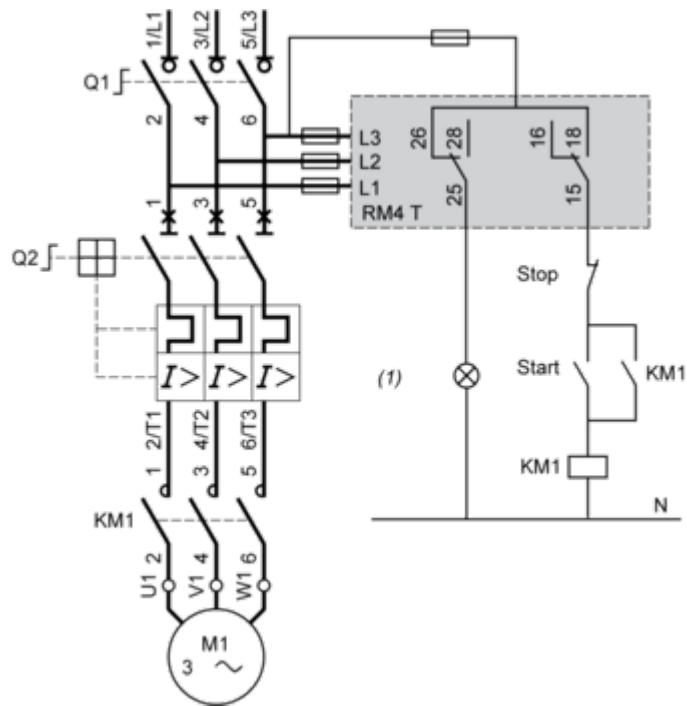
Wiring Diagram



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



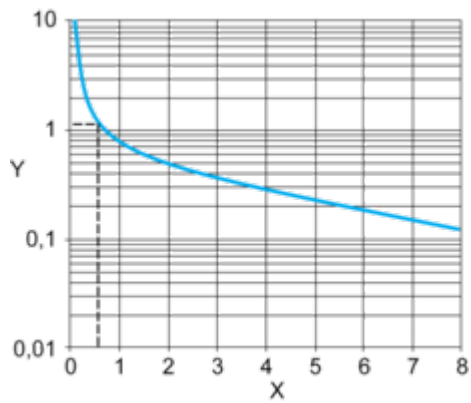
(1) Fault

Performance Curves

Electrical Durability and Load Limit Curves

AC Load

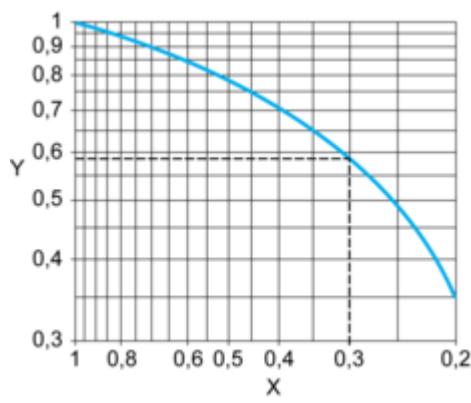
Curve 1: Electrical durability of contacts on resistive load in millions of operating cycles



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)

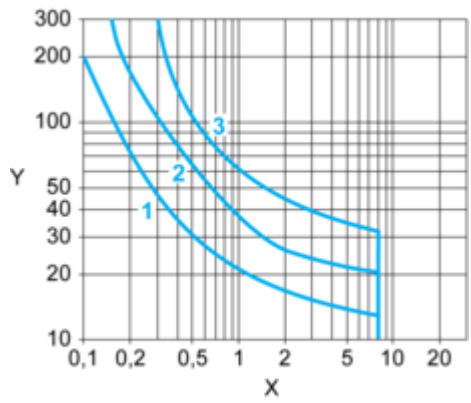


X Power factor on breaking (cos φ)

Y Reduction factor K

DC Load

Load limit curve

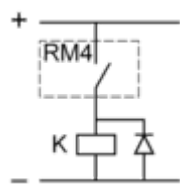


X Current in A

Y Voltage in V

1 L/R = 20 ms

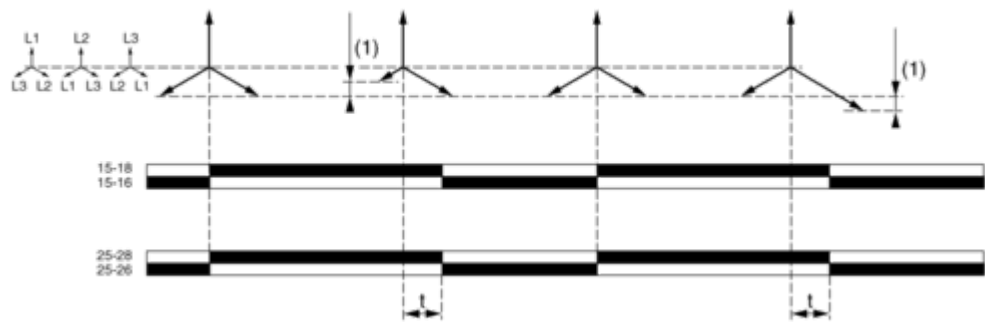
- 2 L/R with load protection diode
- 3 Resistive load



Technical Description

Function Diagram

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.