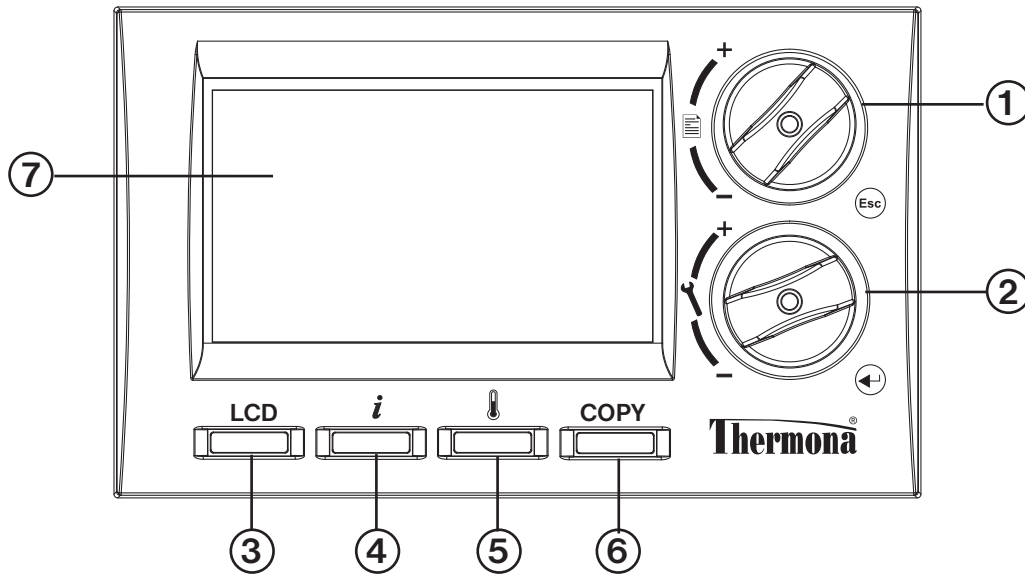


DESCRIPTION



Control elements	Button function - PRESSING	Button function - TURNING																																																						
①	<ul style="list-style-type: none"> - opening the main menu - ESC(escape)=return one step back 	<ul style="list-style-type: none"> - browse through the main menu (view) - browse in the "Parameters" mode - in the "Setting program" browse between time intervals - browse (view) information by pressing "i" 																																																						
②	<ul style="list-style-type: none"> - ENTER= acknowledgement= typing changes - quick change of the requested temp. (short-term in the mode "Auto", permanent in the "Manual" mode) 	<ul style="list-style-type: none"> - change in the adjusted value 																																																						
③ LCD	<ul style="list-style-type: none"> - Press the button "LCD" to select the appearance of the introductory display of information on the display 																																																							
	<p>A)</p> <table border="1"> <tr> <td>01.01.13</td> <td>21:45</td> <td>Tuesday</td> </tr> <tr> <td>AUTO</td> <td>prog:1</td> <td>per.:1</td> </tr> <tr> <td colspan="2">22.4°C</td> <td>UT</td> </tr> <tr> <td>IN:19.0°C</td> <td>DHW:50.0°C</td> <td>OT+</td> </tr> </table> <p>B)</p> <table border="1"> <tr> <td>01.01.13</td> <td>21:45</td> <td>Tuesday</td> </tr> <tr> <td>AUTO</td> <td>prog:1</td> <td>per.:1</td> </tr> <tr> <td colspan="3">actual</td> </tr> <tr> <td>IN: 22.4°C</td> <td>UT: 42.0°C</td> <td>OUT: 8.0°C</td> </tr> <tr> <td colspan="3">required</td> </tr> <tr> <td>IN: 19.0°C</td> <td>CH: 0.0°C</td> <td>DHW: 50.0°C</td> </tr> <tr> <td colspan="2">Temp. DHW: 57°C</td> <td>OT+</td> </tr> </table> <p>C)</p> <table border="1"> <tr> <td>01.01.13</td> <td>21:45</td> <td>Tuesday</td> </tr> <tr> <td>AUTO</td> <td>prog:1</td> <td>per.:1</td> </tr> <tr> <td colspan="2">Actual temp.</td> <td>: 22.5°C</td> </tr> <tr> <td colspan="2">required IN</td> <td>: 19.0°C</td> </tr> <tr> <td colspan="2">required DHW</td> <td>: 50.0°C</td> </tr> <tr> <td colspan="2">outdoor:</td> <td>8.0°C</td> </tr> <tr> <td colspan="2">Temp. DHW: 57°C</td> <td>OT+</td> </tr> </table> <p>On the last line is further information, for example, the outside temperature</p>	01.01.13	21:45	Tuesday	AUTO	prog:1	per.:1	22.4°C		UT	IN:19.0°C	DHW:50.0°C	OT+	01.01.13	21:45	Tuesday	AUTO	prog:1	per.:1	actual			IN: 22.4°C	UT: 42.0°C	OUT: 8.0°C	required			IN: 19.0°C	CH: 0.0°C	DHW: 50.0°C	Temp. DHW: 57°C		OT+	01.01.13	21:45	Tuesday	AUTO	prog:1	per.:1	Actual temp.		: 22.5°C	required IN		: 19.0°C	required DHW		: 50.0°C	outdoor:		8.0°C	Temp. DHW: 57°C		OT+	
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④ i	<ul style="list-style-type: none"> - press "i" for view following information 	<ul style="list-style-type: none"> - by TURNING "Esc" button next information (about the heating system, the supply of hot service water, servicing, the outside temperature etc.) 																																																						
	<p>Required CH= calculated central heating according to the selected equitherm curve, according to the weather) irrespective of min. and max. potential temperature of CH, the data in brackets is the requested temp. with respect to the adjusted min. and max. CH temperature (see pages 6, 7 - constants No. 6 and 7)</p> <p>Actual CH = actual temperature of heating water</p> <p>Modulation = modulation output of the boiler in %</p> <p>Flow= information about the flow of DHW in litres per minute for boiler CX and TCX</p>	<p>Required temp. DHW= required DHW temperature</p> <p>Operating hours CH and DHW= reset by "LCD"button</p> <p>Temp. measured= statistics value, reset by "LCD"button</p> <p>Works boiler inspector= service telephone (see page 5)</p> <p>Required temp. in AUTO/MANU mode= change by "i", short-term in "Auto", permanent in "Manual" mode</p> <p>Outdoor temp.= temperature on the outside temperature sensor connected to the boiler</p> <p>Required temp. in premature switching mode= constant No. 3</p>																																																						
⑤	<ul style="list-style-type: none"> - Press the button to open the browse menu and the change the actual requested room temperature and the automatic or manual mode Turn the button "↵" to change the actual value of the requested temperature (in automatic mode up to the further time section) or select another programme. Turn the button "Esc" to switch between the temperature and the programme 																																																							
⑥ COPY	<ul style="list-style-type: none"> - serves for fast copy of days in the "Setting program" mode - entrance/leaving into/from the service mode, press the button during about 5 s in the introductory display. 																																																							
⑦	<ul style="list-style-type: none"> - Display backlight (after pressing any button the display is automatically backlit for about 2 s.) 																																																							

ASSEMBLY

The thermostat is installed in a suitable place where it cannot be affected by the flow of hot air from the heater, solar radiation and other heat sources. The installation height should be about 1.5 m above the ground. Install the thermostat into what is known as the reference room (e.g. a bedroom).

Work procedure:

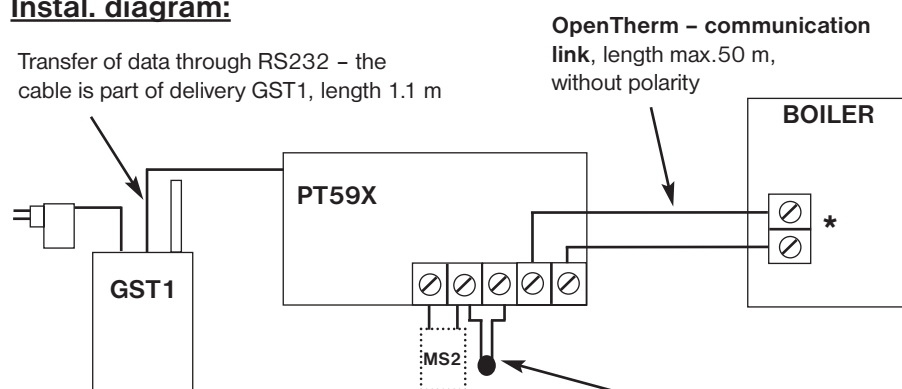
1. Remove from the device PT59X rear panel (Fig. No. 1).
2. Remove plastic piece in the middle of the rear cover with the size of the hole for the supply of the communication link.
3. Fix the rear cover on the installation box or the wall (Fix No.2).
4. Put the communication link from the boiler through the created hole in the rear panel and connect it to the terminal box according to the diagram.
5. Connect the thermostat to the rear panel.

Note.: After connecting the leads to initialize the processor (LCD flickers), so appropriate to start with programming at least 10 minutes after the connection.

The installation of PT59X must only be done by a properly qualified person!

Instal. diagram:

Transfer of data through RS232 – the cable is part of delivery GST1, length 1.1 m



Connecting the MS2 (not included) when error messages are normally closed relay switches MS2, to which may be connected to another light or acoustic element.

Connection outside sensor (see page 6) (not included)
 1, for measurement of temp. in other place than is thermostat placed
 2, as a floor sensor
 3, for DHW regulation

OpenTherm – communication link, length max.50 m, without polarity

Fig No.1

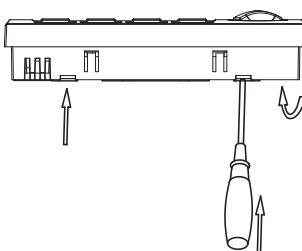
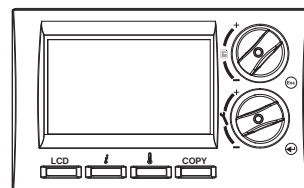
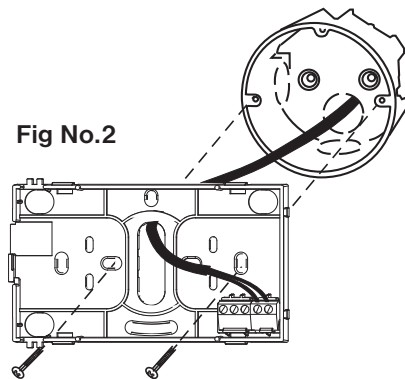


Fig No.2



* for exact electric connection, see the instructions for the boiler used

OPERATION

Main menu

Setting

Selection of user modes

Auto (set in production)
 The thermostat works according to the previously set program.

Press the "Esc" button, by turning " " select the **Auto mode**, confirm by " " button. A quick change of the requested temp. is performed by pressing the " " or " " button (cannot be set when in the OFF mode or the Summer mode).

Manual
 The thermostat keeps a constantly adjusted temperature.

Press the "Esc" button, by turning " " select the **Manual mode**, confirm by " " button. The quick change of the requested temperature is performed similarly as when in automatic mode.

Auto off
 disconnection of the boiler up to the time for the change of temperature stated by the program.

Press the "Esc" button, by turning " " select the **Auto off mode**, confirm by " " button. (Mode "OFF in automatic" is cancelled by selection of another mode).

Manual off
 Permanent disconnection of boiler.
i the text " Off " is displayed

Press the "Esc" button, by turning " " select the **Manual off mode**, confirm by " " button. (Mode "OFF in manual" is cancelled by selection of another mode).

Holiday (Auto)
 Keeps a constant temperature up to the set day of return from vacation, and is then transferred into AUTOMATIC MODE (the last selected program before the vacation). It is not possible to set the Summer mode (setting values, constant No. 4)!

Press the "Esc" button, by turning the " " select mode **Holiday (Auto)**, confirm by " ". Set the date and time of return from vacation and the temperature which the thermostat must maintain during the vacation. Turn the " " button to change the value and press " " button. After expiration of the set period of vacation, the thermostat returns to the automatic mode. **The heating of DHW is always disconnected.** (The set value always flashes, turn the " " to browse between data, press "Esc" button to return back to the menu. In the case of early return from vacation, cancel the mode "Holiday in AUTO" so that you select another mode).

i The following text is displayed:
 " **Holiday to 1.1.09 15:00** "
 New information showed:
 " **Requested temp. in holiday** "

Holiday (Manual)

Keep a constant temperature up to the day of return from the vacation, then switch to the MANUAL mode (the last selected program before departure). It is not possible to set the Summer mode (setting values, constant No. 4!

Setting clock

setting the actual time and date.

Setting program (factory setting prog:1)

Setting programs for CH and DHW.

The thermostat can set 9 weekly programs for heating and 6 thermal changes per day. Programs No. 8 and 9 are designed for automatic changes in even and odd weeks.

During selection of permanent CH temperature (4. Regulation mode "3" Permanent CH temperature) output temperature from the boiler or the cascade is always set.

Program CH

Select program	Program: > 1	< Monday
1.	6:00	22.0°C
2.	9:00	19.0°C
3.	14:00	22.0°C
4.	16:30	24.0°C
5.	21:30	19.0°C
6.	21:30	19.0°C

Program DHW*

Select program	Program: > DHW	< Monday
1.	0 - 24	45.0°C
2.	24 - 24	45.0°C
3.	24 - 24	45.0°C

The last program is reserved for the management of DHW. For boilers with flow heating, it is possible to set 3 time sections with various temperatures (from 35 °C to 60 °C). For boilers with tanks, the temperature of DHW is set on the boiler and on PT59X; setting the temperature only enables activation of the boiler for heating the boiler.

***Control DHW: When connecting an external sensor (see diagram on page 2), No.17 constant setting to "for DHW" and location of the sensor in the tank, there is regulation DHW according to set program (with a hysteresis of ± 5 °C according to location of the sensor in the tank).**

Parameters

Setting the regulation parameters and the heating system.

1. Cesky (factory setting Cesky)
Selection of language.

2. Min. program. temper. (factory setting 5°C)
Temperature limit - it is not possible to set the room temperature below this limit when programming.
Select within the range from **2 °C to 10°C (by 0.5°C)**.

3. Max. program. temper. (factory setting 39°C)
Temperature limit - it is not possible to set the room temperature above this limit when programming.
Select within the range from **15 °C to 39°C (by 0.5°C)**.

4. Mode (factory setting 0)
Status of the mode in which the thermostat will work.
0 - Required temper.regulation, the thermostat heats for requested temp. at the stated time.
1 - Premature switching (PS), during two day of operation, the thermostat ascertains thermal constants of the reference room and then switches the heating with requested advance (for restriction of advance, see constant No. 5 below).
2 - Summer mode, the thermostat does not heat, only controls the heating of DHW.
3 - Permanent temp. CH, the thermostat keeps temperature of heating water within the limits of the set time and the constant 6 (MIN. TEMP. CH) and 7 (MAX. TEMP. CH).

5. Start-up sooner max. (factory setting 2 hours)
When **PS is activated!** The thermostat may activate the heating at the set number of hours in advance.
Optional range **0.5 to 6.0 hours (by 0.5 hours)**.

Setting

Press the "Esc" button to select **Holiday (Manual)**, confirm by "↩" button. Use the similar setting as in Auto mode. After expiration of the set period of vacation, the thermostat returns to the manual mode. **DHW is always disconnected.**

Press the "Esc" button, by turning "☰" select the mode **Setting clock**, confirm by "↩" button. Turn the "⚙" to change the values and confirm the selected values by pressing "↩" button (*Symbols above the set parameter always flash. Turn "☰" to browse between data, press the button "Esc" to return to menu.*)

Press the "Esc" button and turn the "☰" to select **Setting program** mode, confirm by "↩". Turn the "⚙" to select the program and confirm by "↩" button. Select the requested day in the same manner. First, select the time of the change and then the requested room temperature. Proceed in such manner up to the last terminal. If you know that the following day will be the same, press the button "COPY". The program is copied. The text "COPY" flashes on the right upper side (*the set data always flashes, turn the "☰" button to browse between the data, press the "Esc" button to go back one step back in programming*).

When programming DHW, proceed in a similar manner, set the time sections for the heating of DHW.

Press the "Esc" button, by turning the button "☰" select the **Parameters** mode. Confirm by pressing the "↩". Turn the "☰" button to browse through the constants.

Turn the "⚙" to select and press the "↩" button. Constant No. 2 automatically appears.



Turn the "⚙" button to set the minimum adjustable temperature and confirm with "↩" button. Constant No. 3 automatically appears.

Turn the "⚙" button to set maximum adjustable temperature and confirm with "↩" button. Constant No. 4 automatically appears.



Turn the "⚙" button to select the required regulation mode and confirm with "↩" button.
In the case of selection of the **mode "0"** the constant No. 5 is skipped and the constant No. 6 is immediately appeared.
In the case of selection of **mode "1"**, constant No.5 automatically appears (*in the list of information, the text "required temperature in premature switching" appears*).
In the case of selection of **mode "2"**, constant No. 5 is skipped and constant No. 6 immediately appears (*on the introductory screen the text "Summer mode" appears*).
In the case of selection of the **mode "3"** the constant No. 5 is skipped and the constant No.6 is immediately appeared. On the introductory screen the text "required IN" and at this mode the stated actual value of required-permanent temperature of heating watter is appeared.

Turn the "⚙" set the maximum time in hours to show the time in advance it is possible to activate the heating so that the temperature reaches the requested value by the stated time. Confirm by "↩" button. Constant No. 6 automatically appears.



6. Min. temp. heating watter (factory setting 30°C)
States the lower limit of the requested temperature for heating water calculated by the thermostat for when the heating can start. This constant prevents redundant activation of the boiler.
Optional range from **5.0 °C to 50.0°C (by 1.0°C)**.

Turn the “” button to set the minimum temperature of the heating water and confirm with the “” button.
Constant No. 7 automatically appears.

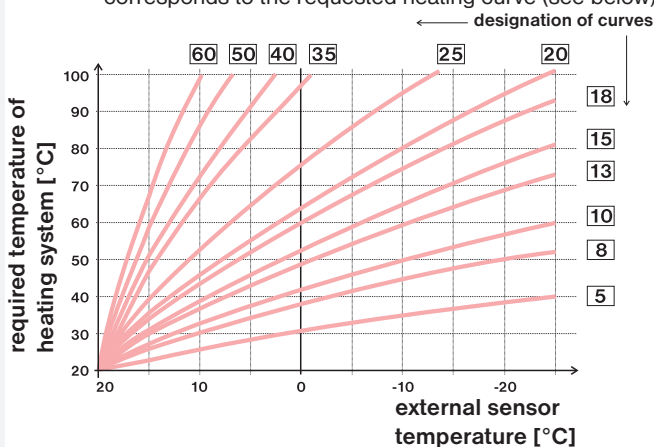
7. Max. temp. heating watter (factory setting 70°C)
States the upper limit of the requested temperature of the heating water calculated by the thermostat which the boiler must not exceed. Difference between the minimum and ten maximum temperature must be greater than 8°C.
Optional range from **13.0 °C to 85.0°C (by 1.0°C)**.

Turn the “” button to set the maximum temperature of the heating water and confirm with the “” button.
Constant No. 8 automatically appears.

8. Number heating curve (factory setting “Room control”)
Selection of the type of regulation.
Room control = PI regulation (according to the inside temperature). The thermostat heats up depending on the temperature in the reference room. It is necessary to set constants 11 and 12!

Turn the “” button to select the type of regulation and press the “” button to confirmation.
In the case of selection of equithermal regulation follow the instructions under the graph with the heating curves.

1 - 60 = equithermal regulation, number 1 to 60 corresponds to the requested heating curve (see below)



If selecting a requested room temperature of other than 20 °C, the thermostat calculates the automatic shift of the curve according to the following equation where the coefficient is 1:

$$\text{shift} = (\text{requested temper.} - 20) * \text{coefficient}$$



Note.: the most frequently used curve under our conditions is 9-11 for low-temperature systems and 15-17 for traditional heating systems.

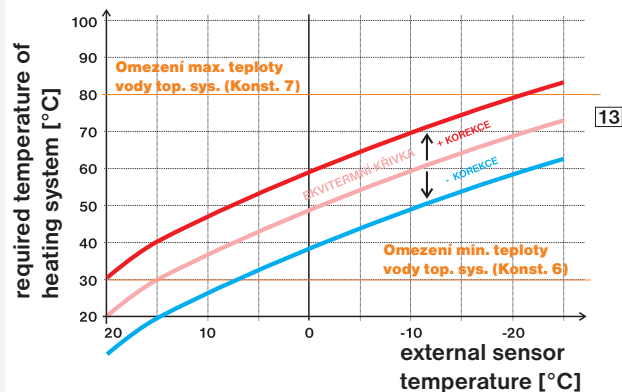
After selection of the optimal heating curve and the confirmation, there is a shift to constant No. 9.

In the case of option PI regulation constants No. 9, 10 are skipped and constant No.11 is automatically displayed for further setting of the PI regulation.

*It is recommended to select equithermal regulation for large buildings where it is not possible to select a reference room. The principle of equithermal regulation is optimising the temperature of the water for the heating system depending on the outdoor temperature. The mentioned equithermal curves express this dependence (for a requested room temperature of 20°C), according to which it is possible to select the requested temperature of the water in the heating system. The thermostat calculates the temperature of heating water according to the selected equithermal curve which is consequently sent to the boiler. Then the boiler regulates the temperature of heating water to the requested value. It is necessary to select the slope of the curve according to the heating system to prevent permanent over or under heating of the building. The selection of the correct curve for the stated system is a long-term issue and it is necessary to test the system at various outdoor temperatures! It is recommended to modify the indoor temperature in the rooms, e.g. regulation by thermostat heads. **The water temperature in the heating system is restricted by minimum and maximum limits which are set in constants No. 6 and 7!** During this regulation, the outdoor sensor must always be connected to the boiler!*

9. Parallel displac. h.c.
0.5 to 10.0 = manual correction according to the coefficient, used if the temperature is not according to your requirements (by 0.5).

In the case of setting the equithermal regulation, it is possible to select manual correction of the shift of the curve or the automatic correction according to the indoor temperature. Turn the “” button to set the correction for the curve and press the “” button to confirm.



In the case of **manual correction** set the shift coefficient for the heating curve when at various requested temperatures in the reference room, regulation of the heating water will be reached according to the actual outdoor temperature (for the formula, see constant No. 8). After setting and confirmation, there is the automatic transfer to constant No. 10.

Example describes the option for equithermal curve No. 13 (pink) and the calculated correction with the coefficient 2.5 (for requested room temperatures of 24 °C and 16 °C). The optimal setting of the system is achieved when the water temperature of the heating system is regulated according to the actual outdoor temperature.

AUTO= automatic correction, according to the indoor temperature measured in the reference room. It is possible to use this option after the correctly selected equithermal curve!

In the case of option **automatic correction** according to the indoor temperature, constants No. 10, 11 and 13 must be set.

*In the case of this regulation, the heating curve is automatically corrected depending on the outdoor temperature, as well as the actual temperature in the reference room where the thermostat is located. This enables to achieve higher thermal comfort in the heated area, optimal operation of the heating system and greater savings! During this regulation, the sensor must always be connected to the boiler and **constant No. 9 must be set to „AUTO”!***

10. Building insulation

The speed of the change of temperature in the room during frequent deviations of outdoor temperature depends on the construction and insulation of the building. With this constant, it is possible to take into consideration the speed of the change of temperature according to the type of heated building (only in the case of equithermal regulation).

badly = **uninsulated building**, responds quickly to a change in the outdoor temperature

medium = **insulated building**, responds slowly to a change in the outdoor temperature

well = **well insulated building**, responds slower to the changes in the outdoor temperature

11. Reg. period in minutes (factory setting 10 min.)

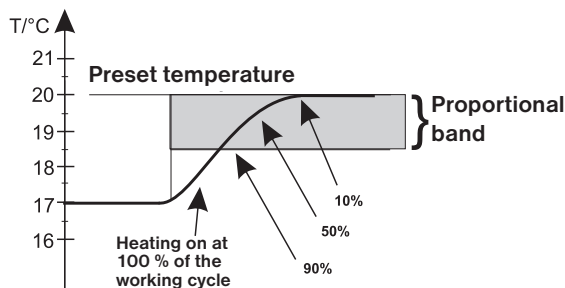
It is selected according to the thermal inertia of the object. The optimal setting is 10 to 15 min.

Optional range **5 min to 20 min (by 1min)**.

12. Reg. period in °C (factory setting 2°C)

Only in the case of the option **PI regulation** (constant 8 = without equitherm). The "zone of proportionality" from when the thermostat starts to restrict the CH temp. (when the PI regulation starts). Optional range

1.5°C to 3.0°C (by 0.1°C).

**13. Reaction speed** (factory setting 12)

Active only in the case of selection of equithermal regulation with automatic correction according to the indoor temperature! States how fast the requested temperatures are achieved. Optional range **1 to 16 (by 1)**.

14. Day of service (factory setting 1.1.2029)

Setting the date for servicing the boiler. Notification for the user regarding the maintenance of the boiler.

i At the stated date, the text "**revision of the boiler is required**" is shown on the display.

15. Name of technical expert

Display of the name of the service technician. The name of your service technician appears on the display. Active only when in service mode.

i If stated, a new item appears in the information, for examples SERVICE TECHNICIAN).

16. Phone of technical expert

Display of the telephone number of the service technician. The name of your service technician appears on the display. Active only when in service mode!

i If stated, a new item appears in the information.

Example:

Service technician VASILEV 89876543210

Turn the "↵" button to select the type of the building according to the kind of insulation and press the "←" button. There is the automatic appearance of constant No. 14 (during manual correction) or No. 11 (during automatic correction).

Turn the "↵" to set regulation interval and press "←" button. Constant No. 12 or No. 13 automatically appears (at the equitherm with automatic balancing).
The length of the interval in minutes influences the oscillation of the system. The lower this value, then the higher the risk of oscillations.

If selecting the PI regulation (constant No. 8), it is necessary to set the further parameter.

Turn the "↵" zone of the proportionality of PI regulation and press the "←" button. There is the automatic appearance of constant No. 14.

In the case of selecting the PI regulation parameters, orientate according to the PI regulation and follow instructions shown at the graph.

The principle of PI regulation is based on comparing the actual temperature of the room with the requested temperature. This regulation depends solely on the indoor thermostat sensor. Selection of constants 11,12: when setting the time section, it is necessary to ensure the thermal inertia of the room. The optimal setting is 10-15 minutes. If there are frequent thermal deviations in the room it is recommended to select a shorter time section. Zone of proportionality states from which value the PI regulations will start.

Turn the "↵" button to select the value and press "←" button to confirm. Constant No. 14 automatically appears.
At the speed of reaction 1 the requested temperature is achieved slightly, which prevents possibility of overusing, although the requested temperature is achieved later. At the speed of reaction 16, in the case of the change of the requested temperature, there is immediate heating up to the requested temperatures, but overusing occurs.

Turn the "↵" button to consequently set day, month and year for the revision and confirm each setting by the "←" button. To speed-up the setting, press the button "COPY", which displays the actual date. The revision is cancelled by the change of the date of revision. After setting constant No. 17 automatically appears (or 15 in service mode).

Constants 15 and 16 can be set in service mode!

Opening service mode: twice press the "Esc" button return to the introductory menu in the same manner and then press the button „COPY“ for 5 s. Entrance into the service mode is indicated by the text "SR" in the right lower corner of the display.

Press the "Esc" button, select the "Parameters" mode, confirm by pressing the "←" button. Turn the "☰" button select the constant No. 15. Turn the "↵" button and set the technician name, each letter confirm by "←" button.

Proceed in the same manner as when setting the telephone number.

Termination of service mode (output from SR):

In the introductory menu, press the button „COPY“ for 5 s. Do not make any changes and you are in the introductory display, there is automatic termination of the service mode within 4 minutes.

17. Temper. 2nd sensor (factory setting "not used")

Option to use the external room sensor (not the outdoor temperature sensor).

Disconnect = external sensor is not connected, if connected, it functions as an indoor sensor and regulation is according to the temperature measured on the connected sensor.

For DHW = external sensor is placed in water tank and regulate DHW (temper.program select for DHW see page3).

15.0°C to 80.0°C = external sensor is used to restrict the maximum temperature (e.g. heated floor, etc).

i If the sensor is connected, the text will appear at the constant "**Sensor connected**". In the introductory LCD the value of the temperature of the external sensor appears "**External sensor: XX.X°C**".
If the sensor is not connected (or the sensor was disconnected) and constant No. 17 is set for the use of this sensor, the notification "**External sensor error**" appears. In information, a new item appears according to the use of the external sensor: "**Regulation according to the 2nd sensor**" / "**Temp.DHW sensor**" / "**Temp. 2nd sensor**".

18. Use GSM (factory setting NO)

Option to use GST1 module for remote control of the thermostat by mobile telephone.

NO = modul GST1 module is not connected

YES = modul GST1 is connected, the following constants No. 20 and 21 must be set and the module must be connected according to the respective manual!

19. Phone No. 1

Entering the telephone number in an international format (79876543210), **to which SMS are sent back regarding the status of the thermostat.**

79876543210

← 1st numeral

20. Phone No. 2

Entering the telephone number in the international format (79988776543) - not obligatory.

21. Phone No. 3

Entering the telephone number in the international format (79988776543) - not obligatory.

22. Pin

Setting the PIN code for the SIM card which is inserted into the GST1 module.

* * * *

← 1st numeral

i Individual characters of the PIN are not visible due to the high level of security against misuse of the SIM card.

If the PIN is incorrectly entered three times, disconnect the module and restart the thermostat. Remove the SIM card and insert it into the telephone and activate the SIM card by entering the PIN. Then enter the PIN again!

23. Legionella function (factory setting NO)

Ensures the control of the TUV tank for the minimum temperature of 60°C, which kills all potential Legionella bacteria.

NO = the function is not active

YES = the function is active, the value in the bracket is the number of days, which remain to the automatic heating (always by 5 days, if the temperature of the TUV does not exceed 60°C)

25. Version (reset of the factory setting)

Only for information regarding the firmware version of the thermostat. Option to reset the factory setting - **reset**.

Turn the "↖" in upward direction and set maximum temperature measured by the external sensor (within the range 15 °C to 80 °C), at which there is the disconnection of the boiler. Setting is confirmed by pressing the "↶".

If the temperature measured by the external sensor reaches the set value, there is the disconnection of UT and on the display, the text "**Disconnected-external sensor appears**".

After setting, constant No. 18 appears.

Turn the "↖" button to set the option for using the module GST1 and press the button "↶" to confirm. There is the automatic appearance constant No. 19 (if the module is not used, constants 19, 20, 21, 22 is automatically skipped). Turn the button "↖" to gradually set the numbers which correspond to the telephone number for sending SMS messages sent from the thermostat. Each number entered must be acknowledged by the button "↶". After setting the last number, constant No.20 automatically appears

The telephone number is entered in the international format (without "+" or "00" at the beginning). In the case that the telephone number has 10 or 11 digits, an empty place is set on the last position after entering the last number. Press the button "↶" to switch to the next constant. In the case that you do not want to enter the next telephone number, constant No. 20 "Phone No. 2" and No.21 "Phone No. 3" are left empty. When setting constants No. 20, 21 the procedure is the same!

When setting telephone numbers 2 and 3, the function is as follows:
1, SMS "Info" will be sent from tel. numbers 2nd or 3rd, answer will be sent to tel. number 2nd or 3rd;
2, SMS "Temp xx" will be sent from tel. numbers 2nd or 3rd, answer will be sent to tel. number 1st;
3, If an error status is reported, an SMS is sent to tel. no. 1, 2 and 3;
4, If an SMS is sent from other tel. number, the reply is always sent only to tel. number 1st.
5, SMS "Call" will be sent, the call is only on tel. number 1

Turn the "↖" button to gradually enter the PIN code for the card, to be inserted into the GST1 module. Each time the number is entered it must be confirmed by "↶". After entering the last number PIN code, connect the conductor into the GST1 module and connect the module into the socket. As soon as the orange diode lights up, press the button "**COPY**" (on the display above this button the following text is displayed "**1st attempt of 3**"). Then, there is the testing of the correct connection of module GST1 and verification of the PIN code. If the PIN is incorrectly entered, the following text appears "Incorrect PIN" and "**2nd attempt of 3**". In the case of further incorrect entering of the PIN, the following text appears "Last attempt".

Turn the "↖" button to set the option and press the "↶" button to confirm. Constant No. 25 automatically appears.

Conditions for the correct function:

There must be information about the temperature of the DHW from the boiler or the 2nd sensor must be in the function for „HSW“!

The automatic heating always takes place at midnight.

The version number of the firmware appears with the text "**COPY**". With the second pressing of the button „**COPY**“ (for about 5 s) there is RESET OF THE FACTORY SETTING (on the display above this button the text is displayed "reset"). To return to the main menu use the "Esc" button.

REMOTE CONTROL BY MOBILE TELEPHONE FORMAT OF SENT MESSAGES

Info	information on the status of the heating system
Off	disconnection of the heating system (in the AUTO mode - short-term, in the MANU mode - permanent), use to cancel the function to use the message Temp xx
Temp xx	change in the requested temperature (only integers can be entered and these must be within the range of permitted minimum and maximum temperatures – constants No. 2 and 3)
Call	back calling

xx = value of temperature in °C (always a 2-digit number, e.g. 15)

! Attention: To send and receive back messages, any type of mobile telephone can be used! If the telephone has the option to set the size (format) of the font, always use MEDIUM size (option for three font sizes) or LARGE size (option for two font sizes).

FORMAT FOR BACK MESSAGES FROM PT59X

Require: xx.x	Requested temperature (entered by the user)
Act: xx.x	Actual room temperature
On	Activated heating system (On)
Off	Deactivated heating system (Off)
CH	Indicates that heating is to CH
DHW	Indicates that the heating is to DHW
AUTO	The thermostat is in automatic mode
MANU	The thermostat is in manual mode
HOLI	the thermostat is in vacation mode, keeps the constant temperature up to the stated date
Sig: x	states the value of the signal in the place of the location of the module where x are values within the range 0 to 5: 0..cannot be determined or no signal is detected 1..the worst signal level 5..the best signal level
Sens 2: xx.x	Absolute temperature of the external sensor, if connected (see pages 2,6)
E xxx	Error message where xxx is the indication of error 001 to 255 (see page 8)
Out: xx.x	Actual temperature of the outdoor sensor which is connected to the boiler
Noaccept!	Signals an error (incorrectly entered SMS, etc.)

xx.x = temperature in °C

BACK MESSAGES ARE SENT WITHIN 3 MINUTES!

Note: In the case of exceeding the min./max. temperature in the room (set constants 2 and 3) a "WARNING " SMS is automatically sent in the **Info** form.

Specify the conditions for sending messages with your operator. We recommend using the services of the mobile operator with the best connection.

ERROR MESSAGES

In the case of disconnection or interruption of a communication link between the thermostat and the boiler, the text "**Connect the link**" is displayed (during the first connection, the thermostat must be connected with the boiler through the link for about 30 minutes).

The advantage of this thermostat is an extremely long period for running the backup of the data and time module (i.e. it is not necessary to set them again) – for more than 10 days from the date of disconnection from the source!

If the breakdown of the communication link is extremely long, it is necessary to set the date and the time, although the constants and programs remain kept in the thermostat!

In this case, on the last line of the display, there is the notification „**Set the date and the time**“.

The OpenTherm protocol enables to send important error messages from the boiler into the thermostat.

The thermostat displays these messages on the last line of the display:

- **E xxx** , where **xxx** can be from **001 to 255**. This type of error can be changed according to the model of the boiler (see technical sheet) or according to the form of the connection of thermostat PT59X to the driving boiler in the cascade; therefore, a service technician may need to be called. These are errors, e.g. bad exhausting of burnt gases, error in the outdoor temperature sensor, etc. In the case of a cascade connection, there may be an interruption to the connection between individual boilers in the cascade.
- Error in measurement of UT temperature = the inside sensor is damaged, contact a service technician.
- Error OPT - UT temperature = no information received from the boiler for the actual UT temperature.

Note: error xxx is displayed, the first line of the display starts to flash (date and time) to highlight the error status!

TECHNICAL PARAMETERS

Power supply	Through the OT communication link from the boiler
Communication link polarita length	double link without polarity up to 50 m
Type of communication	Bi-directional OpenTherm
Hysteresis DHW	±5°C
Range of adjustable temperatures	3 to 39°C
Range of adjustable CH temp.	5 to 85°C
Range of adjustable DHW temp.	35 to 65°C
Precision of measurement	±0,5°C
Protection	IP20
Relative humidity	< 85% RH
Working temperature	0°C to +40°C

CERTIFICATE OF GUARANTEE (guarantee period for the product amounts to 2 years)	
product No.:	date of sale:
examined by:	stamp of shop:

Warranty rules: If a defect occurs in the product during the warranty period caused by a manufacturing defect or a defect to the material, it will be removed free of charge. To apply the warranty, the purchaser must submit a valid warranty certificate.

The warranty period is stated:

- a. on the package of the product
- b. in the manual for the product

The warranty certificate must contain

1. stamp, signature and address of the seller
2. day, month and year of the sale
3. exact indication of the product (model) and the serial number of the boiler to which the product applies

The warranty does not apply to defects caused by:

1. unprofessional use (in variance with the User Manual)
2. poor handling
3. penetration of other substances into the product
4. natural disasters
5. mechanical damage caused by the user
6. non-functioning of equipment caused by error installation

The warranty loses validity

1. if the warranty certificate is not correctly or only partially completed
2. in the case of self made changes to the warranty certificate
3. in the case of not keeping to the intended manner of use and maintenance of the product
4. intervention by unauthorized persons into the product
5. unprofessional repair of the product

In case of guarantee or post-guarantee service, send the thermostat to the manufacturer's address.



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