



Two-channel electronic thermostat
IB – Tron 3 100HT-2Z
to operate two and three-point devices

Contents

PRODUCT IS 

MARKED AND HAS BEEN PRODUCED IN ACCORDANCE WITH ISO 9001 STANDARD

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IB-TRON 3100HT-2Z

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BASIC INFORMATION

IB-Tron 3100HT-2Z thermostat is independent microprocessor thermostat with large LCD display. The thermostat is designed to control work of valves, air dampers, electric air heaters, pumps, fans and other two- and three-point controlled appliances.

IB-Tron 3100HT-2Z thermostat allows to control process of heating and cooling. It allows to maintain the desired temperature in two independent places according to fixed weekly work scheduler.

IB - Tron 3100HT-2Z thermostat allows to save energy costs. Thermostat contributes to protect environment. IB-Tron 3100HT-2Z thermostats can be commonly used in: hotels, offices, supermarkets, factories, hospitals, houses and other buildings.

FEATURES

- .. Large, blue backlit LCD display which shows current temperature, a day of the week and other information.
- .. Esthetic and modern design
- .. Blue backlight (backlight is activated by pressing any button and deactivated after set period of inactivity)
- .. Easy, intuitive operating and programming.
- .. Power supply from network 230V with battery memory backup and clock backup.
- .. Comprehensive programming process in a weekly cycle with an accuracy of

FEATURES

- .. 1 minute and with possibility of programming four time periods each day for each of channel.
- .. Manual or automatic work mode.
- .. Adjustable three temperatures:
 - » Comfortable
 - » Economic
 - » Holiday
- .. Support of two temperature sensors (one per channel), connected to the power module. Both sensors are supplied with thermostat.
- .. Displayed temperature with 0,1 °C accuracy.
- .. The possibility of calibrate device (external sensors on long wires, independent calibration of each channel).
- .. Adjustable hysteresis
- .. **FROST PROTECTION** function - protection of installation against freezing.
- .. Large load - to 2 kW for each output - allows to direct connection most of electrical appliances without the use of contactor.
- .. Wide range of temperature settings.

SCOPE OF DELIVERY

- .. 1x Thermostat (the main panel)
- .. 1 x Power module
- .. 2 x Temperature sensor
- .. 1 x Operating manual

TECHNICAL DATA

- .. Energy consumption: < 2 W
- .. Storage temperature: -5 ÷ 50 °C
- .. Displayed temperature: -20 ÷ 100 °C every 0,1 °C
- .. Setting range: 5 ÷ 90 °C co 0,5 °C
- .. Accuracy: 1 °C
- .. Hysteresis: 1 ÷ 10 °C co 1 °C
- .. Maximum load: 2kW
- .. Power supply: 230V AC
- .. Casing: ABS
- .. Display: LCD (3,2``)
- .. Control: Electronic
- .. Protection rating: IP30
- .. Memory of settings: 12 months

TEMPERATURE SENSORS

The thermostat is compatible with NTC 10kΩ sensors having the following characteristics:

Temperature [°C]	Resistance [Ω]
-40	346 405
-30	181 628
-20	99 084
-10	56 140
0	32 960
10	20 000
20	12 510
25	10 000
30	8 047
40	5 310
50	3 588
60	2 476
70	1 743
80	1 249
90	911
100	647

GENERAL CONSIDERATIONS

- ⚠ Thermostat gives 230V voltage on the output (support of pump, valve, air damper, heating mat etc.). If thermostat has to operate normally open/normally closed device, so-called: contact device (for example: gas heating stove), it will be required additional normally open/normally closed relay. We have these relays in our offer.
- ⚠ The sensors can be extended to any length but we should remember that extension above 10m may cause a deviation of measurement with each meter and falsifying results. Therefore, for distance above 10m device has to be calibrated. Sensors have to be extend of wires: 2x 0,75 mm².

THERMOSTAT INSTALLATION

IB-Tron 3100HT-2Z thermostat consists of two parts: main panel with LCD display, keyboard and power module, with input terminals and output terminals.

Both of modules are connected with each other by five wire cable, with a length of several centimeters.

Main panel is adapted to mounting on a standard, square wiring box (spacing of holes - about 60mm). Power module is predicted to be placed inside this box. In such a case, thermostat sticks out only a few millimeters from the wall and it looks very aesthetically.

- ⚠ During installation of thermostat, the supply of electricity should be turned off. It's recommended to entrust the installation a specialized institution.

OPERATING PRINCIPLE

Thermostat measures the temperature. If this temperature is below the current desired value, the thermostat wants to run heating device to raise temperature to the desired level.

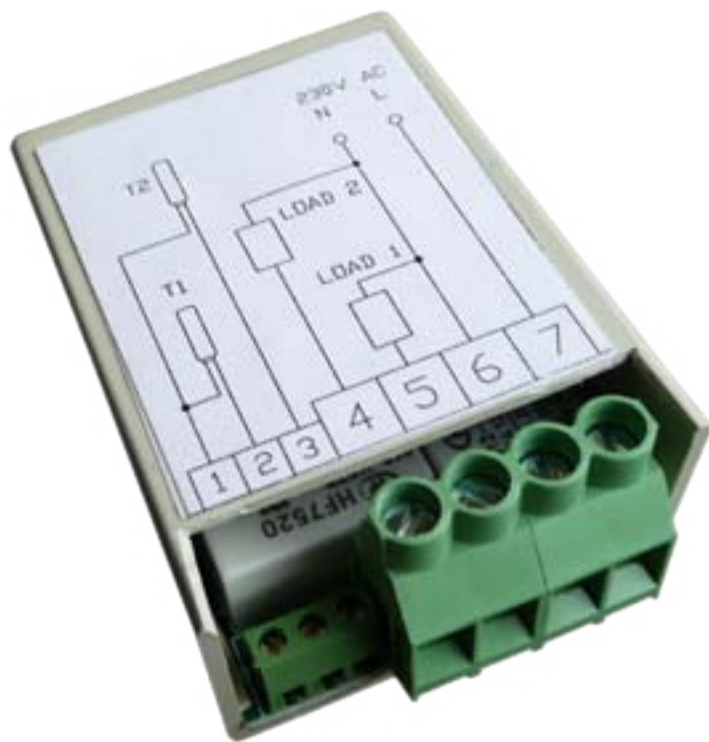
Thermostat has 2 channels. It means that it integrates two independent devices. Each has its own temperature sensor and output for actuating device. Both channels operate simultaneously. On display at the moment is shown state of one of them. User can choose, which of channels is presented at the moment.

EXAMPLE OF APPLICATIONS

- .. **Room thermostat** - controlling of temperature in room or entire building.
- .. **Tank thermostat** - controlling of temperature in the hot water tank.
- .. **Floor thermostat** - controlling of floor temperature.
- .. **Pump controller** - switching on the pump after reaching suitable temperature by the boiler (logic is reversed by additional relay).
- .. Independent control of temperature in 2 rooms, if each room has own heating device (e.g. radiator) or regulatory device (e.g. valve).

STRUCTURE

POWER MODULE



Connection:

1, 2 - between these terminals put temperature sensor **T1**;

1, 3 - between these terminals put temperature sensor **T2**;

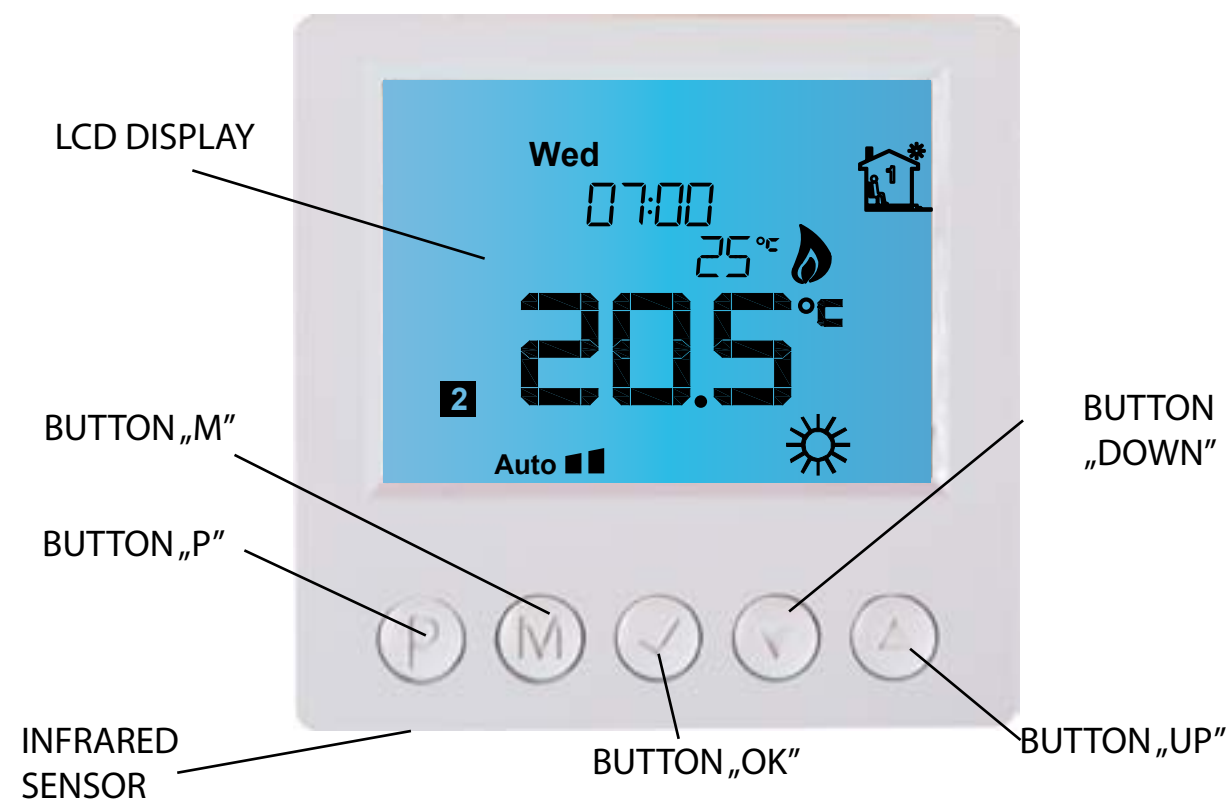
4 - on this output will appear phase, if heating process is implemented for channel **No 2**. Connect actuating device between this terminal and terminal **No. 6**;

5 - on this output will appear phase, if heating process is implemented for channel **No. 1**. Connect actuating device between this terminal and terminal **No. 6**;

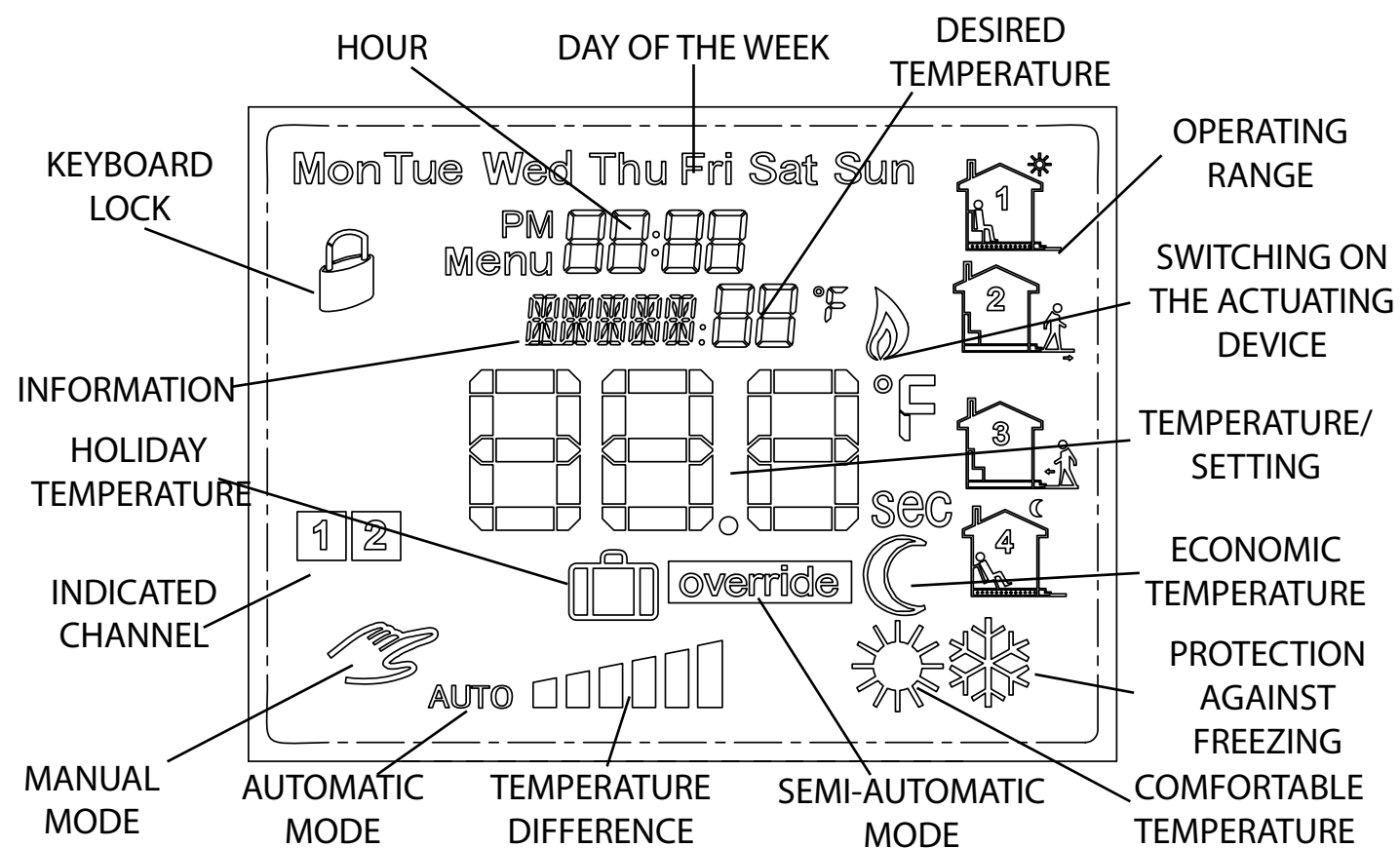
6 - neutral wire of power supply 230V;

7 - phase wire of power supply 230V;

CONTROL PANEL OF THERMOSTAT

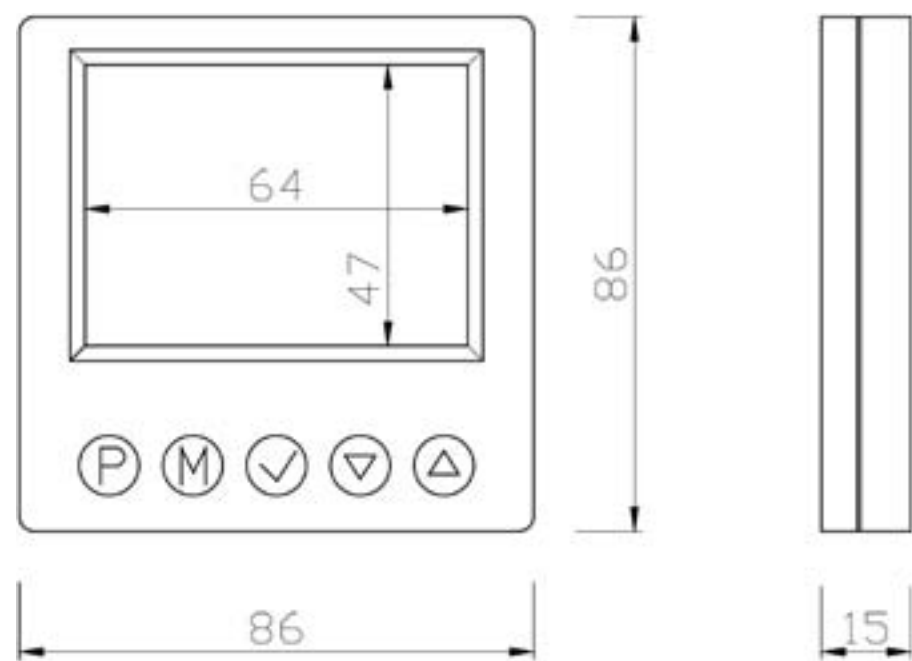


LCD DISPLAY

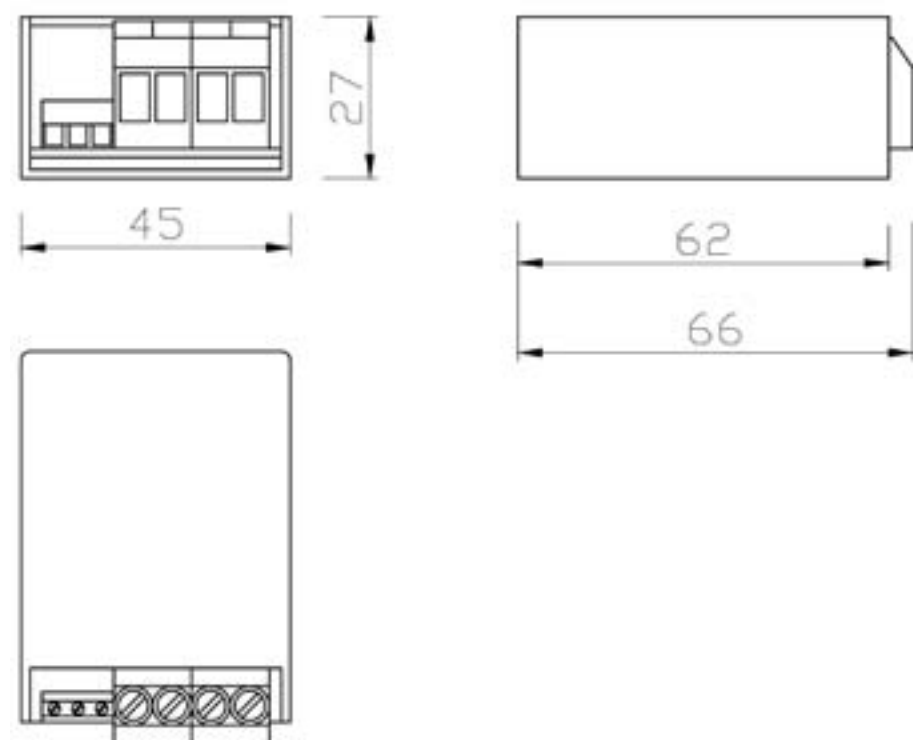


DIMENSIONS

MAIN PANEL

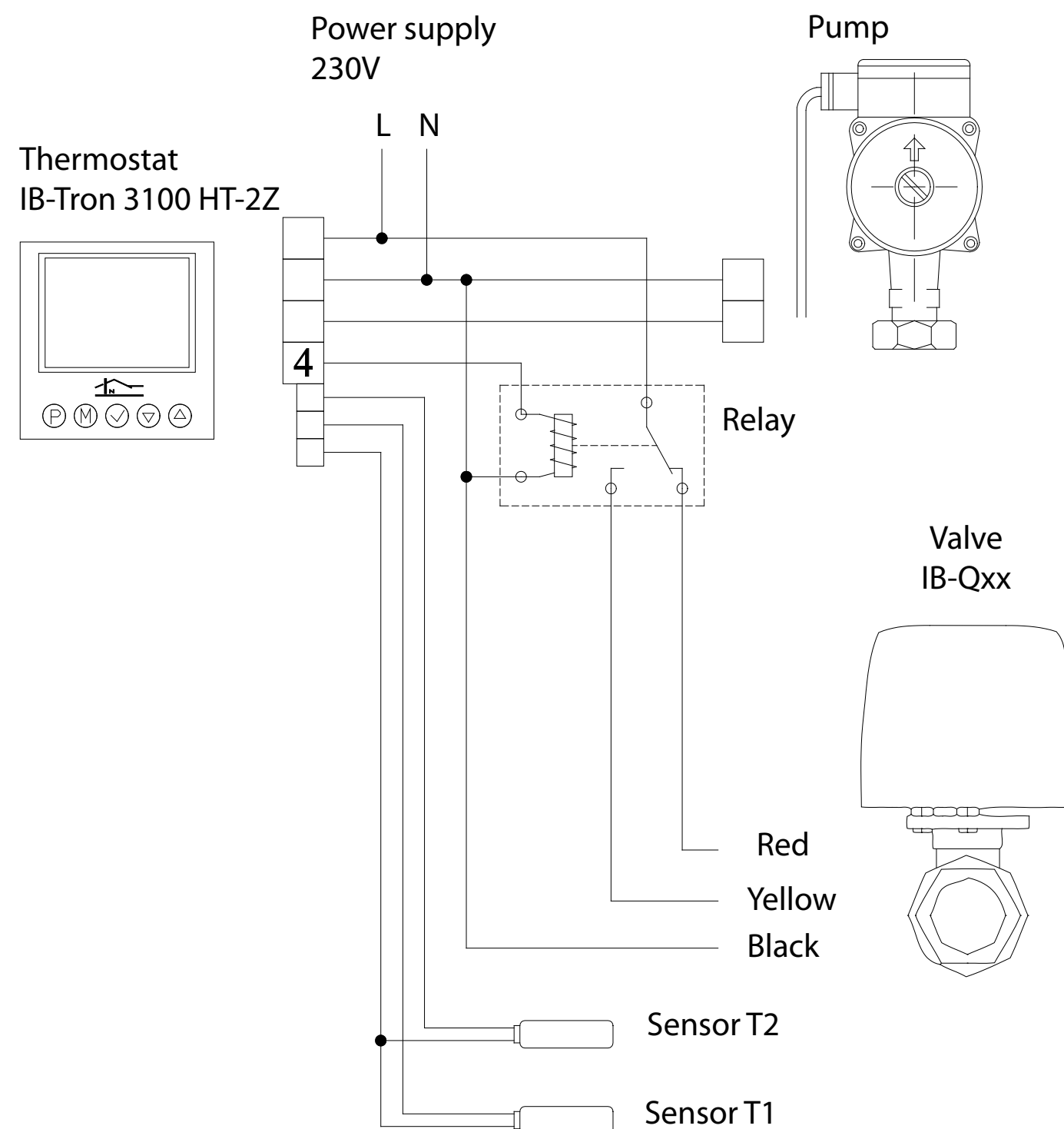


POWER MODULE



EXEMPLARY CONNECTION OF THERMOSTAT

Exemplary connection of thermostat is presented below. Thermostat controls the temperature of two objects. In the first channel the pump is an actuating element - pump is switching on when temperature of sensor **T1** falls below the set value. In the second channel the shut-off ball valve IB-Qxx is an actuating element. Valve is opened when temperature of sensor **T2** falls below the set value. Valve is controlled by an additional relay, which allows to close the valve when set temperature will be reached.



TURNING ON THERMOSTAT

P To turn on or turn off thermostat, you have to press button **,P'**.

When the thermostat is turned off, on display is shown only current temperature selected channel. Temperature is not regulated, actuating devices are turned off.

CONFIGURATIONAL MENU

In configurational menu are set parameters of thermostat work for currently indicated channel. Each channel may have individual settings. To enter to the configurational menu, please:

P If thermostat is turned on, please turn it off by pressing button **,P'**.

M When the thermostat is turned off, press and hold for about 3 seconds button **,M'**.

Thermostat is in configurational mode. Displayed are: inscription **,Menu'**, setting number (from **01** to **08**), code shortcut of setting (e.g. **,Sd'**), value and unit of setting.

▽ To change value of indicated setting, press button **,DOWN'** or **,UP'**.



M To move to the next setting, press button **,M'**. After reaching the last (eighth) setting, pressing the button **,M'** again causes return to the first setting.

Thermostat comes out of the configurational menu after a set time of inactivity or after pressing the buttons **,P'**.

HYSTERESIS

Hysteresis means a difference (in °C or °F) between threshold of switching on and switching off the actuating device. For example: If set temperature is 20°C and hysteresis is set on 1°C, the actuating (heating) device will be switched on when the temperature falls below 19,5°C and device will be switched off when the temperature increases above 20,5°C. Next switching on of actuating device will be again after temperature decrease below 19,5°C.

Higher value of hysteresis reduces number of cycles switch on/switch off of actuating device (saving device), but it causes greater temperature fluctuations.

To change value of hysteresis, please:

M Enter to the configurational menu. Press button **,M'** until you see on display setting number **01**, marked as **,Sd'**.

▽ Set desired value. Hysteresis may be set from the range 1÷10°C. Exit the configurational menu or move to other setting.



CALIBRATION

After proper connection the thermostat is ready to work. The thermostat is factory calibrated to work with standard sensor. However, with long wires, displayed temperature may be different from real temperature.

In this case you have to calibrate the device by yourself.

CALIBRATION

To calibrate sensor, please:

M Enter to the configurational menu. Press button **,M'** until you see on display setting number **02**, marked as **,Tc'**.

▽ Set value indicating, how many degrees we have to change current indication of temperature to get correct measurement. Value may be set from the range -5÷5°C, with step 1°C. Exit the configurational menu or move to other setting.



TIME OF INACTIVITY

It is the time, counted from the last press of any button, after which the controller comes out from the settings mode of parameters to default mode. Higher value gives the user more time to enter settings.

To set time of inactivity, please:

M Enter to the configurational menu. Press button **,M'** until you see on display setting number **03**, marked as **,PTD'**.

▽ Set desired value. Value may be from the range 5÷30s with step **5s**. Exit the configurational menu or move to other setting.



TIME OF BACKLIGHT

This is a time, after which is fading of LCD backlight, counted from the last press of a button.

CZAS PODŚWIETLANIA

To set time of backlight, please:

M Enter to the configurational menu. Press button **,M'** until you see on display setting number **04**, marked as **,BL'**.

▽ Set desired value. Value may be from the range from 0 (backlight is always turned on) to **10s** with step 1s. Exit the configurational menu or move to other setting.



TEMPERATURE UNITS

User has ability to choose if the temperature must be in °C or °F. To change temperature format, please:

M Enter to the configurational menu. Press button **,M'** until you see on display setting number **05**, marked as **,TF'**.

▽ Select temperature unit. Exit the configurational menu or move to other setting.




TIME FORMAT

User has ability to choose if the time must be displayed in 12-hour format or 24-hour. To change time format, please:

M Enter to the configurational menu. Press button **,M'** until you see on display setting number **06**, marked as **,CLOCK'**.

TIME FORMAT

 Select format 12-hour or 24-hour. Exit the configurational menu or move to other setting.




NUMBER OF TEMPERATURE SETTINGS

Thermostat, in automatic mode, has the ability to program four different time segments during the day, each of them with assigned temperature setting. There are two ways of selection the temperature settings:

- » Each segment has independent temperature setting (there are four different temperature settings)
- » There are two different temperature settings: comfortable setting (for segments 1 and 3) and economic setting (for segments 2 and 4)

To set number of independent values of temperature settings, please:

 Enter to the configurational menu. Press button **,M'** until you see on display setting number **07**, marked as **,SC'**.



Select number of different temperature settings: **2** or **4**. Exit the configurational menu or move to other setting.



FROST PROTECTION FUNCTION


FROST PROTECTION function protects installation against freezing.



When measured temperature falls below 5°C, actuating device is activated.

FROST PROTECTION FUNCTION

To turn on FROST PROTECTION function, please:

 Enter to the configurational menu. Press button **,M'** until you see on display setting number **08**, marked as **,FP'**.




Select value **,On'** (function is turned on) or value **,OFF'** (function is turned off). Exit the configurational menu or move to other setting.



AN HOUR AND A DAY OF THE WEEK

To set current hour and a day of the week, please:

 Turn on thermostat.



Press and hold for about 5 seconds button **,OK'**. Displayed hour starts flashing.



Set current hour.



Press button **,OK'** again. A day of the week starts flashing.



Set day of the week:

Mon - Monday
Tue - Tuesday
Wed - Wednesday
Thu - Thursday
Fri - Friday
Sat - Saturday
Sun - Sunday



Confirm settings.

FACTORY SETTINGS

To reset thermostat and go back to factory settings, please:



Turn off thermostat.



Press and hold for about 3 seconds both buttons: **,M'** and **,OK'** simultaneously. On display will show for about 5 seconds inscription **,RESET'**.



KEYBOARD LOCK

To protect thermostat from unwanted change settings, you can lock thermostat keyboard.

When keyboard lock is activated, on display is visible a padlock symbol and keyboard doesn't respond to pressing keys.

To activate/deactivate keyboard lock, please:



Press and hold for about 3 seconds both buttons: **,DOWN'** and **,UP'** simultaneously.



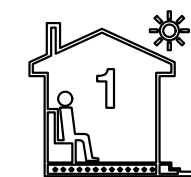
WORK SCHEDULER

In automatic mode we can set a work scheduler. It means setting suitable temperature at concrete hour.

With scheduler you can set lower temperature (economic temperature) in periods when e.g. building/room is not used or in nocturnal periods, and higher temperature (comfortable temperature) when building/room is used.

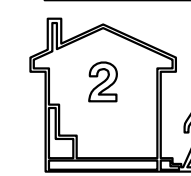
WORK SCHEDULER

In automatic mode we can set a work scheduler. It means setting suitable temperature at concrete hour:



Comfortable temperature

e.g. 7:00 a.m. - reveille



Economic temperature

e.g. 9:00 a.m. - outgo the house



Comfortable temperature

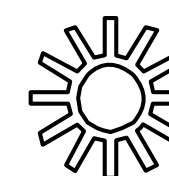
e.g. 3:00 p.m. - return to house



Economic temperature

e.g. 9:00 p.m. - sleep

A temperature symbol is visible together with the time segment symbol to know what type of temperature the time range concerns:



Comfortable



Economic

Symbol will be displayed, if thermostat operates in mode with two temperatures' settings (comfortable and economic, parameter **SC** in the configurational menu with value 2). If thermostat operates in mode with individual value of setting for each time segment (with four values of settings, parameter **SC** in the configurational menu with value 4), these symbols are not presented.

WORK SCHEDULER

To make your own work scheduler, please:

P Turn on the thermostat. Make sure, that thermostat is set in automatic work mode (on display is shown inscription **,AUTO'**).

M If instead inscription **,AUTO'** on display is hand symbol (manual mode), press button **,M'**. Pressing this button when thermostat is turned on, causes switching between manual mode and automatic mode.

P Press and hold for about **5** seconds button **,P'**. On display will show inscription **,PROG'** and current day of the week starts flashing.

▽ Select a day of the week by buttons **,DOWN'** and **,UP'**, which concerns setting. To select all days of the week, press and hold for about **3** seconds button **,DOWN'**.

P Confirm choice with the button **,P'**.

! The following steps describe programming one of time segments. You have to repeat these steps for all four time segments. On the right on display is shown segment symbol, which concerns the setting.

▽ On display starts flashing an hour, about which work segment will start. Set the hour.



P Confirm choice with the button **,P'**.

WORK SCHEDULER

▽ On display starts flashing temperature set for the work segment. Set the temperature.



P Confirm choice with the button **,P'**.

! After programming all **four** time segments the thermostat returns to standard displaying mode.

! The fourth time segment lasts until the beginning of the first time segment the next day (e.g. from **9:00** p.m. on Monday to **7:00** a.m. on Tuesday).

! If there is no need to use all four time segments, you can set short time segments for example:

- » 1. 7:00
- » 2. 7:01
- » 3. 7:02
- » 4. 15:00

MANUAL MODE

In manual mode the thermostat constantly keeps desired temperature (without work timetable).

! If thermostat works in manual mode, on display is visible hand symbol and time segment symbol is not visible.

! Termostat pozostaje w trybie ręcznym dopóki użytkownik nie zmieni go na tryb automatyczny.

To change mode to manual/automatic, please:

MANUAL MODE

M When thermostat is turned on, press button **,M'**.

To set desired temperature in manual mode, which the thermostat has to keep, please:

▽ Press button **,DOWN'** or **,UP'**. On display will appear current temperature setting. Enter a new value.



✓ Confirm choice with the button **,OK'**.

SEMI-AUTOMATIC MODE

In semi-automatic mode is manual correction of desired temperature in current time segment. After the end of the current time segment, thermostat returns to the automatic mode and works with the timetable.

! You can move to semi-automatic mode only from automatic mode.

To enter manual temperature correction for current time segment, please:

▽ When thermostat is in the automatic mode, press button **,DOWN'** or **,UP'**.

△ On display will appear current temperature setting. Enter a new value.

✓ Confirm choice with the button **,OK'**.

! When thermostat is in the semi-automatic mode, on display is inscription **,override'**. Symbol of the current time segment disappears.

SEMI-AUTOMATIC MODE

To cancel temperature correction before the end of current time segment and return to the scheduler, please:

△ Press and hold for about 3 seconds button **,UP'**.

HOLIDAY MODE

In holiday mode the thermostat constantly keeps desired holiday temperature (default 10°C).

! If thermostat works in holiday mode, on display is visible suitcase symbol.

To turn on/turn off holiday mode, please:

▽ When thermostat is turned on, press and hold for about 3 seconds button **,DOWN'**.

To change desired value of temperature for holiday mode, please:

▽ When thermostat is in the holiday mode, press button **,DOWN'** or **,UP'**. On display will appear current temperature setting. Enter a new value.

✓ Confirm choice with the button **,OK'**.

STATE OF WORKING

When the thermostat is working, on display is visible a flame symbol.

Additionally, bar ratio symbolically presents difference between prevailing temperature (indicated temperature) and desired temperature (it shows how much heat is missing).

SWITCHING CHANNELS

⚠ Previously described thermostat's support and settings refer to one regulation channel.

⚠ User's interface (keyboard and display) allows to read and write data only for one channel at the moment, although both channels are controlled simultaneously in equivalent way.

⚠ Programming and support for both channels is independent. Turning off thermostat by button ,P' is exception, because it causes turning off both channels simultaneously.

To switch to the reading/setting another channel, please:

Ⓜ When the thermostat is turned on, press and hold for about 5 seconds button ,M'. It causes switching between the first and the second channel.

ERRORS

On display may appear symbols that signify:

- .. **LO** - temperature in current channel is lower than -20°C
- .. **HI** - temperature in current channel is higher than 100°C.
- .. **ERR** - temperature sensor of current channel is not connected or is damaged.

⚠ In cases above, for safety, actuating device is turned off.

WARRANTY

- .. Warranty is granted on 24 months from the date of purchase of goods.
- .. Any defect disclosed during the warranty period will be removed within 21 working days, from the date of adoption of goods for service.
- .. In case of necessity of import goods or components from abroad, repair time is extended by the time needed to bring them.
- .. Customer provides product to service at his own cost. If the product is shipped at the expense of the service, it won't be received.
- .. At time repair service has no obligation to provide substitute product.
- .. Warranty repair will be made upon presentation of properly and legibly filled your warranty card, signed by guarantor and with sales document.
- .. Warranty covers only defects arising from causes inherent in goods. Damage resulting from external causes such as: mechanical damage, pollution, flooding, weather, improper installation

WARRANTY

- .. or improper wiring and operations. Warranty does not apply in case unauthorized repair by customer, changes in software (firmware) and device formatting.
- .. Due to the natural consumption of consumables, some of them are not covered by warranty (for example: cables, battery, loader, micro contacts, buttons).
- .. In the event of unjustified claim for warranty repair, all additional cost are on customer's side.
- .. Service has right to refuse to perform warranty repairs for following: differences between documents and goods marks, make repairs on their own by customer, changes in product construction without authorization.
- .. Warranty repair refusal is equivalent to loss your warranty.
- .. If it is not possible to test product before its purchase (distance selling), it is possible to return goods within 10 days. Returned goods cannot bear signs of exploitation, it must contain all elements with which it was delivered.
- .. In the case of return of purchased goods all shipping costs are on buyer side. For shipment please enclose purchase document and give precise details of the buyer with account number on which will be refunded an amount equal to the value of the returned goods, no later than 21 days from the date of delivery of the goods. This amount is reduced by shipping costs if these costs were incurred by the seller. Delivery of copy of document correction is necessary to a refund. Before return of goods please contact with seller.

WARRANTY

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