terneo

smart control of heating

RZ

Technical data sheet,
installation and operation manual

Terneo rz thermostat is designed to maintain constant temperature within the range from 0 to 30 °C using heating or cooling equipment.

According to the data from the temperature sensor, the thermostat turns off the heating when the desired temperature is reached and turns it on when it drops by the hysteresis value.

IN THE BOX

Thermostat	**1 piece**
Technical data sheet, installation and operation manual and warranty card	**1 piece**
The packing box	**1 piece**

TECHNICAL DATA

Adjustment range	factory setting 0...30 °C (range –25...105 °C)
Maximum load current (for category AC-1)	16 A
Rated load capacity (for category AC-1)	3 000 VA
Input voltage	230 V ±10 %
Weight in the complete set	0,19 kg ±10 %
Overall dimensions (w × h × d)	124 × 58 × 87 mm
Temperature sensor	NTC thermo-resistor 10 kOhm 25 °C (R10)
The length of the sensor connected cable	0,1 m
Number combinations under heat, at least	50 000 cycles
Number of combinations without heating, no less than	20 000 000 cycles
Temperature hysteresis	factory setting 1 °C (range 0,5...25 °C)
Energy consumption	no more than 1,5 kW*h / month
Degree of protection GOST14254	IP20

IMPORTANT. Before the installation and operation of the device, please read by the end of this document. This will help to avoid possible danger, mistakes and misunderstandings.

RELIABILITY OF THE POWER RELAY provides protection against frequent switching in the thermostat. If there was less than 1 minute between relay switching, the relay activation will be delayed, marking the countdown with a flashing dot.

NON-VOLATILE THERMOSTAT STORAGE saves all settings in the event of a power outage.

THE TEMPERATURE CONTROL LIMITS AND HYSTERESIS CAN BE EXPANDED in the thermostat advanced menu (see page 6).

IT IS FORBIDDEN TO POWER THE DEVICE FROM SOURCES WITH A MODIFIED SINUSOID, as well as uninterruptible power supplies, the output voltage of which is not a sinusoid. Long-term operation, more than 5 minutes, from such voltage sources may damage the device and lead to out-of-warranty repairs.

CONNECTION

The fork of terneo rz plugs into a standard wall socket 230 V ~ 50 Hz with grounding. The socket must designed for a current of at least 16 A. The design of the socket should provide a reliable contact.

In order to connect the thermostat:

- connect the thermostat in the socket;
- connect the load to the thermostat socket.

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



Viewing the preset temperature and parameter increment.

Menu

Viewing the preset temperature and parameter decreasing

Power LED for load

Temperature sensor

INSTALLATION

The thermostat is designed for indoor installation. The ingress risk of moisture or liquid into the place of installation must be minimized.

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

It is prohibited the use of a thermostat inside the greenhouse to prevent oxidation of outlet contacts, which can lead to damage to the device.

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

The cross section of the wires connected to device should correspond to the amount of electric current consumed by the load.

EXPLOITATION

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.

Switching on the thermostat



When you turn on the screen displays **«888»** and then the sensor temperature. The red indicator lights up to indicate that the load is on.

Preset temperature

(factory setting 23 °C)

Use **«+»** and **«–»** to select the temperature.If sensor fails, the thermostat will continue to operate in emergency timer mode (details on page 7).

Button blocking

(child and public protection)



In order to enable / disable button blocking press the **«+»** and **«–»** buttons at the same time for 6 seconds till the **«Loc»** (**«unLoc»**) sign appears on the screen.

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 thermostat 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 thermostat returns to the normal operation mode.

The manufacturer reserves the right to modify the firmware to enhance the device technical characteristics.

RESISTANCE OF EXTERNAL TEMPERATURE SENSOR at different ambient temperatures

5 °C	25339 Ω
10 °C	19872 Ω
20 °C	12488 Ω
30 °C	8059 Ω
40 °C	5330 Ω

WARRANTY TERMS

The warranty for **terneo** devices is valid for **36 months** from the date of sale, provided that the instructions are followed. The warranty period for products without a warranty certificate is counted from the date of production.

If your device is not working properly, we recommend that you first read the section «Possible problems». If you cannot find an answer, contact Service Center. In most cases, these actions resolve all issues.

If you continue to have issues with the device, please send it to a Service Center or to the store where you purchased the device. If your device is defective due to our fault, we will repair or replace it under warranty within 14 business days.

Please see the full text of the warranty and the data you need to send to your Service Center on the website https://www.ds-electronics.company. If you have a warranty case, please, contact the General distributor in your area.

terneo

SERVICE CENTER CONTACT
+38 (091) 481-91-81
Viber WhatsApp Telegram
support@dse.com.ua

WARRANTY CARD

serial №:

date of sale:

a seller, a seal:

place of a seal

an owner contact for a service center:

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.

Table 1. MENU

Menu section	Press button «☰»	Screen
Delay timer (factory setting **«toF»**) To start the timer, select **«ton»**. Screen will display the time until operation is resumed with a flashing «h».	1 time	toF / ton
Timer setting (factory setting 9 hours, range 0,5–99 hours) Select the time after which the heating will resume.	2 times	t h
Operating modes: heating / cooling (factory setting — Hot) **«Hot»** — heating, **«CoL»** — cooling.	3 times	Hot / CoL
Correction of screen reading (factory setting 0, range ±5,0 °C, step 0,1) If necessary you can use the adjustment in the floor temperature display on the thermostat screen.	4 times	Cor
Inverse load control (factory setting **«oFF»**) Select **«on»** in the settings menu to switch to normally closed contact mode. Activate the function, for example, when connecting a normally open servo.	5 times	nc
Load run time counter This counter calculates energy consumption through multiplying the operating time by the load power and the tariff. It displays the time in the following format: hours. minutes (e.g. 20.59). To reset the counter, press **«–»** while viewing it.	6 times	trL
Enabling / disabling the operation of the thermostat (factory setting «on») To turn off, select **«oFF»**. The screen will display three dashes one after the other, then the inscription **«oFF»**.	hold for 4 sec	on / oFF

continuation of table 1

Menu section	Press button «☰»	Screen
ADVANCED MENU. To enter this menu, press the following buttons at intervals of less than 1 second: 3 times **«–»**, then 3 times **«+»**, then 3 times **«–»**.		
Changing the upper temperature limit to 105 °C (factory setting 30 °C)		Li -
Changing the lower temperature limit to –25 °C (factory setting 0 °C)	1 time	Li _
Hysteresis (factory setting 1 °C, range 0,5...25 °C) This is the difference between the temperature of the load turn on and off. The lower value of hysteresis allows you to maintain the temperature more accurately, upper — to save on energy consumption and increase the service life of the relay by reducing the number of load switches.	2 times	HI 5
Power relay anti-switch control (factory setting **«don»**) In case of long-term operation of the power relay, regulator prevents switching more often than 1 time per minute. In case of triggering of anti-switch control, dot flashes in a far right line on the screen. If you want to disable protection, select **«doF»**.	3 times	don / doF

ADDITIONAL INFORMATION

Do not fire and do not throw away the device with the household waste.

After the end of its service life, the product must be disposed of in accordance with applicable law.

Transportation of goods carried in the package, ensuring the safety of the product.

The device is transported by any kind of transport (rail, sea, motor, air transportation).

Date of manufacture is on the back side of device. Application time is unlimited.

The device does not contain harmful substances.

If you have any questions or you something will not clear, call the Service centre the telephone number listed below.

POSSIBLE PROBLEMS, CAUSES AND WAYS TO OVERCOME THEM

While the load is running, the symbol «t» flashes on the screen

t 15 — The temperature controller has switched to the Emergency Timer Mode. The symbol **«t»** and the remaining time until the next load on / off flash on the screen. Every 5 sec. the screen displays **«OC»** or **«SC»**.

OC — open circut — sensor circuit break

SC — short circut — short circuit of the sensor circuit

Possible cause: damage to the sensor and its circuit.

It is necessary: to check the integrity of the sensor and the absence of mechanical damage to its circuit, the absence of power wires that are laid close.

Timer-based emergency operation mode (factory setting 15 min.) This mode ensures the operation of the thermostat in case of damage to the sensor: in a 30-minute cyclic interval it turns on the load for the set time, the rest of the time the load is turned off. The load operating time is adjustable from 1 to 29 minutes using the **«+»** or **«–»** buttons. To ensure continuous operation of the load, select **«on»** and to turn the load completely off, select **«oFF»**. Heating temperature control is not available.

Load is off, screen and indicator are off

Possible cause: No power supply.

It is necessary: make sure that the supply voltage is available. If power supply is available, contact the Service Center.

The load does not work, the screen flashes «oht»

oht — The temperature inside the housing exceeded 80 °C, the protection against internal overheating worked.

Possible cause: internal overheating of the thermostat. It can occur if the socket that powers the device or the plug of the load is not designed for the required power, the ambient temperature is high, or the power of the switched load is exceeded.

It is necessary: to make sure that the socket powering the device or the load plug is designed for the required power and the load power does not exceed the allowable one.

Features of the protection against internal overheating: when the temperature inside the housing drops below 60 °C, the thermostat will resume operation. When the protection is triggered more than 5 times in a row, the thermostat will be blocked until the temperature inside the housing drops below 60 °C and one of the buttons is pressed.

Every 4 seconds the screen displays «Ert»

Ert — *Possible cause:* is a break or short circuit of the internal overheating sensor. Internal overheating is not monitored.

It is necessary: to send the thermostat to the service center. Otherwise, overheating control will not be carried out.

SAFETY INSTRUCTIONS

Carefully read and become aware of yourself these instructions.

Before the installation (dismantling) and connection (disconnection) of the device, turn off voltage supply and also act according to the «Rules of an arrangement of electric installations».

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

Do not switch the non assembled device to the network.

Avoid hitting of water or moisture to the device.

Do not expose the device to extreme temperatures (higher than 40 ºC or below –5 °C) and high humidity.

Never clean the device with the use of chemicals such as benzene, solvents.

Do not store the device and do not use it in areas with the dust.

Do not attempt to disassemble and repair the device.

Do not exceed the landmarks value adaptor and power.

To protect against overvoltage caused by lightning discharges, use a lightning protector.

Protect the children from games with the working device, it is dangerous.

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

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