Product data sheet
Characteristics

RM35TM250MW
motor voltage and temperature control relay - RM35-T - 24..240 V AC/DC - 2 NO

Main

Range of product	Zelio Control
Product or component type	Modular measurement and control relays
Relay type	Motor temperature control relay
Product specific application	For 3-phase supply
Relay name	RM35TM
Relay monitored parameters	Motor temperature via PTC probe Phase failure detection Phase sequence Selection (with or without memory) Test/Reset button
Time delay	Fixed 0.3 s
Switching capacity in VA	1250 VA
Measurement range	0...20 Ohm short-circuit detection 208...480 V voltage AC

Complementary

Reset time	10000 ms for output
Maximum switching voltage	250 V DC 250 V AC
Minimum switching current	10 mA at 5 V DC
Maximum switching current	5 A DC 5 A AC
Supply voltage limits	20.4...264 V DC 20.4...264 V AC
Power consumption in VA	<= 4 VA AC
Power consumption	<= 0.5 W DC
Control circuit frequency	50...60 Hz +/- 10 %
Resistance across terminals	602 mOhm
Output contacts	2 NO
Nominal output current	5 A
Measurement voltage limits	176...528 V AC
Delay at power up	<= 500 ms
Voltage range	176...528 V
Response time	> 50 ms input Y1 (contact Y1-T1) and push-button
Control circuit voltage	<= 3.6 V of temperature control circuit (T1-T2 terminals open)
Short-circuit current	0.007 A temperature sensing circuit (T1-T2 terminals short circuited)
Resistance	<= 1500 Ohm for temperature sensor at 20 °C
Tripping threshold	3100 Ohm (+/- 10 % for temperature control circuit)
Reset threshold	1650 Ohm (+/- 10 % for temperature control circuit)
Marking	CE
Overvoltage category	III conforming to IEC 60664-1

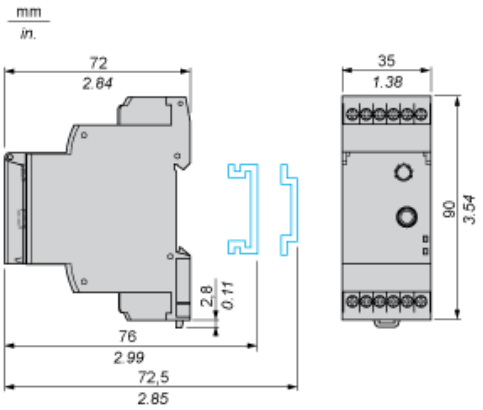
Insulation resistance	> 1 MOhm at 500 V DC between supply and measurement conforming to IEC 60664-1 > 500 MOhm at 500 V DC between measurement and relay output conforming to IEC 60255-5 > 500 MOhm at 500 V DC between supply and relay output conforming to IEC 60664-1 > 1 MOhm at 500 V DC between supply and measurement conforming to IEC 60255-5 > 500 MOhm at 500 V DC between measurement and relay output conforming to IEC 60664-1 > 500 MOhm at 500 V DC between supply and relay output conforming to IEC 60255-5
[Ui] rated insulation voltage	400 V conforming to IEC 60664-1
Supply frequency	50/60 Hz +/- 10 %
Operating position	Any position without
Connections - terminals	Screw terminals 2 x 0.2...2 x 1.5 mm² - AWG 24...AWG 16, flexible cable with cable end Screw terminals 1 x 0.2...1 x 2.5 mm² - AWG 24...AWG 12, flexible cable with cable end Screw terminals 2 x 0.5...2 x 2.5 mm² - AWG 20...AWG 14, solid cable without cable end Screw terminals 1 x 0.5...1 x 4 mm² - AWG 20...AWG 11, solid cable without cable end
Tightening torque	0.6...1 N.m conforming to IEC 60947-1
Housing material	Self-extinguishing plastic
Local signalling	LED yellow for temperature of relay (R1) LED yellow for phase of relay (R2) LED green for power ON
Mounting support	35 mm symmetrical DIN rail conforming to EN/IEC 60715
Electrical durability	10000 cycles
Mechanical durability	<= 30000000 cycles
Operating rate	<= 360 operations/hour under full load
Utilisation category	DC-13 conforming to IEC 60947-5-1 DC-12 conforming to IEC 60947-5-1 AC-15 conforming to IEC 60947-5-1 AC-14 conforming to IEC 60947-5-1 AC-13 conforming to IEC 60947-5-1 AC-12 conforming to IEC 60947-5-1
Width	35 mm
Product weight	0.13 kg

Environment

Immunity to microbreaks	20 ms at 20.4 V
Electromagnetic compatibility	Immunity for industrial environments conforming to EN/IEC 61000-6-2 Emission standard for residential, commercial and light-industrial environments conforming to EN/IEC 61000-6-3 Emission standard for industrial environments conforming to EN/IEC 61000-6-4
Standards	EN/IEC 60255-6 IEC 60034-11-2
Product certifications	CSA C-Tick GL GOST UL
Directives	89/336/EEC - electromagnetic compatibility 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	1 gn (f = 57.6...150 Hz) conforming to IEC 60255-21-1 0.35 mm (f = 5...57.6 Hz) conforming to IEC 60068-2-6
Shock resistance	15 gn for 11 ms conforming to IEC 60255-21-1
IP degree of protection	IP30 (casing) conforming to IEC 60529 IP20 (terminals) 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

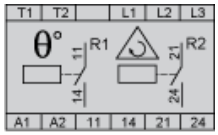
3-Phase Supply and Motor Temperature Control Relays

Dimensions and Mounting



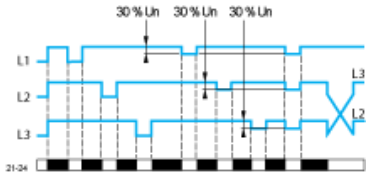
3-Phase Supply and Motor Temperature Control Relays

Wiring Diagram

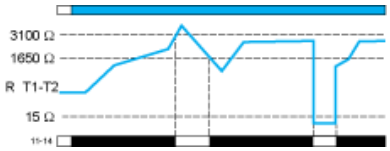


Function Diagrams

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



Motor Temperature Control via PTC Probe



Legend

Un Nominal 3-phase supply voltage

R T1-T2 Resistance between terminals T1 and T2

11-14 R1 output relay connections

Relay status: black color = energized.

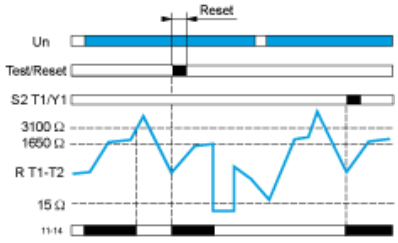
NOTE: The temperature control relay can take up to 6 PTC (positive temperature coefficient) probes wired in series between terminals T1 and T2.

Function Diagrams

Motor Temperature Control via PTC Probe

As soon as the temperature returns to the correct value, the relay can be unlocked (reset), either by pressing the “Test/Reset” button (for at least 200 ms), or by closing a volt-free contact (for at least 200 ms) between terminal Y1 and T1 (without a parallel load). When a fault is detected, the “temperature” output relay locks in the open position, even if the “Test/Reset” button is pressed.

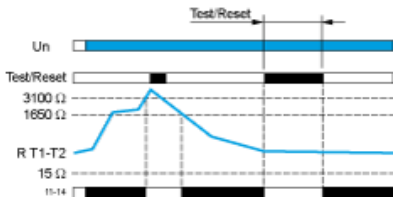
With memory ("Memory" mode)



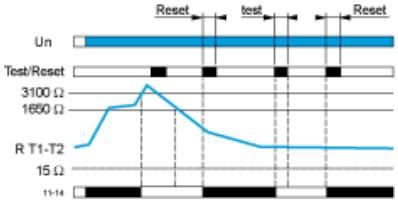
Use of the “Test/Reset” Button

When the temperature is normal, pressing the “Test/Reset” button simulates overheating, the “temperature” output relay contact is open.

Without memory ("No Memory" mode).



With memory ("Memory" mode)



Legend

Un Nominal 3-phase supply voltage

R T1-T2 Resistance between terminals T1 and T2

11-14 R1 output relay connections

Relay status: black color = energized.

In "Memory" mode, “fault” indication is locked and the button must be released then pressed again to reset the function. When a fault has been detected and the temperature has returned to normal, the “temperature” control relay can be unlocked (reset) by pressing the “Test/Reset” button.