



Basic information

The thermistor motor protection relay monitors the temperature of windings in electrical machines (as motors, generators and transformers) in conjunction with PTC/thermistors. It provides safety protection against thermal overload.

Application

The thermistor motor protection relay is used for:

- Heavy duty starting (Overloading).
- Restricted cooling.
- Frequent switching.
- Blocked rotor.
- Phase failure, with a consequent increase in the temperature of the windings.
- Heating and ventilating.
- Operating with a frequency converter.

General function

The thermistor motor protection relay monitors up to six PTC-thermistors connected in series. Three phase AC motors are usually equipped with three sensors, pole-changeable three phase AC motors, with separate windings, require six sensors.

In normal operation the relay is activated, e.g. There is no thermal overload of the device. When the temperature of the PTC thermistor exceeds the tripping point, the motor protection relay is deactivated, (e.g. relay switches off) and triggers the power cut-off to the equipment, which it is monitoring. A fall in temperature causes re-activation of the relay, (e.g. the relay switches on) and allows the motor or transformer to be re-started.

According to the internationally standardised tripping points the device provides switching-on and switching-off automatically.

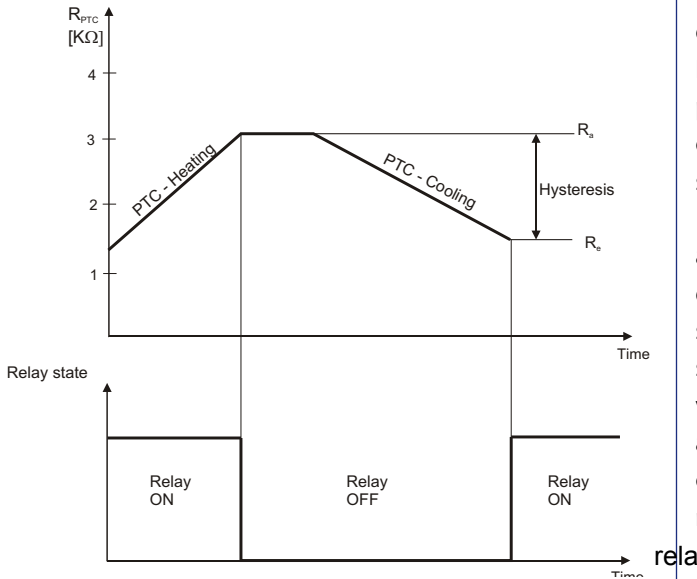
The motor protection relay enables reset manually as well. When the temperature of the PTC thermistor goes below the tripping point, the alarm message is resettable using the reset pushbutton.

Breaks and short circuits, in the sensor circuit, are indicated by means of LED and the motor protection relay is deactivated.

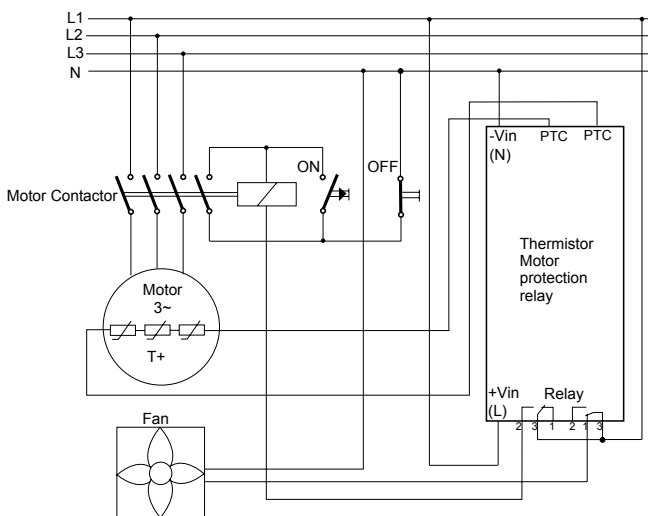
Advantages

- Internationally standardised on and off switch points.
- Universal interchange of the PTC thermistors.
- PTC thermistors, of all standardised operating temperatures, and conforming to DIN 44081 und DIN 44082 standards, are suitable for connection.
- Wire breakage and short circuit in the sensor circuit indicated.
- The device operates according to the closed circuit current principle. This guarantees the secure stopping of the electrical machine, even in the event of a power blackout.
- Wide range power supply for 18...72 V DC or 85...265V AC is applicable world-wide for all common supply voltages
- Ultra small sized housing saves space in your switch cabinet:
 - 17,5 mm at DC power supply
 - 22,5 mm at AC power supply
- Extern reset at screw type terminals
- Extremely cost effective.

TMS
with automatic re-activation



functional diagramm of a PTC-thermistor as
motor protection with relay:
2nd change-over contact to the fan switch



Electrical data

supply voltage:	85 - 265 VAC/DC 50 - 60Hz
supply voltage: DC	9 - 18 VDC
	18 - 36 VDC
	36 - 72 VDC
optional	18 - 72 VDC
Isolationsfestigkeit:	3000V
power consumption:	< 3VA
contact loadings:	2 change-over contacts
switching capacity:	250V~/5A/1250VA
	30 VDC/5A/150W
ambient temperature:	-25°C ... 85°C
emperature tripping point:	
switch-off resistance R_a :	1,65 kOhm... 4,0 kOhm
switch-on resistance R_e :	0,75 kOhm... 1,65 kOhm
voltage at the measuring terminal of the PTC-thermistor at $R_{PTC} = 4 \text{ kOhm}$:	≤ 7,5V
certificated on:	EN 61326-1
number of sensors:	suitable for connection for max. 6 sensors

Mechanical data

housing:	plastic: blue
material:	polyamide
housing dimensions, width x height x length [mm]:	
for supply voltage AC:	22,5 x 114,5 x 99 ± 0,5
for supply voltage DC:	17,5 x 114,5 x 99 ± 0,5
mounting:	fixed to the mounting rail TS 35
protection factor:	IP 20
terminals:	screw type, 5mm pin spacing, terminal size max. 2,5mm ²

identification to order: TMS - PTC - 24 - R

identifier:	TMS - PTC
supply voltage:	12 (9 - 18V)
	24 (18 - 36V)
	48 (36 - 72V)
	72 (18 - 72V)
	230 (85 - 265V)

reset: R = manually
A = automatically

