



- Temperature Monitoring Relay of the motor winding
- Up to 6 PTC thermistor sensors
- Overheat detection
- Short circuit monitoring of the PTC line
- Supply voltage 48VAC or 24VACDC
- In accordance with PN-EN 60730-1, PN-EN 60947-8A



### Technical Data

#### Output circuit

Contact arrangement		1CO
Rated/max contact voltage	V AC	250/400
Switching current $I_n$ in category	AC1	A/V AC
	DC1	A/V DC
Switching load range AC1	VA	2 000
Contact resistance	mΩ	≤ 100
Maximum rated current	A	8

#### Input circuit

Input contacts		A1, A2, A3
Rated supply voltage $U_n$	V	A1-A2: 48VAC (50/60Hz) A1-A3: 24VACDC (50/60Hz)
Supply voltage tolerance		
▪ supply 48VAC		0,8...1,15 $U_n$ (38,4...55,2V)
▪ supply 24VACDC		0,85...1,2 $U_n$ (20,4...28,8V)
Rated consumption		
▪ supply 48VAC	VA	≤ 1
▪ supply 24VDC	W	≤ 0,5W
Rated frequency AC	Hz	47...63
Rated surge voltage	V	1 000
Burst voltage	V	2 000

#### Insulation

Insulation rated voltage	V AC	250
Rated surge voltage	V	4 000 1,2/50μs
Overvoltage category		III
Pollution degree		2
Flammability		pcb: V0, housing: HB
Dielectric strength		
▪ input - output	V AC	4 000
▪ open contact		1 000

#### Measurement circuit

Response value > $T_{max}$	Ω	> 3300
Release value	Ω	110 < R < 1800
Max PTC resistance in when cold	Ω	1500
PTC short circuit resistance	Ω	< 70
PTC galvanic isolation		no
Tolerance	%	5
PTC sensors type		PTC, Sign A

#### Delay circuit

ON/OFF delay	s	~ 0,5
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#### General data

Electrical life AC1 at 1000 VA resistive load	cycles	≥ 1,5 x 10 <sup>5</sup>
Mechanical life	cycles	≥ 1 x 10 <sup>7</sup>
Dimensions (a x b x h) / Weight	mm / g	90 x 17,5 x 66 / 52
Storage / ambient temperature	°C	-40...+70 / -20...+45
IP rating		IP20
Relative humidity	%	85
Shock resistance	g	15
Vibration resistance	mm	0,35 10...55Hz
Indicators		2 LED diodes

### Description

Temperature Monitoring Relay is designed for application in automation and control systems to protect devices (i.e. motors) against temperature rise above the limit.

Two LED diodes indicate state of the relay. Green LED diode indicates the presence of supply voltage. If the temperature of the monitoring unit exceeds the limit, when resistance of PTC circuit is higher than 3300Ω, the contact is opened and the red LED diode flashes. The relay is released when the resistance of PTC sensors drops below 1800Ω. When the PTC resistance is lower than 70Ω the short circuit is detected, the contact is opened and the red LED diode illuminates steadily.

#### Caution!!!

Input of the PTC sensor is not galvanically isolated from the input circuit. When powering from 48VAC mains, dangerous voltage can appear on PTC T1 and T2 inputs posing danger of electric shock, so PTC sensors must provide galvanic isolation between the PTC circuit and the monitoring device. The hazard does not exist when the monitoring relay is powered from 24VACDC voltage.

### Mounting

1. Mounted on DIN-rail TS 35 according to EN 60715.
2. Mounting position: any.
3. IP Rating IP20.
4. Tightening torque: max. 1 Nm.
5. Terminal capacity: 1 x 0.5 to 2.5 mm<sup>2</sup> with/without multicore cable end 1 x 4 mm<sup>2</sup> without multicore cable end 2 x 0.5 to 1.5 mm<sup>2</sup> with/without multicore cable end 2 x 2.5 mm<sup>2</sup> flexible without multicore cable end.

### Danger!

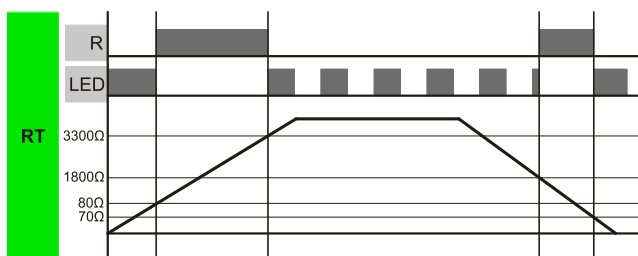


Read and understand these instructions before installing, operating or maintaining the equipment. Never carry out work on live parts! Danger of fatal injury! The product must not be used in case of obvious damage. To be installed by an authorized person.

### Ordering information

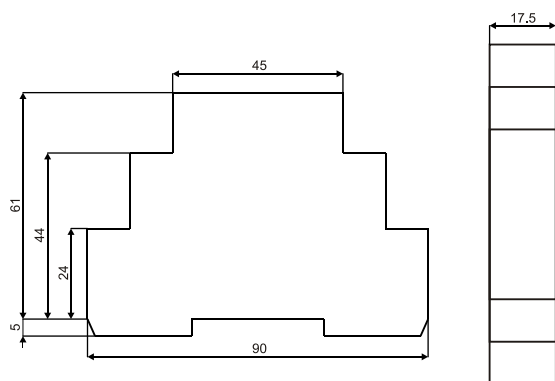
**MMR17-RTA-M048-108**

## Monitoring function

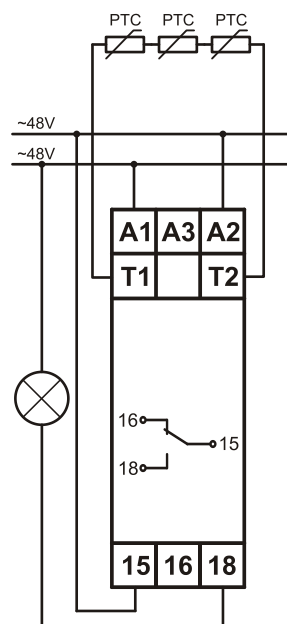


**RT** – if the PTC resistance is above 80Ω the output relay switches into ON position. When the cumulative resistance of the PTC circuit exceeds 3300Ω (at least one of the PTCs has reached the cut-off temperature), the output relay switches into OFF position and the red LED flashes. The output relay switches into ON position, if the cumulative resistance drops below 1800Ω by cooling down of the PTC. In case of PTC short circuit detection (<70Ω) the output relay switches into OFF position and red LED illuminates steadily.

## Dimensions



## Connection diagram



For 24VACDC mains, the supply voltage connect between A1 and A3 (polarity is irrelevant).

Maximum 6 PTC sensors connect in series between T1 and T2 inputs.