

INTIEL INTIEL

THERMO REGULATOR FOR PHOTOVOLTAIC BOILER TYPE: PVBoiler Rev.03


USER GUIDE



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Instructions for safe work:

- Before installation, check the integrity of the device and the wires connecting to it.
- If the integrity of any of the above is broken, do not install until the fault is resolved.
- Assembly and disassembly of the device to be carried out by qualified personnel who have previously familiarized themselves with the product manual.
- To be installed in a dry and ventilated place, away from sources of heat and flammable gases, liquids.
- Make sure that the mains voltage corresponds to the voltage of the the nameplate of the device.
- Use consumers with a power corresponding to the output power of the device.
- In case of malfunction of the device, switch off immediately appliance and contact an authorized service center to repair the damage.
- In case of fire, use a powder fire extinguisher.
- In order to protect the environment, do not throw away electrical appliances, devices and their packaging marked with a sign  crossed out bin together with household waste.

THERMO REGULATOR FOR PHOTOVOLTAIC BOILER

TECHNICAL DESCRIPTION

1. Purpose

The device is designed to control the combined heating of boilers having two independent heaters powered by photovoltaic panels and mains power.

2. Method of operation

Maintains the water temperature in the boiler T_b , according to the set point and hysteresis, turning the heating on or off.

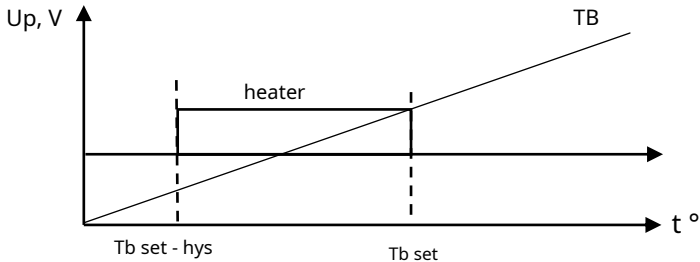
It has a built-in weekly programmer with two programs to allow the heater to operate when powered by the network. The temperature to which the boiler is heated from the network is determined by a separate task.

It monitors the current and voltage of the photovoltaic panel and measures the instantaneous power consumed.

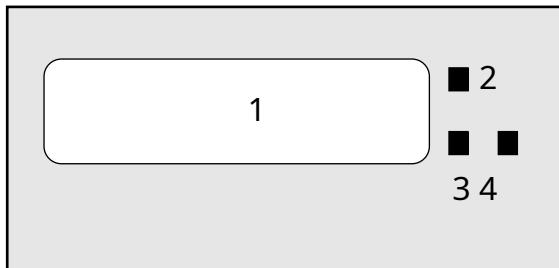
When "MPPT|" mode is on monitors the point of maximum power from the panel according to the momentary sunlight. In this way, efficient use of the panel is achieved in low sunlight. In this mode, the set hysteresis does not affect the operation of the thermostat, power is always supplied to the heater at a temperature lower than the set T_b set.

Operation without "MPPT"

At a temperature of the water heater T_b lower than the set T_b set - hys, the heating is switched on, the condition continues until the set T_b set is reached.



3. Face panel



- 1 – indication;
- 2 – "forward" change button;
- 3 – "back" change button;
- 4 – button for entering / exiting programming mode;

In basic state, the display shows the following parameters:

- Up – panel voltage;
- Tb – current boiler temperature;
- P – panel power;
- AC ON – mains heater on;
- AC OFF – switched off mains heater;

4. Programming

With buttons "-" or "+" scroll until the display shows the desired setting. Press button "-" to enter programming mode, then the setting value starts flashing. With buttons "-" or "+" you can make changes. To confirm the changes press the button "-".

<i>name</i>	<i>designation</i>	<i>borders</i>	<i>factory setting</i>	<i>current value (notes)</i>
Set temperature of the panels	Tb pv	5 – 90 °C	60	
hysteresis	Tb his	40	5	
Monitoring max. power	MPPT	0 – inactive 1 – active	1	
Hour and day	Time			
Correction of the measured one temperature	Tb cor	- 10 to +10 °C	0	

Setting the weekly program for operation of the network heater

<i>name</i>	<i>designation</i>	<i>borders</i>	<i>factory setting</i>	<i>current value (notes)</i>
Weekly program	Week program			
Interval of work	P1 P2	00:00 – 24:00		
Day of the week	P1 DoW P2 DoW	SMTWTFS (Sunday - Saturday) - inactive		
Set temperature of the network	Tb line	5 – 90 °C	40	
Exit	Exit			

Boiler temperature correction.

Press and hold the "-" for about 10 seconds, a password request "Password" will be displayed, with buttons "-" or "+" select 123 and again press button "-". The menu will automatically lock 15 seconds after the last button press.

5. Electrical connection and technical data

To access the terminals it is necessary to remove the box cover by unscrewing the upper bolts at the four ends of the box indicated by arrows.

Specifications: Power supply

Input PV

PV heater output Mains

heater output

Temperature sensor

Measurement range

Unit of measurement

Humidity

Protection

~230V/50Hz

max 320V/10A

MOSFET max 320V/10A

relay NO, ~230V/16A

Pt 1000 (-50 to +250 °C)

- 10 +120 °C

1 °C

up to 80%

IP2

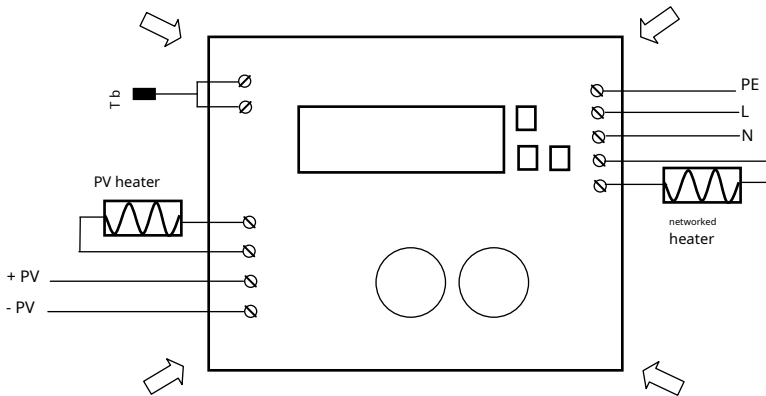
Important!

Reverse connection of PV panels is not permitted.

It is not permissible to switch the heater or panels while the device is operating.

Combining the heaters is not allowed.

**Recommended connection according to the power of the PV panels: up to 5 panels at a power of up to 330W per panel
up to 4 panels at a power of up to 460W per panel**



6. Warranty conditions

The warranty of the product is 24 months from the day of sale, but no more than 28 months from the date of production, subject to compliance with the requirements for installation, operation, storage and transport.