Electronic thermostat
# IB – Tron 1000 HT
to operate two and three-point devices.

Products is  CE

marked and has been produced in accordance with ISO 9001 standard

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v2.0

# Contents

| IB-TRON 1000 HT |
|---|

## BASIC INFORMATION

**IB-Tron 1000 HT** 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 (on/off).

**IB-Tron 1000 HT** thermostat allows to control process of heating and cooling. It allows to maintain the desired temperature in building/room according to fixed weekly work scheduler.

**IB - Tron 1000 HT** thermostat allows to save energy costs. Thermostat contributes to protect environment. **IB-Tron 1000 HT** 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.
☞ Easy, intuitive operating and programming.
☞ Power supply from network 230V with baterry clock backup.
☞ Non-volatile memory setting.
☞ Comprehensive programming process in a weekly cycle with an accuracy of 1 minute and with possibility of programming four time periods each day.
☞ Manual and automatic control.
☞ Adjustable three heating temperatures:

» Comfortable
» Economic
» Holiday

## FEATURES

☞ Support of two temperature sensor:

» **RT** - buit-in room temperature sensor. It can be replaced by external sensor.
» **FT** - additional external temperature sensor e.g. floor area, hot water tank.

☞ Three modes of thermostat operating:

» **A** - Device control is based only on built-in temperature sensor (**RT**).
» **F** - Device control is based only on connected external sensor(**FT**).
» **AF** - Device control is based on built-in sensor (**RT**) and input of additional temperature sensor (**FT**) has one of three functions, described later in this manual: lower limit, upper limit or digital input.

☞ Displayed temperature with 0,1 ºC accuracy
☞ The possibility of calibrate device (external sensors on long wires, independent calibration of **FT** and **RT**)
☞ Adjustable hysteresis
☞ **GUARD function** - protection devices from damage.
☞ **TEST function** - Forced turning on and turning off device.
☞ Large load - to 2 kW - allows to direct connection most of electrical appliances without the use of contactor.
☞ Network, **RS - 485** communication (optional)
☞ The possibility of remote control (optional)
☞ Keyboard lock
☞ Wide range of temperature settings.
☞ The possibility of directly control an actuating module (power supply 230V on control output) or control a gaz boiler (optional - thermostat's output is po-

## FEATURES

tential-free normally open contact).

## TECHNICAL DATA

☞ Energy consumption: < 2 W
☞ Storage temperature: -5 ÷ 50 ºC
☞ Displayed temperature: -20 ÷ 140 ºC every 0,1 ºC
☞ Setting range: -20 ÷ 99 ºC every 0,5 ºC
☞ Setting range of FT temperature limit: -20 ÷ 99 ºC every 0,5 ºC
☞ Accuracy: 1 ºC
☞ Hysteresis: 0,1 ÷ 0,5 ºC every 0,1 ºC 0,5 ÷ 5,0 ºC every 1 ºC
☞ Hysteresis of **FT** temperature limit (in the AF mode): 1 ÷ 5 ºC every 1 ºC
☞ Maximum load: 2000 W
☞ Power supply: 230V AC
☞ Casing: ABS
☞ Dimensions [mm]: 120x120x23
☞ Display: LCD (4``)
☞ Control: Electronic
☞ Protection rating: IP30
☞ Clock backup: 36 moths

## AVAILABLE MODELS

☞ **BL** - blue backlight (backlight is activated by pressing any button and deactivated after a certain period of inactivity)
☞ **RC** - IR remote control
☞ **NW** - thermostat to work in the network (**RS485** communication)
☞ **230V** - thermostat with output 230V
☞ **NO** - thermostat with normally open output.

## SCOPE OF DELIVERY

☞ 1x Thermostat (the main panel)
☞ 1x Power module
☞ 1x Built-in temperature sensor
☞ 1x Operating manual
☞ 1x Operating manual for network (only with **NW** model)
☞ 1x 1 x Pilot of remote control with battery (only with **RC** model)

## GENERAL CONSIDERATIONS

⚡ The thermostat gives 230V voltage on the output (support of pump, valve, air damper, heating mat etc.). It's possible to modify the output - during switching the output terminals can be potential-free shorted (cooperation with a typical gas stove).

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

⚠ **IB-Tron 1000HT** thermostat consists of two parts: main panel with LCD display, keyboard and power module, with in-

## GENERAL CONSIDERATIONS

put terminals and output terminals.

⚠ Control panel is adapted to surface-mounting or to mounting on a standard wiring box (spacing of holes- about 60mm). Power module is predicted to be placed inside this box. Both of modules are connected with each other by five wire cable, with a length of several centimeters.

⚠ Built-in **RT** sensor is complete with thermostat. **FT** sensor isn't supplied with thermostat. **RT** sensor is on the 20cm wire and it can be bring out at the back of casing.

⚠ **RT** sensor can be extended according to needs or it can be replaced by another type of sensor (if it's needed).

⚡ Change of **RT** sensor doesn't invalidate the warranty.

## 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 can cooperate with built-in internal sensor (mode **A**) or with external sensor (mode **F**). These modes are equivalent in terms of operating principle and options. Thermostats differ only sensor.

Mixed mode is also possible. In this mode thermostat cooperates with both sensors simultaneously (mode **AF**). Full description of mode **AF** is in the following section.

## TEMPERATURE SENSORS

⚠ 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.

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

| Temperature [ºC] | 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 |

## AF MODE

Thermostat **IB-Tron 1000HT**, working in mode **AF**, regulates the temperature based on built-in sensor **RT**, using also from the external sensor **FT**.

Thermostat, similarly as in mode **A**, switches heating device when temperature of sensor

## AF MODE

**RT** is below desired value, but only if suitable conditions set for sensor **FT** are met

Input **FT** in mode **AF** has one of three functions:

**1. Upper limit.**

In work mode **AF** with upper limit, thermostat is trying to keep desired temperature on the sensor **RT**, but only if temperature of sensor **FT** is lower than value limit of sensor **FT**. If temperature of sensor **FT** is higher than value limit, actuating device is disabled (even if desired temperature of sensor **RT** is not reached).

A good illustration of mode **AF** with upper limit is floor heating. Thermostat is trying to keep desired air temperature e.g. 20ºC (sensor **RT**), but if maximum floor temperature is exceeded e.g. 38ºC (sensor **FT**), heating is disabled to avoid overheating the floor - even if desired temperature of sensor **RT** is not reached.

**2. Lower limit.**

In work mode **AF** with lower limit, thermostat is trying to keep desired temperature on the sensor **RT**, but only if temperature of sensor **FT** is higher than value limit of sensor **FT**. If temperature of sensor **FT** is lower than value limit, actuating device is disabled (even if desired temperature of sensor **RT** is not reached).

A good illustration of mode **AF** with lower limit is central heating system with buffer tank, from which heat is received. Thermostat is trying to receive desired air temperature e.g. 20ºC (sensor **RT**), but if the buffer tank (sensor **FT**) doesn't have a hot water (temperature is below the minimum limit, e.g. 35ºC), heating will not be switched on.
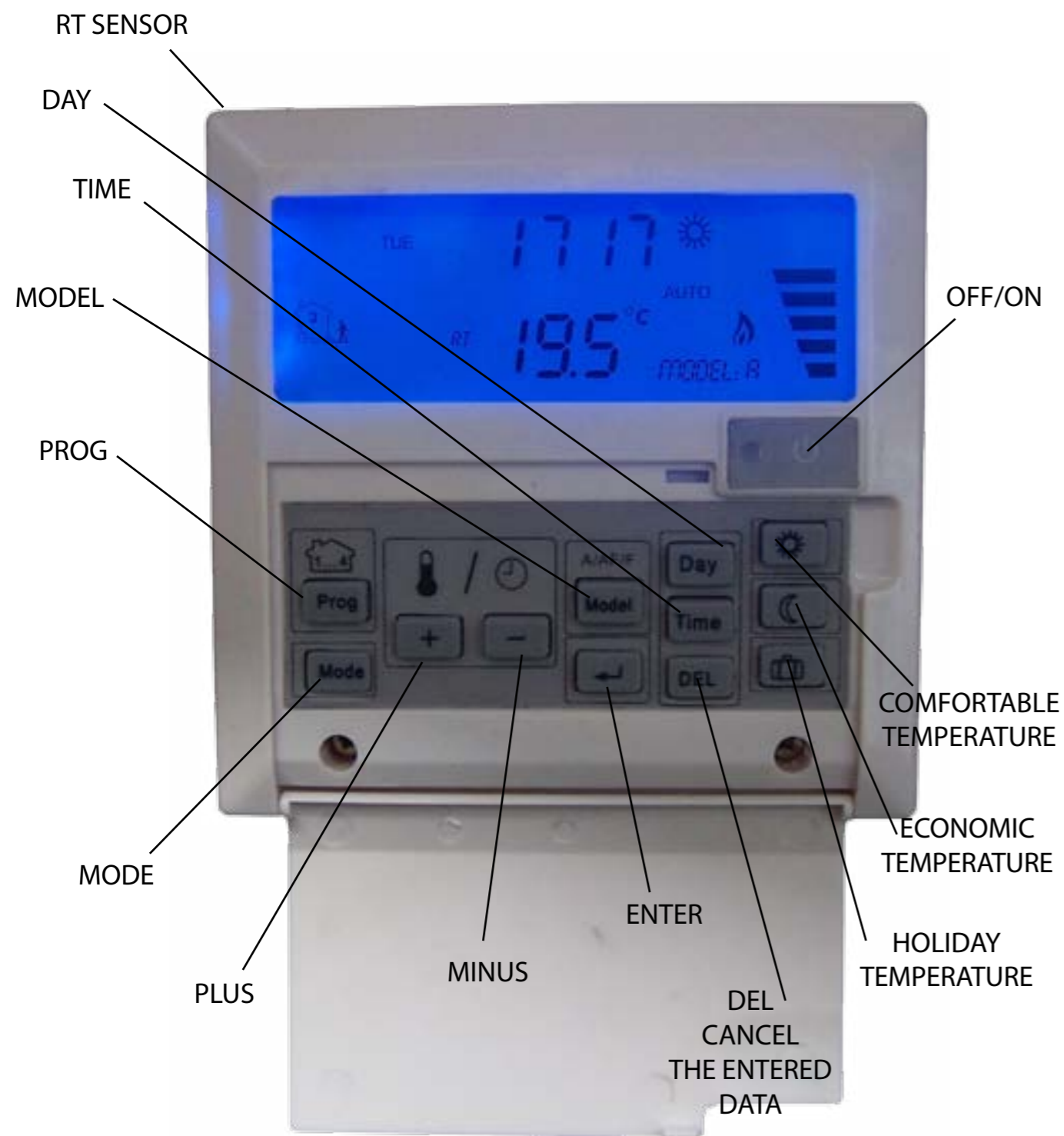
## AF MODE

**3. ‚Remote holiday' function.**

When you choose a remote holiday function, input of sensor **FT** operates as digital input - this input can be as **NO** or **NC**. The user chooses if state of active input **FT** has to be **NO** or **NC**.

If the input **FT** is active, thermostat automatically switches to holiday mode and keeps holiday temperature. If the input **FT** is not active, thermostat works in the last selected mode.
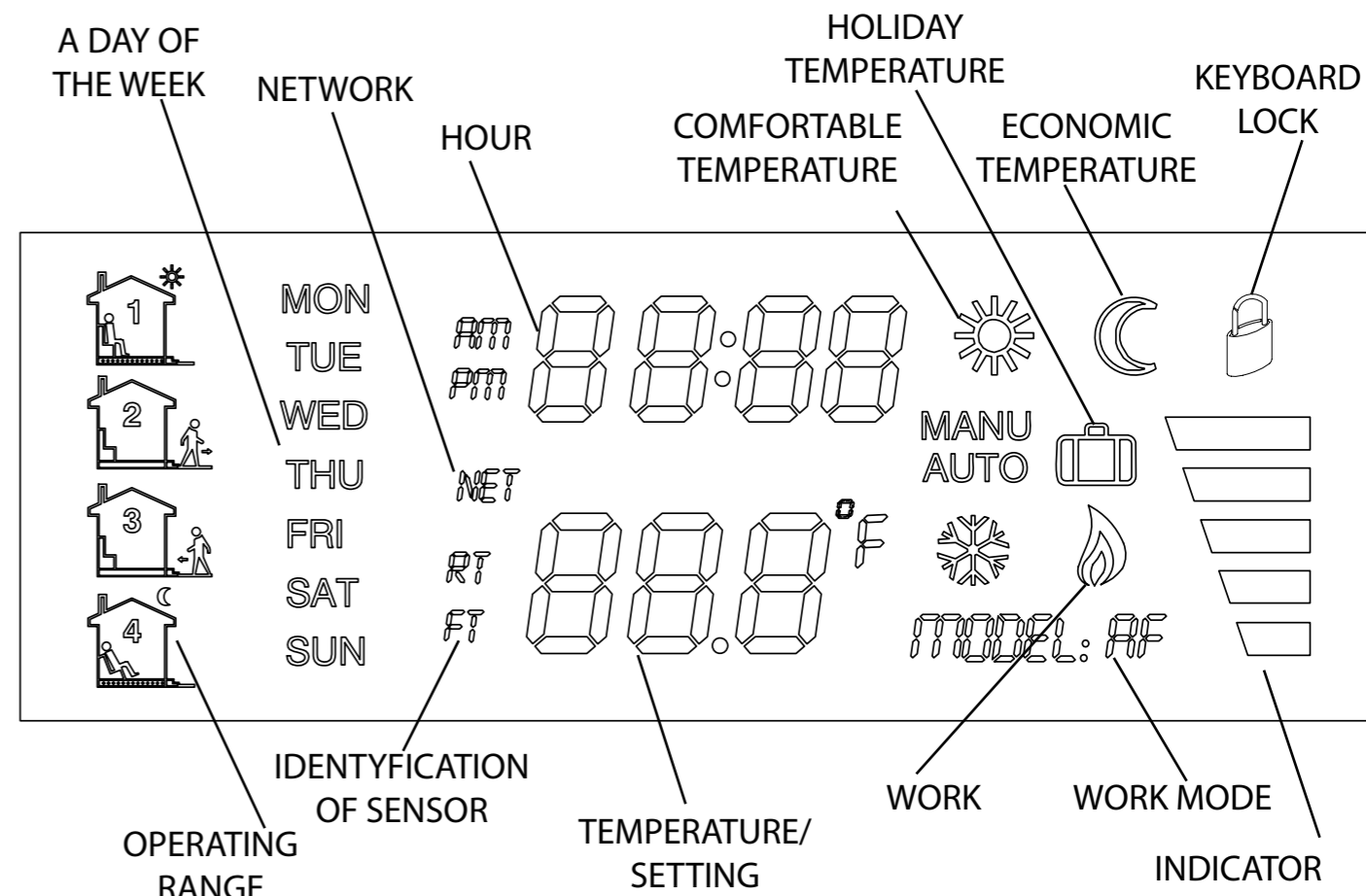
‚Remote holiday' mode has been added because GSM units and other systems of remote control by phone and internet became popular. This option is especially comfortable when householders leave for winter holidays. When householders are absent, lower holiday temperature can be set, but it would be best if householders have returned to preheated house. It's sufficient, when relay of the unit, which cooperates with the thermostat is remotely switched for a few hours before returning, thermostat goes out from the holiday mode and keeps a higher temperature in the house.

## STRUCTURE

RT SENSOR

DAY

TIME

MODEL

PROG

MODE

PLUS

MINUS

ENTER

OFF/ON

COMFORTABLE TEMPERATURE

ECONOMIC TEMPERATURE

HOLIDAY TEMPERATURE

DEL
CANCEL
THE ENTERED
DATA

Two loose wires with thermistor come out from the thermostat (internal sensor), it can be cut and connect external **RT** sensor.

## LCD DISPLAY

A DAY OF THE WEEK

NETWORK

HOUR

HOLIDAY TEMPERATURE

COMFORTABLE TEMPERATURE

ECONOMIC TEMPERATURE

KEYBOARD LOCK

MON TUE WED THU FRI SAT SUN

NET

RT FT

MANU AUTO

MODEL: AF

IDENTYFICATION OF SENSOR

OPERATING RANGE

TEMPERATURE/ SETTING

WORK

WORK MODE

INDICATOR

## POWER MODULE (WITH OUTPUT 230V)

Connection:

» **1, 2** - external **FT** sensor
» **3, 4** - power of thermostat 230V AC (**3** - wire phase, **4** - wire neutral)
» **5 -** on this output will be phase if heating process isn't implemented (when temperature is at the appropriate level, when the limit of **FT** sensor is active in the **AF** mode or when thermostat is turned off).
» **6** - on this output will be phase if heating process is implemented.

⚡ **ATTENTION!** Do not connect thermostats with voltage output to typical gas stove, because it causes its damage!
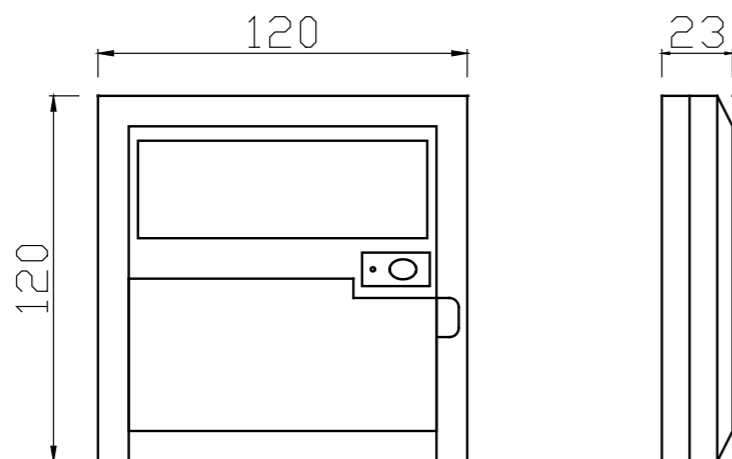
## POWER MODULE (WITH NORMALLY-OPEN CONTACT)
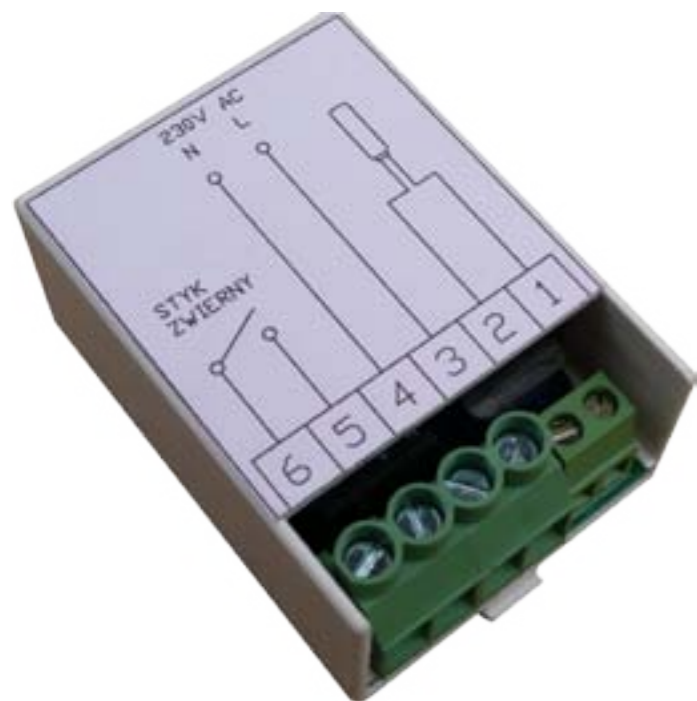


Connection:

» **1, 2** - external **FT** sensor
» **3, 4** - power of thermostat 230V AC (**3** - wire phase, **4** - wire neutral)
» **5, 6** - these two terminals are shorted when heating process has to be implemented. A signal can be used e.g. to run gas stove.
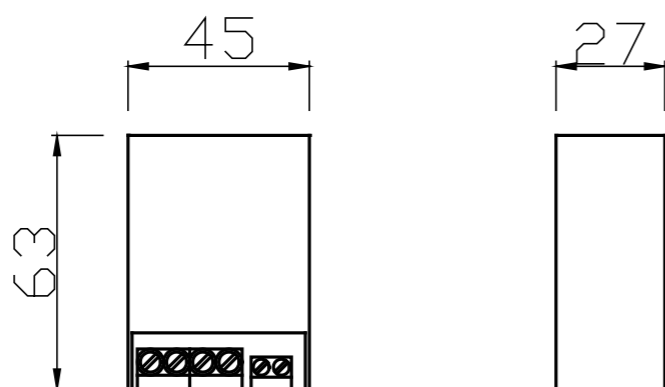
⚠ **ATTENTION!** The module with output 230V is default supplied.
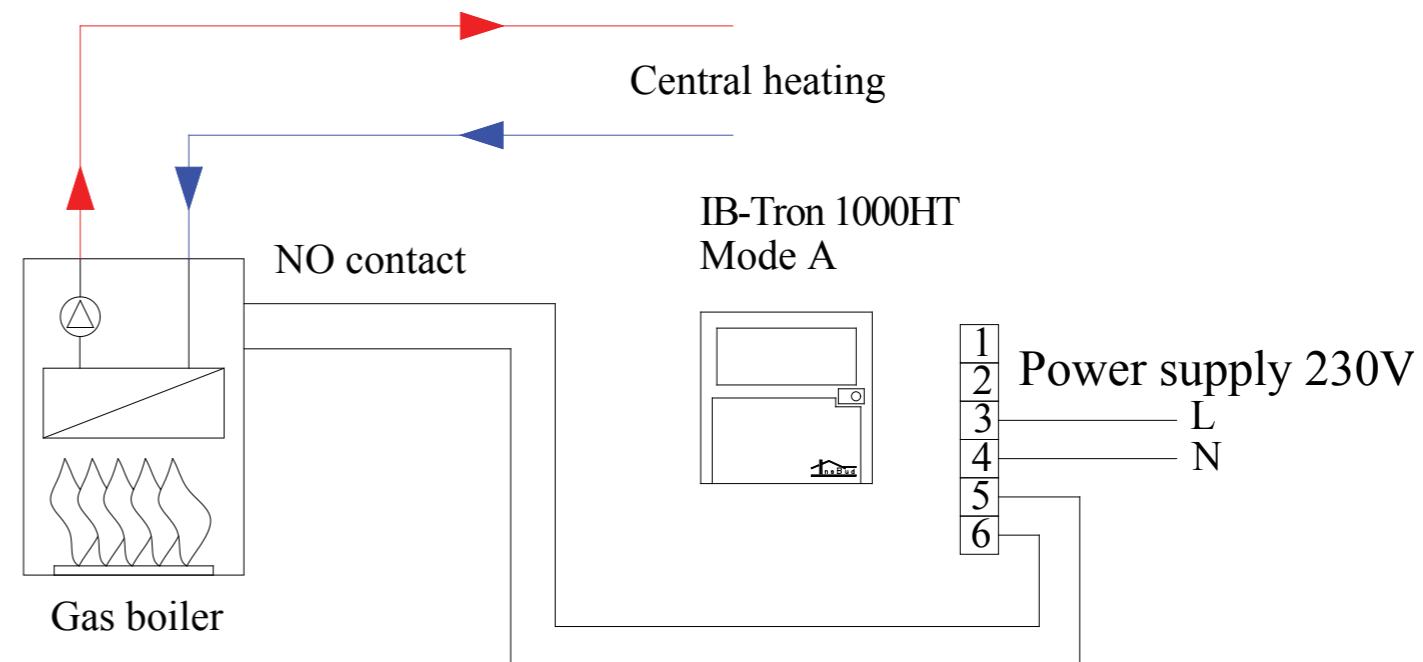
## DIMENSIONS

Dimensions of main panel (mm):



Dimensions of power module (mm)



## EXAMPLE OF APPLICATIONS

### IN WORK MODE A AND WITH NO CONTACT



Central heating

IB-Tron 1000HT
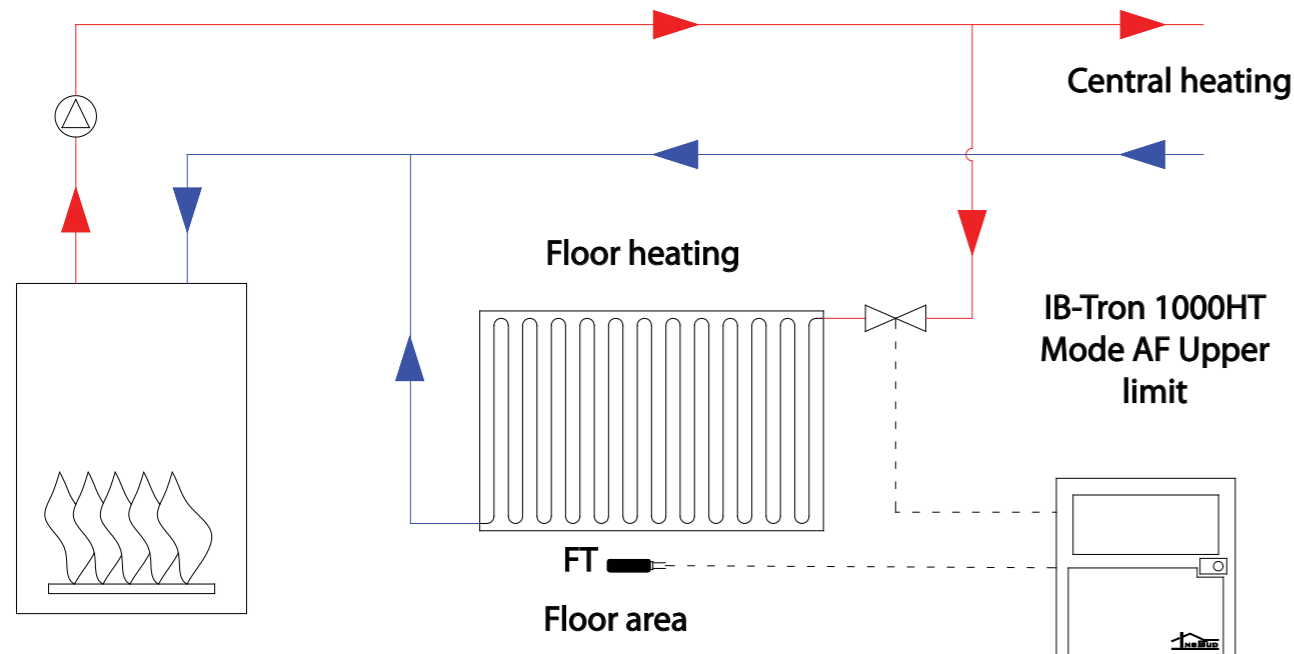Mode A

NO contact

Power supply 230V

Gas boiler

Thermostat measures temperature in the representative room by built-in **RT** sensor. If this temperature is lower than the desired temperature on the thermostat, terminals number **5** and **6** are shorted, which is a signal of switching gas boiler.

### IN WORK MODE F AND WITH VOLTAGE OUTPUT



Hot water

Hot water tank

FT

IB-Tron 1000HT
Mode F

Power supply 230V
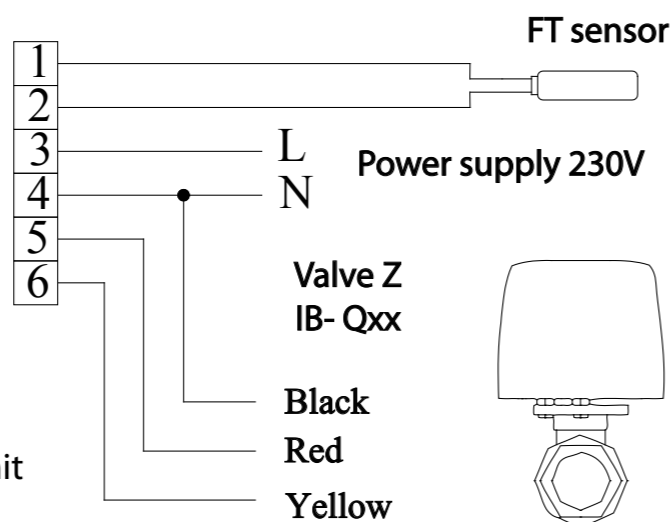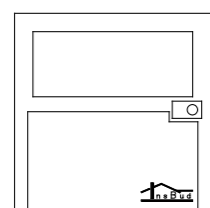
Heater

Cold water
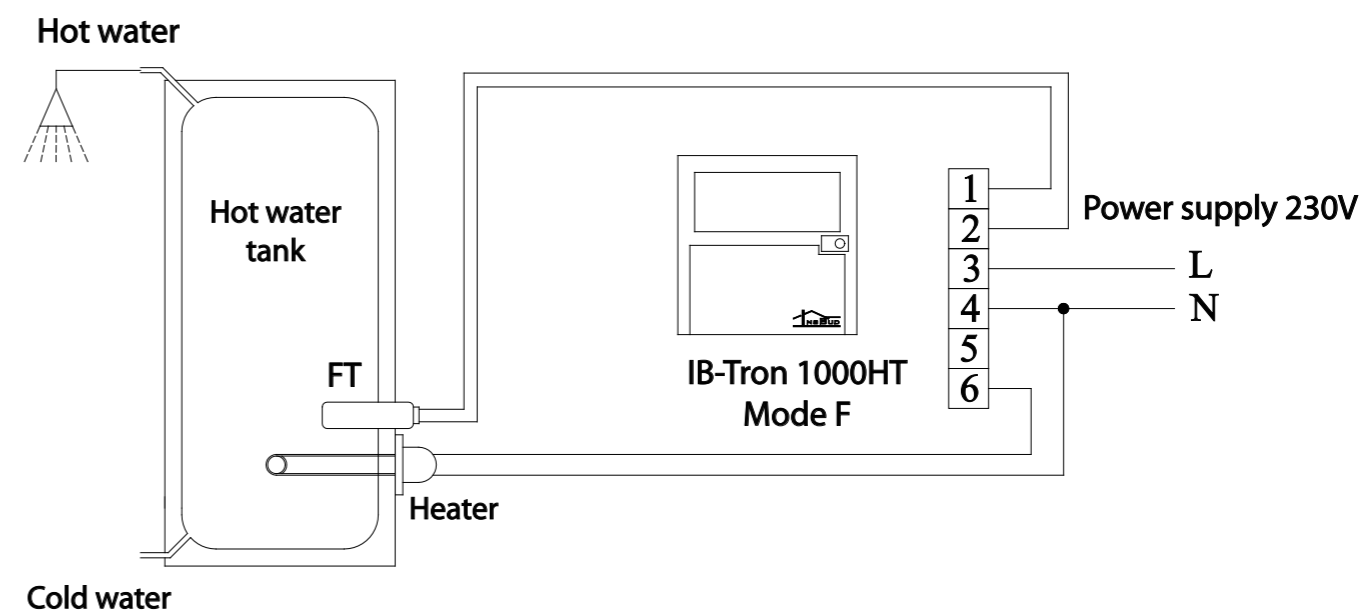
Thermostat measures temperature in the hot water tank by **FT** sensor. If this temperature is lower than the desired temperature on the thermostat, the terminal number **6** is shorted which allows to switching on an electric heater of tank.

## IN WORK MODE **AF** AND UPPER TEMPERATURE LIMIT

Central heating

Floor heating

IB-Tron 1000HT
Mode AF Upper
limit

FT
Floor area

IB-Tron 1000HT
Mode AF Upper
limit

FT sensor

1
2
3  L
4  N    Power supply 230V
5
6

Valve Z
IB- Qxx

Black
Red
Yellow

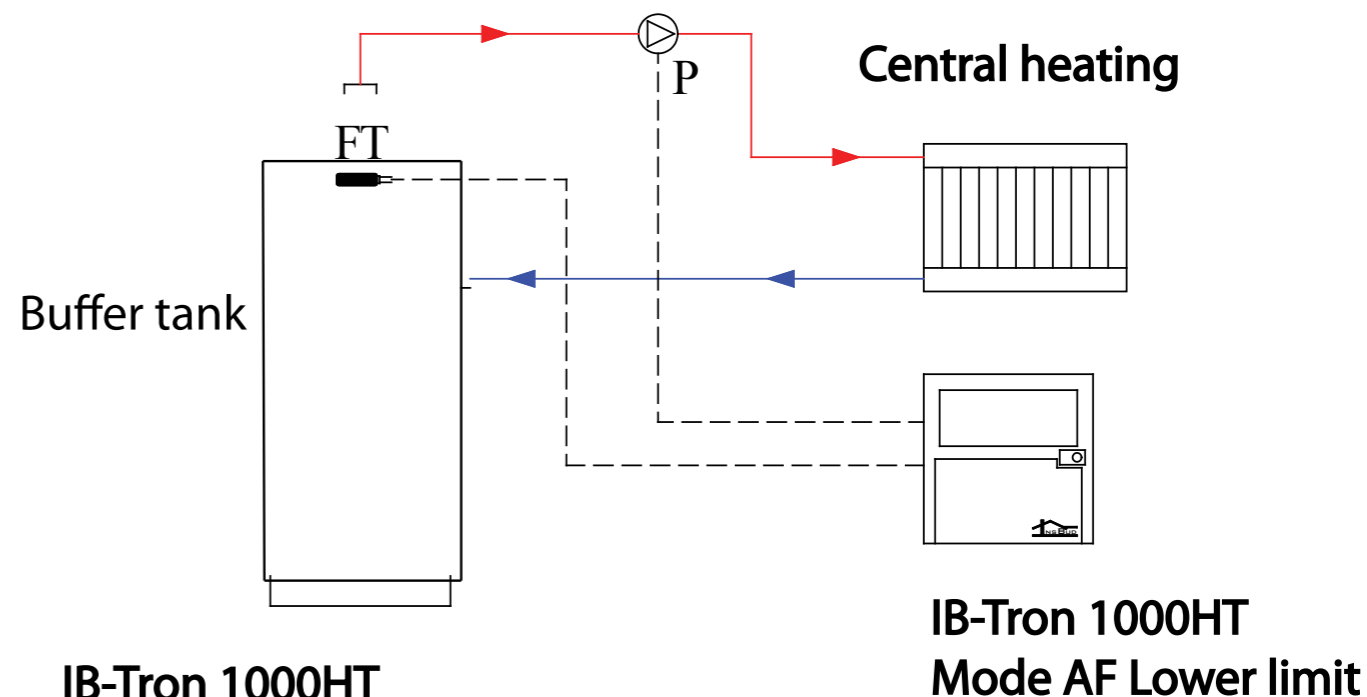Requirement of switching on:

**RT** temperature < set temperature

**FT** temperature < temperature of limit

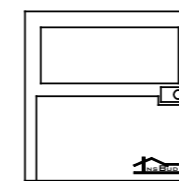Thermostat measures temperature in the representative room by built-in **RT** sensor. It controls floor heating by opening and closing the valve with actuator. If **RT** temperature is lower than the desired temperature on the thermostat, the phase is given on terminal number **6** (opening the valve). When temperature in the room reaches the desired value, the valve is closing (phase is given on terminal number **5**).

Additional, during opening the valve, thermostat controls temperature of floor area (**FT** sensor). If this temperature exceeds the desired limit (e.g. 30 ºC), the valve is unconditionally closing - even if temperature in the room (**RT** sensor) hasn't reached the desired value yet. The valve will open again after cooling down floor to lower temperature than limit's temperature. Temperature of **FT** sensor is limited from upper.

## IN WORK MODE **AF** AND LOWER TEMPERATURE LIMIT
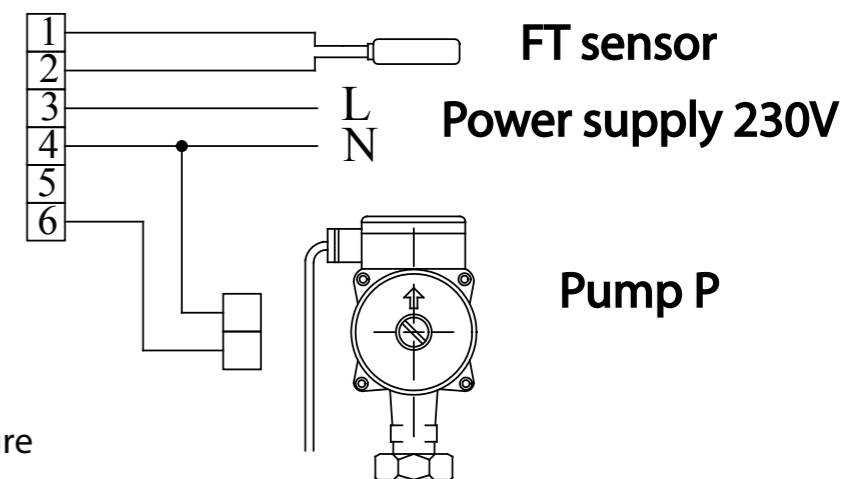
P

Central heating

FT

Buffer tank

IB-Tron 1000HT
Mode AF Lower limit

IB-Tron 1000HT
Mode AF Lower limit

1
2
3
4  L
5  N
6

FT sensor

Power supply 230V
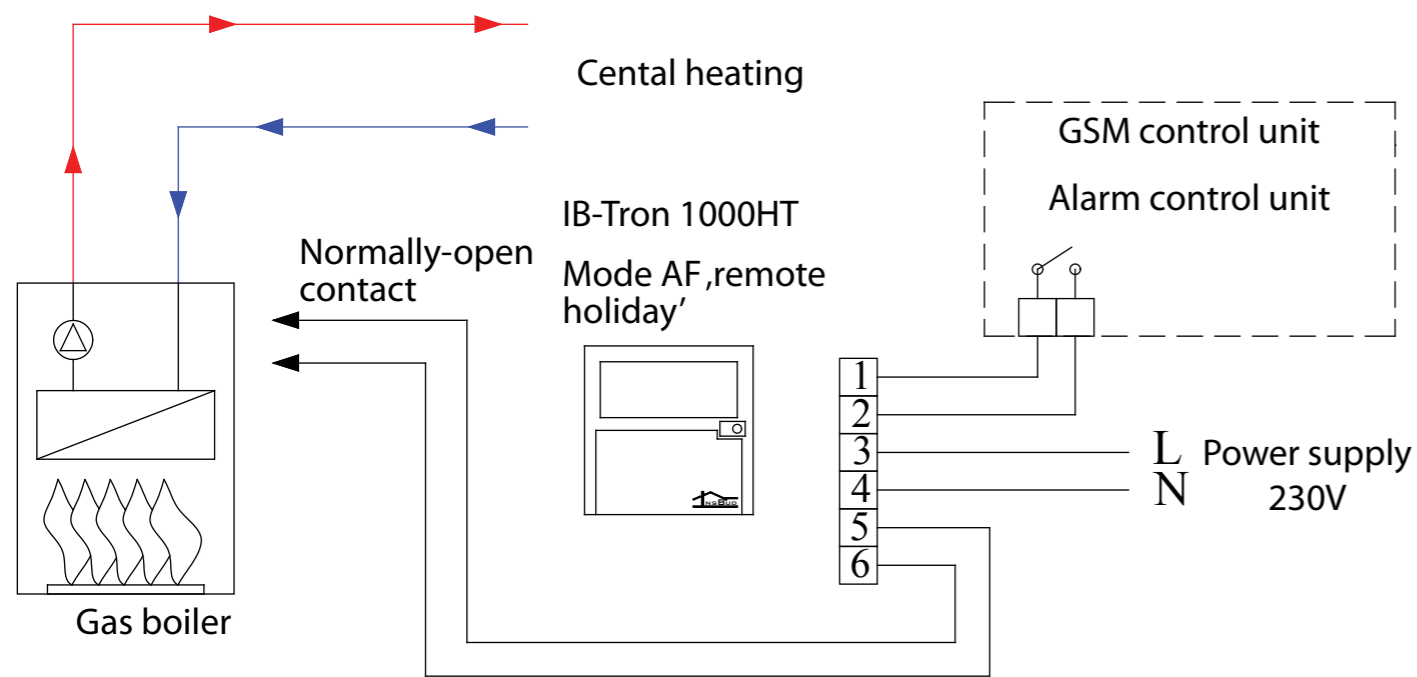
Pump P

Requirement of switching on:

**RT** temperature < set temperature

**FT** temperature > temperature of limit

Thermostat measures temperature in the representative room by built-in **RT** sensor. It controls central heating by switching on a circulating pump. A solid fuel boiler is a source of heatong. If **RT** temperature is lower than the desired temperature on the thermostat, the pump is started (phase is given on terminal number **6**).

Thermostat additionally controls temperature of boiler (**FT** sensor). If this temperature is lower than the desired limit (e.g. 35 ºC), it is a signal for thermostat that boiler is disabled. Thermostat will not run the pump even if temperature in the room (**RT** sensor) hasn't reached the desired value yet. Temperature of FT sensor is limited from down.

## IN WORK MODE AF AND FUNCTION 'REMOTE HOLIDAY'



Cental heating

GSM control unit

Alarm control unit

IB-Tron 1000HT

Mode AF 'remote holiday'

Normally-open contact

1
2
3
4
5
6

L   Power supply
N        230V

Gas boiler

Thermostat measures temperature in the representative room by built-in **RT** sensor. In case of deficiency of heat, thermostat turns on gas boiler by short-circuit of suitable input of gas boiler.

In this case, input **FT** is not used to connect temperature sensor, but it used to connect **NO** contact. Such contact may be an element of **GSM** control unit, an element of alarm control unit or other control device, which has got potential-free **NO** output.

When contact connected to the input **FT** is open, thermostat operates according to the set mode (manual mode or automatic mode) and maintains comfortable temperature or economic temperature.

When contact connected to the input **FT** is shorted, thermostat switches to the holiday mode and maintains as long as the input **FT** is shorted. Opening the input **FT** causes return to previous mode. In the holiday mode is maintained holiday temperature, which can be much lower than temperatures maintained during using the building.

A signal which runs the holiday mode is default short-circuit of input **FT**. You can also configure the thermostat and invert a logical states. Then holiday mode will be maintained after opening input **FT**.

## 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:
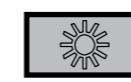
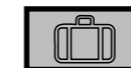| | |
|---|---|
| ☀ ☾ | Press for 3 seconds both buttons. On display start flashing current value of the calibration settings for **RT** sensor. |
| + − | Calibrate sensor by setting the appropriate value settings. |
| ↵ | Confirm the data. |
| ☾ 🧳 | To calibrate **FT** sensor, proceed as above - press for 3 seconds both buttons. |

## CLOCK

To set current hour please:

| | |
|---|---|
| TIME | Press and hold. On display start flashing current value of the clock settings. |
| + − | Set current hour (longer holding the button will faster change time) |
| ↵ | Confirm the data. |

## CLOCK DISPLAYING

Time can be displayed in 24-hour system or 12-hour system.

To change mode of time displaying please:

| | |
|---|---|
| DAY TIME | Press and hold two buttons for 3 seconds. |

## DAY OF THE WEEK

To set current day of the week please:

| | |
|---|---|
| DAY | Press the button. On display start flashing a day of the week. |
| + − | Set current day of the week |
| | » MON -Monday<br>» TUE - Tuesday<br>» WED - Wednesday<br>» THU - Thursday<br>» FRI - Friday<br>» SAT - Saturday<br>» SUN - Sunday |
| ↵ | Confirm the data. |

## TEMPERATURE UNITS

Temperature can be displayed in ºC and ºF

To change units please:

| | |
|---|---|
| ⏻ | Turn off the thermostat by button so that on display was appeared only the temperature. |
| PROG MODE | Press and hold two buttons for 3 seconds. |

## FACTORY SETTINGS

To reset thermostat and go back to factory settings please:

| + | | Press for 5 seconds both buttons. |
| - | | |

## GUARD FUNCTION

If the controlled device (e.g.: air damper, valve or pump) is not working for a long period of time, it may be damaged. Therefore it is important that each element was periodically turned on even when there is no need from point of view of system logic.

This protective function is **GUARD** function. It monitors work of controlled devices. If the device doesn't change its status of the operating by 240 hours, the thermostat changes the status for 20 seconds.

To activate/deactivate GUARD function please:

| PROG | Press for 3 seconds. On display will appear the status of **GUARD** function. |
| --- | --- |

☞ ON - turned on
☞ OFF - turned off

| + | Set the status of function. |
| - | |

| ↵ | Confirm the data. |

## TEST OF RELAYS

**TEST** function is used to check the controlled device (e.g.: a pump) - if it's well connected and working properly.

To test relays please:

| Model | Press for 3 seconds both buttons. |
| --- | --- |
| ↵ | |

| ↵ | Set relay status by repeatedly pressing the button. |
| --- | --- |

☞ ON -phase on the output number 6
☞ OFF -phase on the output number 5

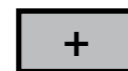| Model | Press for 3 seconds both buttons to go back to normal work. |
| --- | --- |
| ↵ | |

## 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 for 3 seconds both buttons. |
| --- | --- |
| DEL | |

## HYSTERESIS

Hysteresis means a difference ( in $^oC$ or $^oF$) between a threshold of switching on and switching off actuating module and desired temperature.

For example: If temperature $20^oC$ and hysteresis is set on $0,5^oC$, actuating module (heating device) will be switched on when the temperature drops below $19,5^oC$ and actuating module will be switched off when the temperature increases above $20,5^oC$. Next switching on thermostat will be again when the temperature drops below $19,5^oC$.

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

To change value of hysteresis please:

| TIME | When **the thermostat is turned on,** press for 3 seconds both buttons. On display start flashing current value of hysteresis settings. |
| --- | --- |
| DEL | |

| + | Set hysteresis value. |
| - | |

| ↵ | Confirm the data. |

## WORK MODE

Thermostat can work in three modes:

☞ **A** - Control of device is based only on built-in temperature sensor (**RT**).

☞ **F** - Control of device is based only on connected external sensor (**FT**).

## WORK MODE

» **AF** - Control of device is based on built-in temperature sensor (**RT**) and connected additional external sensor (**FT**). Thermostat is trying to keep desired temperature (**RT**) but only when **FT** temperature is at the appropriate level (upper and lower **FT** temperature limit).

To change mode please:

| MODEL | Press for 3 seconds button |
| --- | --- |

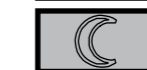| + | Select work mode. |
| - | |

| ↵ | Confirm a choice. |

## LIMIT OF FT TEMPERATURE

User has ability to choose one of three ways of operating input **FT** in mode **AF** (see chapter: ‚**AF mode**').

To select way of operating input **FT** in mode **AF**, please:

| DEL | Press both buttons for 3 seconds. On display start flashing currently selected type of limit. |
| --- | --- |
| ☾ | |

| + | Set type of limit, wherein: |
| - | |

**0 - upper limit** ( temperature limit from the top);
**1 - lower limit** ( temperature limit from the bottom);
**2 - mode ‚remote holiday'** (input **FT** as digital input);

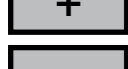| ↵ | Confirm the data. |

## SETTING OF INPUT FT IN MODE AF

To set value of **FT** temperature limit (upper limit or lower limit), or active signal of input **FT** (mode ,remote holiday') please:

| DEL | Press both buttons for 3 seconds. On display start flashing currently selected value.. |
| 🧳 | |

| + | In mode of lower limit or upper limit: set value of limit. **OFF** means turning off the limit. |
| - | |

In mode ,remote holiday': set type of active signal:
**Srt** - short-circuit of input **FT**;
**Opn** - opening of input **FT**;

| ↵ | Confirm the data. |

## HYSTERESIS OF FT TEMPERATURE LIMIT

**FT** temperature limit is also covered hysteresis. For example: If it is upper temperature limit to a value of 40ºC and hysteresis for a limit 2ºC, the thermostat will turn off actuating module when **FT** temperature exceeds a value of 42ºC. Actuating module will be switched on again when **FT** temperature drops below 38ºC (if **RT** temperature didn't reach before the desired value).
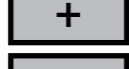
To change value of hysteresis for **FT** temperature limit please:

| TIME | When **the thermostat is turned on**, press for 3 seconds both buttons. On display start flashing current value of hysteresis settings. |
| DEL | |

| + | Set hysteresis value. |
| - | |

| ↵ | Confirm tha data. |

## TEMPERATURES

Thermostat can keep temperature: comfortable, econimic or holiday (permamently or according to program).

To change the temperature, please:

| ☀ | Press button. On display will be visible symbol and start flashing current value of comfortable temperature. |

| + | Set value of comfortable temperature. |
| - | |

| ↵ | Confirm tha data. |

| ☾ | Press button. On display will be visible symbol and start flashing current value of economic temperature. |

| + | Set value of economic temperature. |
| - | |

| ↵ | Confirm tha data. |

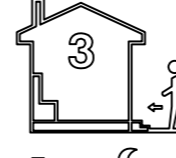| 🧳 | Press button. On display will be visible symbol and start flashing current value of holiday temperature. |

| + | Set value of comfortable temperature. |
| - | |

| ↵ | Confirm tha data. |

## WORK SCHEDULER

In the automatic mode thermostat works according to work scheduler. It means setting suitable temperature (comfortable/economic) at concrete hour. In the automatic mode on display is visible **AUTO** symbol.

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

You can program four time segments each day of the week, which were symbolically presented on display:

Comfortable temperate

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

Economic temperature

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

Comfortable temperate

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

Economic temperature

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

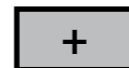economic          comfortable

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

## WORK SCHEDULER

To make your own work scheduler, please:

| PROG | Press button to select the appropriate time segment. |

| DAY | Press button to select day of the week, which concerns setting. Next holding the button for 3 seconds causes selection: |

» from Monday to Friday
» Saturday and Sunday
» all week

| TIME | Press button to set the first segment. |

| + | Set start time. |
| - | |

| ↵ | Confirm tha data. |

Repeat these steps until the introduction your own work scheduler.

⚠ 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 these four time segments, you can set short segments, for example:

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

⚠ When thermostat implements the scheduler (works in automatic mode), on display is visible **AUTO** symbol.

## MANUAL MODE

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

⚠ If thermostat works in manual mode, on display is visible **MANU** symbol and time segment symbol is not visible.

⚠ Thermostat is in the manual mode until user doesn't change it to automatic mode.

To change mode to manual/automatic, please:

| MODE | Press repeatedly to change mode. Selected mode is shown on display (**AUTO/MANU**). |

| ↵ | Confirm choice. |

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

| ☼ ☾ 🧳 | Press button which symbolizes suitable temperature (comfortable/economic/holiday). |

| ↵ | Confirm tha data. |

## 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).

## SEMI-AUTOMATIC MODE

In semi-automatic mode thermostat keeps different temperature than in the scheduler to the end of time segment. Then it automatically goes back to the automatic mode.

E.g. from 09:00 p.m. thermostat has to keep economic temperature according to scheduler, but user wants that thernostat will keep comfortable temperature to 7:00 a.m. and returned to automatic work.

To set semi-automatic mode, please:

| MODE | Press for 3 seconds. On display will appear symbol and start flashing tmperature different than in the scheduler (temperature which has to be keep). |

| ↵ | Confirm tha data. |

⚠ If thermostat works in semi-automatic mode, on display is visible **AUTO** symbol and flashing **MANU** symbol.

To earlier go back from semi-automatic mode to automatic mode, please:

| MODE | Press for 3 seconds. |

## ERRORS

On display may appear symbols that signify:

☞ **LO** -temperature on current sensor is below the lower measuring range.

☞ **HI** - temperaturw on current sensor is above the upper measuring range.

☞ **ERR** - current sensor is not connected or is damaged.

## ERRORS

⚠ Visible symbol of **RT** and **FT** in the course when appears above symbol of this error, determines the current sensor (sensor which concern the error)

⚠ In these cases, for safety reasons, actuating module is blocked (phase on the output **5**).

## NETWORK COMMUNICATION

Thermostat is also available in versions adapted to work in network.

There is version based on **RS-485** communication.

Issues relating to network communication are contained in separate manuals connected with **IB-System**.

## SOFTWARE VERSION

**InsBud** company supports policy of development. Thats why rights to making changes and improvements in products and manuals without prior notice reserved!

Our company is open to all suggestions to improve our thermostats. If you have an idea for new function or you need unusual solution of problem please contact us.

This manual is appropriate for **IB-Tron 1000HT** with software version:

**007**

Operation and functionality may be different from information contained in this manual, if your thermostat has other software version than software version 007.

## SOFTWARE VERSION

To check software version please:

| ⏻ | Turn off the thermostat by button so that on display was visible only temperature. |

| ☾ 🧳 | Press for 3 seconds both buttons. On display will show software version. |

| ⏻ | Turn on the thermostat by button to go back to normal work. |

If you want to free update your software, please contact us.

## REMOTE CONTROL

**RC** model allows to remote control of thermostat.

☞ Comprehensive, remote operating of the thermostat.
☞ Dimensions: 85x40x5 mm
☞ Battery: CR2025 3V (included)

## SHORTENED MANUAL

**Calibration**

Press for 3 seconds both buttons to calibrate **RT** sensor.

Press for 3 seconds both buttons to calibrate **FT** sensor.

`TIME` **Clock.** Press and hold button to set time.

`DAY` `TIME` **Clock displaying.**
To change mode of time displaying from 12-hour system to 24-hour system, press and hold

`DAY` **Day of the week.** To set day of the week, press button

**Temperature units.**

To change temperature units to ºC or º, turn off the thermostat.

`PROG` `MODE` Press and hold both buttons for 3 seconds.

`+` `-` **Factory settings.** Press for 5 seconds both buttons.

`PROG` **GUARD function.** Press both buttons for 3 seconds. On display will appear status of **GUARD** function.

## SHORTENED MANUAL

`Model` `↵` **Test of relays.** Press for 3 seconds both buttons.

`+` `DEL` **Keyboard lock.** Press for 3 seconds both buttons.

`TIME` `DEL` **Hysteresis.** Press for 3 seconds both buttons.

`MODEL` **Work mode.** Press for 3 seconds button.

**Limit of FT temperature.**

`DEL` Press both buttons for 3 seconds to select way of operating the input.

`DEL` Press both buttons for 3 second to select value of setting for the input FT.

**Hysteresis of FT temperature limit.** Turn off thermostat.

`TIME` `DEL` Press for 3 seconds both buttons when the thermostat is turned off.

**Temperatures**. Press button and set value of temperature:

Comfortable.

Economic.

Holiday.

## SHORTENED MANUAL

**Work scheduler.**

`PROG` Press button and select suitable time segment.

`DAY` Press button and select suitable day.

`TIME` Press button and select start time of time segment.

`MODE` **Manual mode.** Press button to switch between manual mode and automatic mode.

`MODE` **Semi-automatic mode.** Press button for 3 seconds in automatic mode.

**Software version.**

Turn off the thermostat.

Press for 3 seconds both buttons. On display will appear software version of thermostat.

Turn on the thermostat to go back.

## 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 damade, pollution, flooding, weather, improper installation 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.

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