



**Zakład Mechaniki i Elektroniki  
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## DESCRIPTION

The PRM-10 device is used to protect electrical devices (e. g. motor) from high temperature increase. The temperature is measured by external PTC sensors that can be connected in series. The increased temperature on the sensors causes the output relay switches on. PTC Sensor is galvanic separated from the power grid by internal transformer. The kit contain PTC sensor which is adjusted for the device and will release the relay at the temperature 100 °C.

## FEATURES

- ⊗ Thermal device protection,
- ⊗ sensor's galvanic isolation from power supply,
- ⊗ supply voltage control indicator,
- ⊗ power/relay supply indicator,
- ⊗ in series sensor connection,
- ⊗ resistance of PTC sensor loop - 1500 Ω (cold state),
- ⊗ voltage relay output - 1 change over contact (NO/NC) contact max 16 A capacity,
- ⊗ doublemodular casing,
- ⊗ TH-35 DIN rail installation.

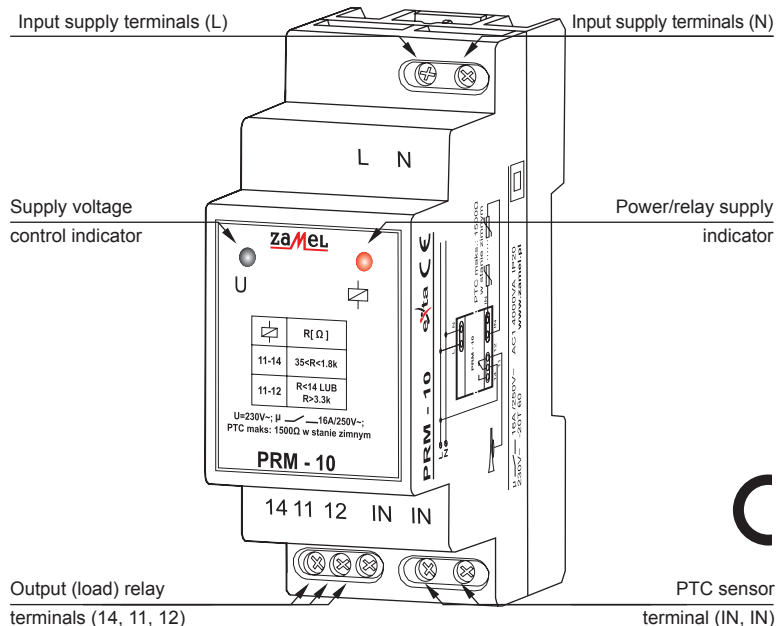


The device is designed for one-phase installation and must be installed in accordance with standards valid in a particular country. The device should be connected according to the details included in this operating manual. Installation, connection and control should be carried out by a qualified electrician staff, who act in accordance with the service manual and the device functions. Disassembling of the device is equal with a loss of guarantee and can cause electric shock. Before installation make sure the connection cables are not under voltage. The cruciform head screwdriver 3,5 mm should be used to instal the device. Improper transport, storage, and use of the device influence its wrong functioning. It is not advisable to instal the device in the following cases: if any device part is missing or the device is damaged or deformed. In case of improper functioning of the device contact the producer.

## TECHNICAL PARAMETERS

PRM - 10	
Input (supply) terminals :	L, N
Input rated voltage:	230 V~
Input voltage tolerance:	from -15 to +10 %
Nominal frequency:	50 / 60 Hz
Rated power consumption:	11 mA
Supply voltage control indicator:	LED green
Temperature sensor terminal:	IN, IN
Maximum resistance of PTC sensor loop:	1500 Ω (cold state)
Maximum lenght of PTC cable:	500 m
Power/relay supply indicator:	LED red
Output relay parameters:	1NO/NC-16 A/250 V AC1 4000 VA
Number of terminal clamps:	7
Section of connecting cables:	from 0,2 to 2,50 mm <sup>2</sup>
Ambient temperature range:	from -20 to +60 °C
Operating position:	free
Mounting:	TH35 rail (PN-EN 60715)
Protection degree:	IP20 (PN-EN 60529)
Protection class:	II
Overvoltage category:	II
Pollution degree:	2
Rated impulse withstand voltage:	2 kV (PN-EN 61000-4-5)
Dimensions (height / width / depth):	doublemodular (35 mm) 90x35x66 mm
Weight:	198 g
Reference standards:	PN-EN 60730-1 PN-EN 60730-2-9 PN-EN 61000-4-2,3,4,5,6,11

## APPEARANCE

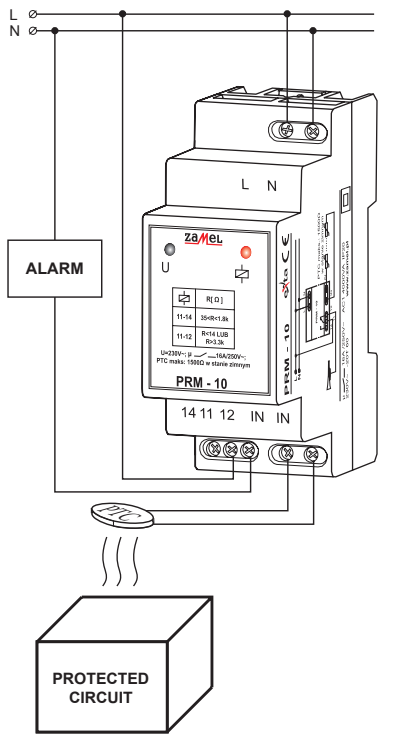


## MOUNTING, FUNCTIONING

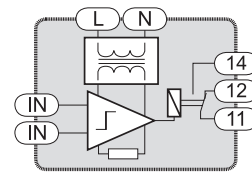
1. Disconnect the power supply from the mains by the phase fuse, the circuit-breaker or the switch-disconnector that are joined to the proper circuit.
2. **Check if there is no voltage on connection cables by means of a special measure equipment,**
3. Install PRM-10 device in the switchboard on TH-35 DIN rail,
4. Instal PTC sensor on the device's casing
4. Connect the cables with the terminals according to installing diagram,
5. Switch on the power supply from the mains.

Resistance value is controlled from sensors' terminals after switching on power supply (LED green is on). If there is a proper measure circuit (sensor's circuit) and proper temperature of the measured device, the system switches on the relay (LED red is on, 11-14 contacts are closed.) The sensor's temperature rise causes its resistance, which is above 3,5 kΩ, and switches off the relay (LED red is off, 11-14 contacts are closed). The next relay switch on occurs when the sensor's resistance drops below 1,8 kΩ (drop of the measuring device temperature). The sensors can be connected in series, where the maximum resistance of PTC sensor loop should not be above 1500Ω (cold state).

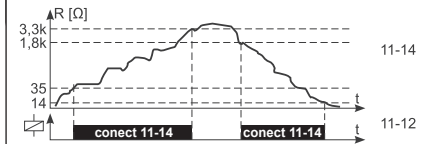
## CONNECTING



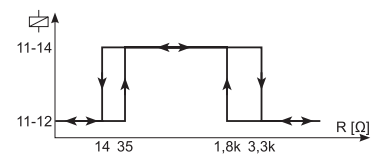
## INNER DIAGRAM



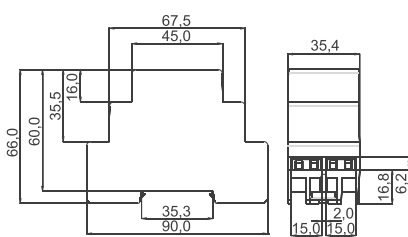
## TIME COURSE



## SWITCHING THRESHOLDS



## DIMENSIONS



## PRODUCT FAMILY

PRM-10 resistance relay belongs to Pxx relay family.

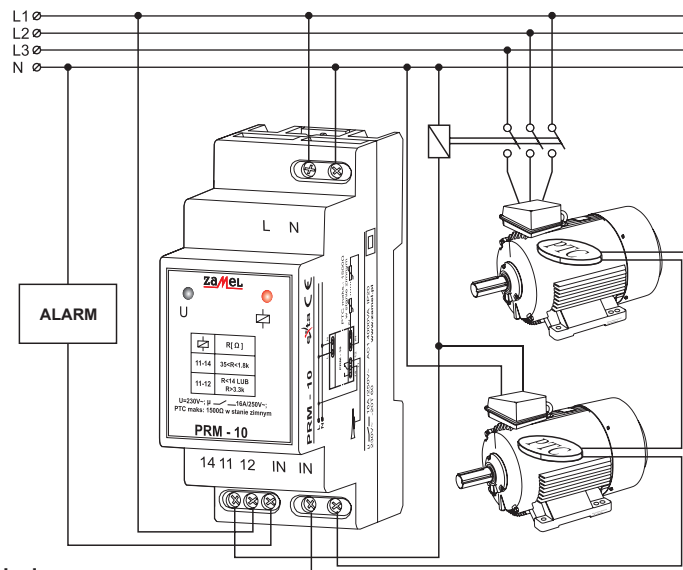
### PXX - xx

Device versions:  
10 - basic

Casing:  
M - doublemodular

Symbol:  
PR- resistance relay  
PZ- flooding relay

## EXAMPLE OF INSTALLATION



### Typical use:

PRM-10 resistance (thermal) relay cooperates with PTC sensors, and which control the engines' temperature. Increase of the temperature causes the relay switches on and it means motor power supply is switched off and the alarm system is on.

## GUARANTEE CARD

There is 24 months guarantee on the product

1. ZAMEL provides a two-year warranty for its products.
2. The ZAMEL warranty does not cover:
  - a) mechanical defects resulting from transport, loading / unloading or other circumstances,
  - b) defects resulting from incorrect installation or operation of ZAMEL products,
  - c) defects resulting from any changes made by CUSTOMERS or third parties, to products sold or equipment necessary for the correct operation of products sold,
  - d) defects resulting from force majeure or other aleatory events for which ZAMEL is not liable.
3. All complaints in relation to the warranty must be provided by the CUSTOMER in writing to the retailer after discovering a defect.
4. ZAMEL will review complaints in accordance with existing regulations.
5. The way a complaint is settled, e.g. replacement of the product, repair or refund, is left to the discretion of ZAMEL.

Salesman stamp and signature, date of sale

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