THERMOREGULATOR

terneo rz

smart control of heating

Use of the thermoregulator is:

energy
savings up

comfortable
level of temperature

Technical datasheet

Installation and operation manual

Low Voltage Directive 2014/35/EU
EMC Directive 2014/30/EU

Before the start of installation and use of the device, please refer to this document. This will help to avoid mistakes and misunderstandings.

Purpose

terneo rz is designed to maintain a constant temperature of 0... 30 ° C. The temperature is controlled at that point where there is a temperature sensor.

The thermoregulator has a power protection relays to prolong its life. If the term between switching the relay was less than one minute, the thermoregulator will delay the activation of the relay, marking the countdown flashing dot in the rightmost discharge.

This temperature regulator is perfectly suitable for temperature regulating in the system warm water floor by means of electro-thermal servo actuator with operating voltage of 230 V. Servo actuator can be both normally closed, and normally open. At the connection of normally open servo actuator to the temperature regulator use in the functional menu of the temperature regulator function «Inverse load control».

Technical data

№ p/p	Parameter	Value
1	Adjustment range	0...30 °C
2	Maximum load current	16 A
3	Rated load capacity	3 000 VA
4	Input voltage	230 V ±10 %
5	Current consumption at 230 V	not more than 73 mA
6	Weight in the complete set	0,19 kg ±10 %
7	Overall dimensions	124 × 57 × 83 mm
8	Temperature sensor	NTC thermo-resistor 10K OM at 25 ° C
9	The length of the sensor connected cable	0,1 m
10	Number combinations under heat, at least	50 000 cycles
11	Number of combinations without heating, no less than	20 00 000 cycles
12	Degree of protection GOST14254	IP20
13	Temperature hysteresis	1 °C
14	Energy consumption	no more than 1.5 kW / month

The following can be done to fine-tune the thermoregulator and expand its functionality in the Service menu:

— expand item 1. tabl. Technical data (Limits of regulation) up to –25 ...+ 105 °C.

— change item 13. Hysteresis within 0,5 ... 25 °C.

Supply package

Thermoregulator	1 piece
Warranty certificate and card	1 piece
Technical passport, instruction	1 piece
The packing box	1 piece

Connection

The fork of **terneo rz** plugs into a standard wall socket with grounding. The socket must designed for a current of at least 16 A. The design of the socket should provide a reliable contact. The load is connected to a wall socket of the **terneo rz** thermoregulator. The load current on the thermoregulator should not exceed 16 A.

Installation

In order to connect the thermoregulator:

— connect the thermoregulator in the socket;

— connect the load to the thermoregulator socket.

The thermoregulator is designed for indoor installation. The ingress risk of moisture or liquid into the place of installation must be minimized. When installed in a bathroom, toilet, kitchen, swimming pool the thermo-regulator should be installed at the place out of reach of casual spraying.

To protect against short-circuit in the load circuit the circuit breaker (CB) has to be installed before installing the thermoregulator. The circuit breaker is installed in the gap of phase conductor. It should be designed for not more than 16 A.

To protect person from electric shock leak is set SSD (safety shutdown device).

It is necessary that the thermoregulator commutes the current not more than 2/3 of the maximum power specified in the passport.

Exploitation

Enabling

When the device is switched on the display 3 shows **«888»**.

Then the sensor temperature indication begins. The switching on of load is indicated by a red LED.

Preset temperature (factory setting 23 °C)

To view and modify the preset temperature, click on the **«+»** or **«–»**. The flashing value can be changed within the range of 0...30 ° C.

Locking the controls (protection from children)

The thermoregulator is equipped with a lock controls. In order to activate them, hold at the same time buttons **«+»** and **«–»** during 6 sec until the indicator shows the sign **«Lock» («unLock»)**.

Function menu

Use the «≡» button to select the desired menu item.

Use «+» or «–»to change the parameters. The first press causes a flashing of the parameter, the next one - a change.

Temperature display returns after 5 seconds after the last pressing the buttons.

Resetting to factory settings

To reset, hold down three buttons and hold for more than 12 seconds. **«dEF»** inscription will appear on the screen. After releasing the buttons, the screen blinks off and the thermoregulator restarts.

Firmware version view

Holding the **«–»** button for more than 6 seconds will display the firmware version on the screen. After releasing the button, the thermoregulator returns to the normal operation mode.

Table 1. Navigating through the Function menu

Menu item	Hold the middle button	Indikator	Factory setting	Change with «+» and «–»	Notes
Starting / resetting the delay of the load switch on	click 1 time	ton toF	toF	The load will shut off. The screen will display: 1. XXh, where XX is the remaining time in hours, if the time is > 10 h. 2. X.YY, where X is hours, YY is minutes, with alternating ton inscription every 10 seconds, if time is <10 hours	
Delay control for switching on load (time to temperature maintaining resume)	click 2 times	t h	9.0h	0,5–99 h, step — 0,5 h	When setting the timer time over 10 hours — step 1 hour.
Load operating modes (heating / cooling)	click 3 times	Hot	Hot	Hot CoL	**«Hot»** — heating, **«CoL»** — cooling The thermoregulator switches off the load when it reaches the setpoint temperature.
Changing the readings of the indicator (correction)	click 4 times	Cor	0.0	±5,0 °C, step — 0,1 °C	If there is a need to adjust the temperature of the indicator.
Inverse load control (normally closed contact)	click 5 times	nc	oFF	on oFF	Is in effect in load control using a normally closed contact.
Load work time counter	click 6 times	trL	review	«+» or «–» — review. During reviewing: «–» — is counter reset	Time output (hours.minutes) is carried out with using creeping line.
Load On / Off	4 sec	oFF on	on	To change the mode, hold the button for 4 seconds, then release. Herewith, 3 dashes will appear on the screen one after another.	After disconnecting the load the inscription «oFF» will remain on the screen.

Service menu

To enter, press the **«–»** button 3 times with an interval of no more than 1 second, then the «+» button and again the **«–»** button. Next, use the middle button to navigate through the menu items, and «+» and «–» buttons - to enter the menu and change the parameter. In 5 seconds after the last button press, the temperature is returned to the display.

Table 2. Navigating through the Service menu

Menu item	Enter the button «≡»	Indikator	Factory setting	Enter and change «+» and «–»	Notes
Change the upper limit of set temperature	—	Li -	30	up to 105 °C	Used to expand the limits of regulation of set temperature.
Change of the lower limit of the set temperature	1 time	Li _	0	up to –25 °C	
Hysteresis	2 times	Hi S	1.0	0,5...25 °C interval 0,5 °C	Load will turn on after set temperature decreases by the value of hysteresis (Heating mode).
Frequent switching protection control of a power relay	3 times	don	don	don doF	**«don»** — the next switching of the power relay will occur after 1 min; **«doF»** — the next switching of a power relay without delays.

POSSIBLE PROBLEMS, CAUSES AND WAYS TO OVERCOME THEM

When indicator is not lit by turning on the thermoregulator at all positions of the regulating knob.

Possible cause: No power.

It is necessary to: make sure there is power supply voltage with a voltmeter. If there is voltage, then please contact the Service center.

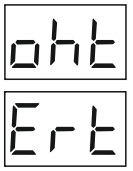
Emergency operation as per timer Mode (factory settings 15 minutes)

The **«t»** symbol will flash on the screen and the remaining time until the next load on/off is displayed. In this case, every 5 seconds the cause of the sensor maloperation **«OC»** (open circuit) or **«SC»** (short circuit) will be displayed. Select the load operation time in a 30-minute cyclic interval, the rest of the time the load will be turned off. The load operation time can be set in the range oFF, 1 ... 29 min, on. For the load to work continuously, select “on”; to turn it off completely, select **«oFF»**.

Protection from internal overheating

In case if the temperature inside the exceed 80 °C, will be emergency lockout of loading.

On the screen 1 r / s **«oht»** (overheat) will be displayed. When the temperature inside the case goes down below 60 °C, the thermoregulator will turn on the load and resume operation. If the protection is triggered for more than 5 times in a row, the controller will be blocked until the temperature inside the case goes down to 60 °C and one of the buttons is pressed.



At breakout or short circuit of temperature sensor, device continues to operate normally, but every 5 sec the message **«Ert»**, indicating the problem with sensor. In this case, control over inner overheating will not be done.

The resistance of the sensor at different temperatures

The temperature, (°C)	Resistance of the sensor, (Ω)
5	25339
10	19872
20	12488
30	8059
40	5330

Safety precautions

To avoid injuring or damage of the device, carefully read and understand for yourself these instructions.

Connecting the device must be carried out by a qualified electrician.

Before installation (dismantling) and connection (disconnection) disconnect the power supply, and act in accordance with the «Rules for Electrical Installation».

Do not switch the non assembled device to the network.

Keep away from humidity.

Do not expose to extreme temperatures (above +45 °C or below –5 °C).

Not clean the device using chemicals such as benzene and solvents.

Do not store or use the device in dusty places.

Do not try to disassemble and repair the device.

Do not exceed the limit values for current and power.

For protection against overvoltage caused by lightning strikes use surge arresters.

Do not immerse the sensor with a connecting wire in the liquid medium.

Do not burn or dispose the device with household waste.

The used device must be disposed in accordance with current law.

The products are transported packed, ensuring the safety of the product.

The device is transported by any type of vehicle (rail road, auto, marine, air transport).

The date of manufacture is indicated on the back side of the device.

If you have any questions or something will not be clear for you, call please the telephone center services listed below.

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