



**Zakład Mechaniki i Elektroniki
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DESCRIPTION

The RTM-01 temperature regulator is designed for load control (e.g. heaters, floor heating systems) in dependence of ambient temperature, near NTC sensor. The device is capable of temperature regulating in the range of $+5^{\circ} \div +40^{\circ} \text{C}$ according to the temperature adjusted by means of a potentiometer on the unit front panel. The external NTC-03 temperature probe is needed for correct system operation. The probe is not part of the set and it is necessary to purchase it separately. The probe lead is 3 m in length. It is possible to extend it up to 50 m with $0,2 \div 2,5 \text{ mm}^2$ lead. Do not join the probes.

FEATURES

- Temperature control in a range of $+5^{\circ} \text{C} \div +40^{\circ} \text{C}$,
- External NTC probe,
- Power supply indicator,
- Relay state indicator,
- Load control in dependence of ambient temperature,
- Single-module casing,
- Mounted on TH 35 rail,
- Relay output, maximum load 16 A.



CAUTION

The device is designed for single-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.

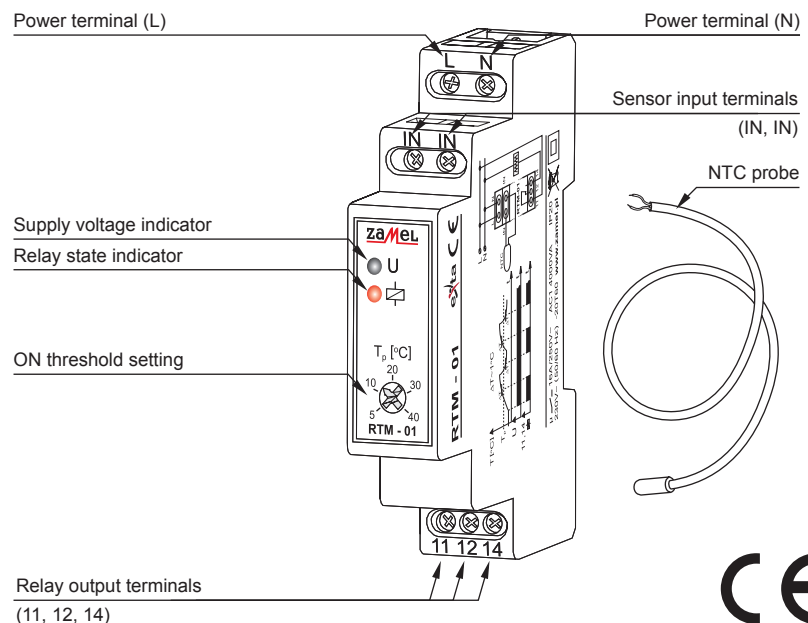


The symbol means selective collecting of electrical and electronic equipment. It is forbidden to put the used equipment together with other waste

TECHNICAL DATA

RTM-01	
Power supply terminals:	L, N
Input rated voltage:	230 V~
Rated voltage tolerance:	$-15 \div +10 \%$
Nominal frequency:	50 / 60 Hz
Rated power consumption:	33 mA
Supply voltage indicator:	green LED
NTC sensor terminals:	IN, IN
Temperature adjustment range:	$+5 \div +40^{\circ} \text{C}$
Hysteresis:	$\pm 1^{\circ} \text{C}$
Relay terminals:	11, 12, 14
Load supply indicator:	red LED
Relay contacts parameters:	16A NO/NC 4000 VA AC1
Number of terminal clamps:	7
Section of connecting cables:	$0,2 \div 2,50 \text{ mm}^2$
Ambient temperature range:	$-20 \div 60^{\circ} \text{C}$
Operating position:	free
Mounting:	TH 35 rail (according to PN PN-EN 60715)
Protection degree:	IP20 (PN-EN 60529)
Protection level:	II
Overvoltage category:	II
Pollution degree:	2
Dimensions:	single-module (17,5 mm) 90x17,5x66 mm
Weight:	0,08 kg
Reference standards:	PN-EN 60730-1, PN-EN 60730-2-9 PN-EN 61000-4-2,3,4,5,6,11

APPEARANCE



MOUNTING, OPERATION

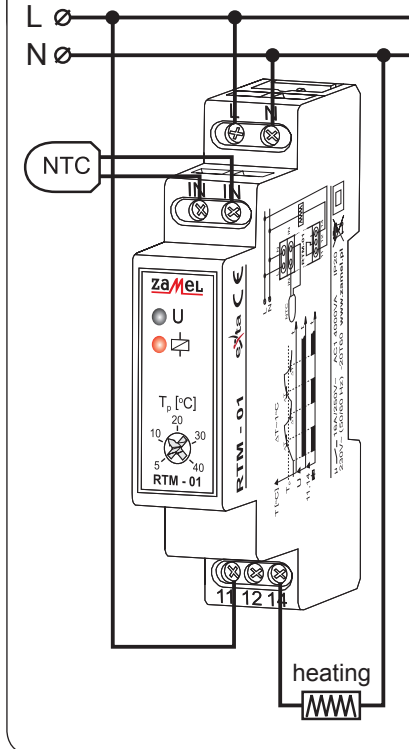
1. Disconnect the electric network by means of an appropriate cut-off, current-limiting circuit-breaker or separator.
2. Check if there is no any voltage between power leads by means of an appropriate gauge.
3. Mount the **RTM-01** module on TH 35 rail.
4. Connect the system leads according to the electrical diagram.
5. Connect power supply circuit.

The device is ready to work just right after its appropriate connecting. The system controls temperature near the external NTC probe. When temperature drops below $T_p - \Delta T$ temperature, the regulator will switch ON the output relay (11 – 14 contacts shorted) and the relay load (e.g. heater). The heater will be ON until the temperature reaches $T_p + \Delta T$. The temperature hysteresis is about $\Delta T \sim 1^\circ\text{C}$. The hysteresis is needed for decreasing relay switching frequency.

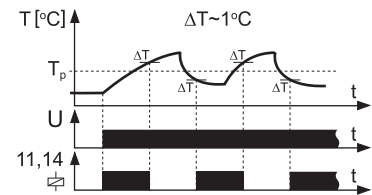
NTC temperature sensor connection signalization:

- sensor input open - green LED diode pulses once a second,
- sensor input closed - green LED diode pulses three times a second,
- sensor properly connected - green LED diode illuminates constantly.

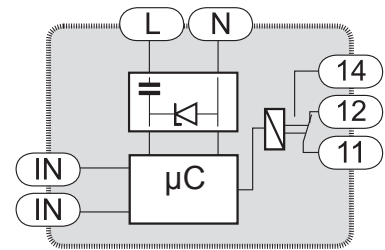
CONNECTION



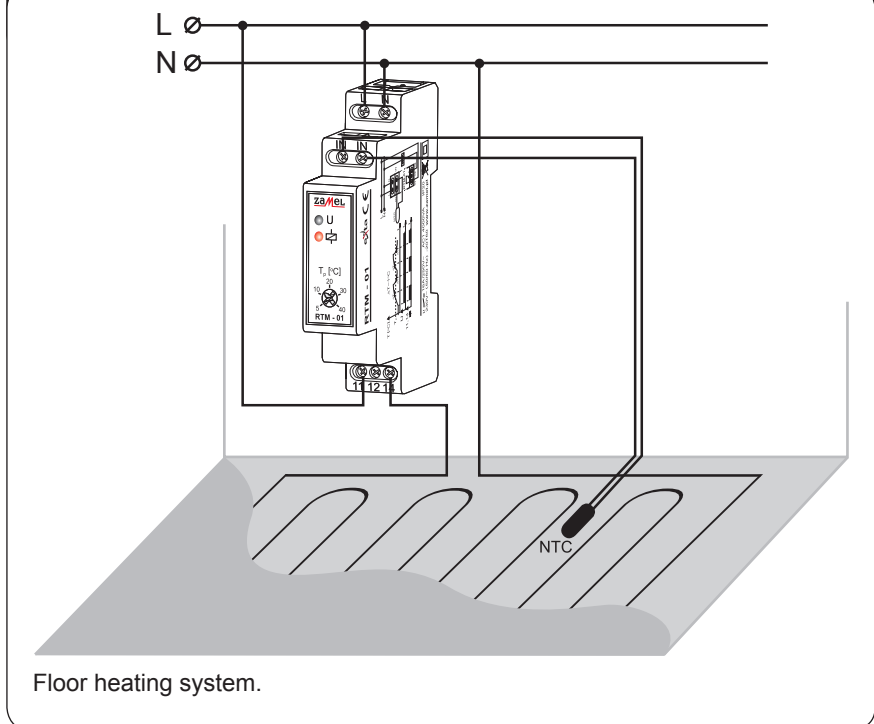
TIME DIAGRAMS



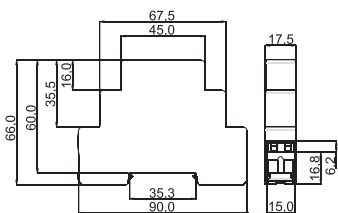
INNER DIAGRAM



APPLICATION



DIMENSIONS



PRODUCT FAMILY

The RTM-01 temperature regulator is a member of the RTM family.

RTM - xx

Device version:
01 - basic
20 - with the LCD display

Device type

WARRANTY CARD

There is 24 months guarantee on the product

Salesman stamp and signature, date of sale

1. ZMIE ZAMEL SP. J. assures 24 months guarantee for the product.
2. The manufacturer's guarantee does not cover any of the following actions:
 - a) mechanical damage during transport, loading / unloading or under other circumstances,
 - b) damage caused by incorrect product mounting or misuse,
 - c) damage caused by unauthorised modifications made by the PURCHASER or any third parties to the product or any other devices needed for the product functioning,
 - d) damage caused by Act of God or any other incidents independent of the manufacturer.
3. The PURCHASER shall lay any claims in writing to the dealer or ZMIE ZAMEL SP. J.
4. ZMIE ZAMEL SP. J. is liable for processing any claim according to current Polish legislation.
5. ZMIE ZAMEL SP. J. shall process the claim at its own discretion: product repair, replacement or money return.
6. The manufacturer's guarantee is valid in the Republic of Poland.
7. The PURCHASER's statutory rights in any applicable legislation whether against the retailer arising from the purchase contract or otherwise are not affected by this warranty.