

# INTELLIGENT THERMOSTAT PT55 X

**for boiler control with output modulation and the OpenTherm communication**

**Possibility of connection:** (modules are not a part of PT55 X, they can be additionally purchased)

- of the **MSI** external module of fault indication
- of the **GSTI** module for the thermostat control by mobile phone

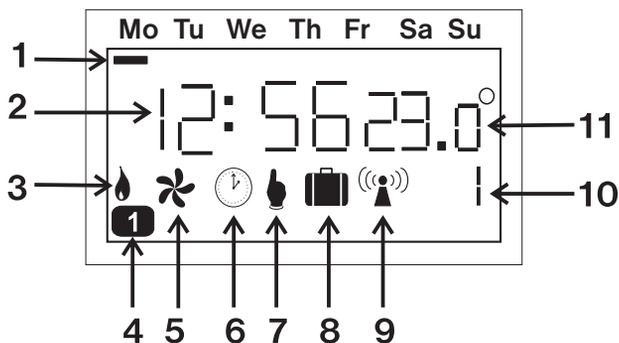
### Important warning:

Before using the thermostat it is necessary to check which functions from the OpenTherm protocol are used by your heating appliance (some heating appliances do not use all functions of the OpenTherm protocol)!

### List of used abbreviations:

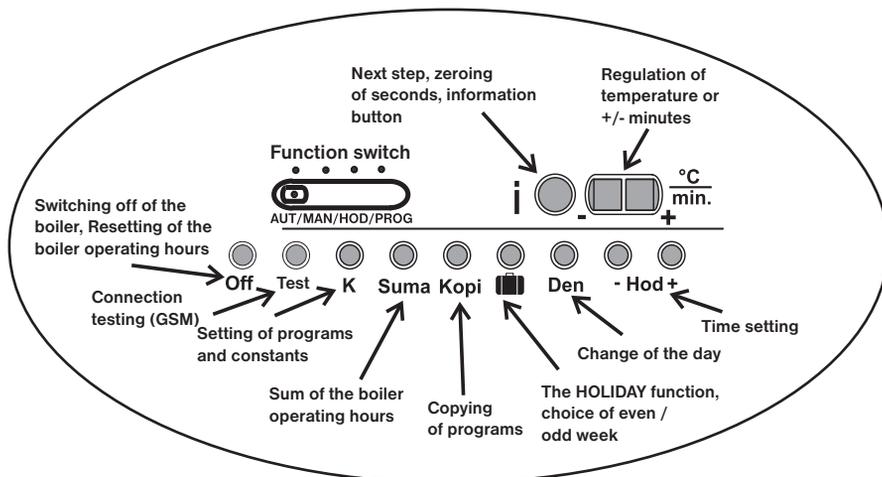
OT+	: the OpenTherm Plus protocol (two-way communication)
OT-	: the OpenTherm Lite protocol (one-way communication, information from the boiler will not be displayed!)
UT	: central heating
TUV	: warm service water
AUT	: automatic mode
MAN	: manual mode
HOD	: current time setting
PROG	: programming
Off	: the off-mode
K	: constants
SUMA	: sum of boiler operating hours
KOPI	: program copying
LCD	: display
PZT	: function of premature switching-on of the heating
POdl	: required floor temperature
POA	: required temperature in the AUT mode
POM1	: the first required temperature in the MAN mode
POM2	: the second required temperature in the MAN mode
OUT	: outside temperature
PrU	: flow of water in liters per minute
tUA	: the TUV required temperature in the AUT mode
tUM	: the TUV required temperature in the MAN mode
Utt	: temperature of reverse gear to the boiler
LInE	: communication line
Err	: error message (for instance E xxx)

## Display description:



- |   |  |
|---|--|
| <p>1. Indication of the day</p> <p>2. It displays the current or set time and other messages</p> <p>3. <b>In the OT+ mode:</b> the symbol lights when the boiler is switched on for UT/TUV<br/><b>In the OT- mode:</b> the symbol flashes according as it is necessary to heat (the more necessity of heating, the longer light time)</p> <p>4. Number of program or TUV interval</p> | <p>5. Summer mode (see page 5)</p> <p>6. Current time setting</p> <p>7. Manual mode</p> <p>8. Holiday mode (page 9)</p> <p>9. <b>In the OT+ mode:</b> symbol lights<br/><b>In the OT- mode:</b> symbol flashes</p> <p>10. Indication of running or set function</p> <p>11. Seconds or temperature in °C, eventually the boiler output in %</p> |
|---|--|

## Description of controls:



## INTRODUCTION

PT55 X is an ideal thermostat for control of boilers with the output modulation, using the OpenTherm Plus or OpenTherm Lite (OT+/OT-) communication protocol. Thanks modern technologies, applied in the PT55X thermostat, the optimal temperature regulation in room can be achieved and thereby the total cost of heating can be reduced.

**Warning:** Before the thermostat assembly and setting, it is necessary to make sure that your heating system uses functions of the OpenTherm protocol.

**We will connect the line and will check the function:**

If the communication is in the OT+ mode, the "👤" sign is indicated on LCD.

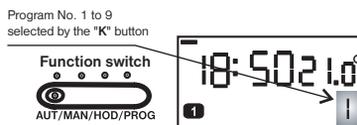
If the communication is in the OT- mode, this sign flashes.

Thermostat is automatically powered from the heating appliance (through communication line).

## OPERATING INSTRUCTIONS

### Switch functions: (from the left side)

**1. AUT :** The thermostat works according to the preset program. The program is selected by pressing the "K" button. If the mode of even and odd weeks is set, this option is disabled. The **t** program cannot be selected in this mode (it is intended for the TUV control).



**2. MAN :** It serves for manual temperature setting.

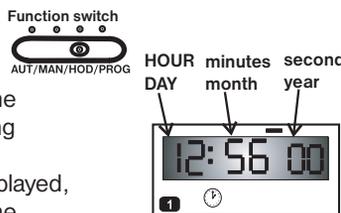
The "👤" symbol is on display.

Two required temperatures can be set in this mode (see page 11). Set temperatures are selected by pressing the "K" button.



**3. HOD : Current date and time setting**

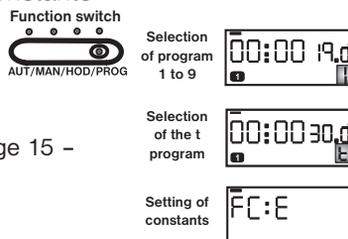
Time is displayed on LCD and indication of **CLOCK** flashes. Set required data by means of the "+/-" buttons, confirm by pressing "i" (record). Use the same procedure to set the minutes and seconds. After setting the time, the date displays in the following format: day, month and year (only two last digits of the year are displayed, 07=2007). Proceed in the same way as setting the time. Day in week is selected automatically.



**4. PROG :** Thermostat programming and setting of constants

Thermostat enables to set six intervals and temperatures for each day. Select by means of the "K" button (constant) the programming of:

- the first, second program,
- viewing of fixed programs "3" to "9" for UT (see page 15 - they can be also modified)
- the "t" program for TUV
- setting of constants (function).

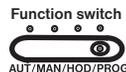


## Setting of the program for UT ( , to 9):

The heating control program.

Set always the required temperature at a given time.

1, Shift the function switch to the **PROG** position.



2, Select the program  (  to 9) by means of the " **K** " button.

Selection of  
the first  
program



(Note: programs 3 to 9 are preset by the manufacturer – they can be also modified!)

3, Set the first day, time and required temperature by successive pressing of the **DEN**, **+/-Hod.** **+/-min.** **+/-°C** buttons. (Note: Set the change beginning on LCD)

4, Press the " **i** " button (record), so you move to setting of the second time and temperature.

(Note:  to  is displayed in turn on LCD)

5, To set another temperatures in the given day, proceed as in previous case. After setting of the last temperature, PT55X moves automatically to the next day.

If you do not use all 6 possibilities in one day, you move to the next day by successive pressing " **i** " (record).

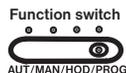
6, Check the program after programming of the whole week. By pressing the " **i** " button you find out gradually, if the program meets your requirements and record it in the table prepared in instructions (for case of the program deletion from memory).

**Note:** The selection of even /odd week can be assigned to programs  and  (more details see page 8).

## Setting of the program for TUV ( ):

Program for control of the TUV reheating.

Set the time intervals, in which you allow the TUV reheating to the required temperature. (If the heating appliance does not provide information on the TUV temperature, then these intervals allow the TUV reheating). It is possible to set 3 time intervals (indication of  to  on LCD).



(**Note:** The program preset by manufacturer 0:24 at 50°C ).

1, Shift the function switch to the **PROG** position.

Selection of  
the t  
program



2, Select the program by means of the " **K** " button.

3, Set by pressing of the **+/-Hod.** buttons the beginning of the first time interval, confirm by the " **i** " button (record). (Note: Minimum jump is 1 hour - 0 to 24 hours can be selected.)

4, Set the end of the first time interval by pressing the **+/-Hod.** buttons, confirm by the " **i** " button (record).

5, Set the required temperature of TUV in this interval by pressing the **+/-°C** buttons, confirm by the " **i** " button (record). (Note: Temperature from 30°C to 65°C can be selected)

6, To set another intervals in the given day, proceed in the same way.

7, After setting of the whole week, check the intervals and record them in the table prepared in instructions (for case of the program deletion from memory).

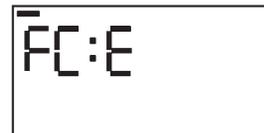
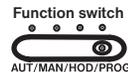
**Info:** If the following day is identical with the previous day, use the " **Kopi** " button.

After setting of the last space of time  (at TUV  ) do not press the " **i** " button, but

" **Kopi** " (see page 7). Day, in which you are just then, will be overwritten to the following day.

## Setting of constants:

The following constants 1-8 (U, C) have to be set for correct function of the thermostat. Move the function switch to the **PROG** position. Press the "K" button so many times, until the **FCE** notice is displayed on LCD. Press the "i" button, so you move to setting of constants (the 1-8 (U, C) constants are indicated in right lower corner of LCD).



For listing among constants use the "+/-Hod" or "i" buttons, for return to programs use the "K" button.

## Minimum and maximum regulated temperature

### Function

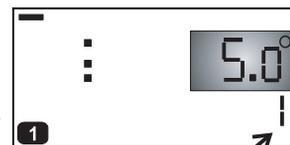
# 1

It enables to set the limitation of minimum adjustable temperature. Set required data by means of the +/- buttons and press "i" (record). It can be selected in the range from 2 to 10°C.

### Function

# 2

It enables to set the limitation of maximum adjustable temperature in the range from 15 to 39°C. Set required data by means of the +/- buttons and then press "i". **Note:** It can be set, using the external sensor (see page 7), in the range from 15 to 99.5°C!



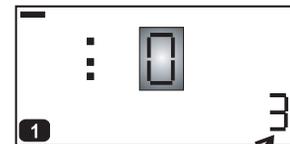
The function to be set

## Selection of the UT mode

### Function

# 3

0 - normal mode  
 1 - premature switching-on of the heating (PZT)  
 2 - summer mode (☼)  
 are set by the +/- buttons, then press "i".



The function to be set

### Normal mode (selection 0)

Routine operation of the heating system without premature switching-on of the heating.

### Premature switching-on of the heating (selection 1)

**This function will guarantee you the required temperature in the required time.**

You must not consider when to switch on the heating, in order to have an adequate temperature in the morning when getting up without unnecessarily long heating in advance. Program only the time of required temperature. Within two operating days, PT55X establishes thermal constants of the room and then it switches the heating on at required time in required advance. The period of premature switching-on is automatically limited to 2 hours.

### Summer mode (selection 2)

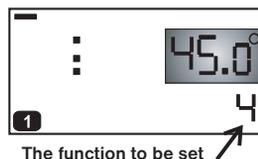
In this mode the switching on of the heating to UT is not allowed. The mode is used especially in the summer period when it is not necessary to heat to UT. The thermostat works only with the t program (for TUV). After this mode activation, the "☼" symbol will appear on display. The HOLIDAY function is not allowed in this mode!

**Note:** Anti-freeze protection (3°C) is functional all the time.

## Minimum and maximum water temperature in heating system

Set the water temperature limits that must be kept. They are to be adapted according to the used heating system.

- Function 4** It enables to set the minimum water temperature. By means of the +/- buttons, set required data and press "i" (record). It can be selected in the range from **5 to 50°C**.

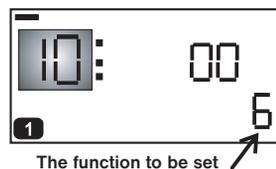


- Function 5** It enables to set maximum water temperature in the range from **13 to 80°C**. By means of the +/- buttons, set required data and press "i". (Difference between the minimum and maximum temperature must exceed 8°C)



## Selection of equithermal or PI regulation

- Function 6** Select required data by means of the +/- buttons and press the "i" button.  
 < - - > - for PI regulation (see page 8).  
 (After selection it is necessary to set the function 8)

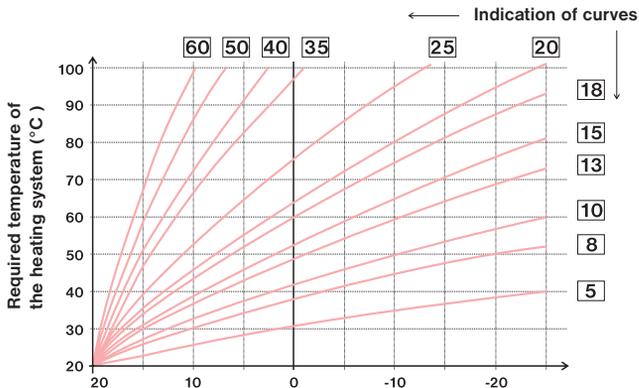


**1 to 60 - for equithermal regulation**, figure 1-60 corresponds to the required heating curve (see below).

**It is advisable to select the equithermal regulation for large buildings where it is impossible to determine the reference room. Principle of the equithermal regulation is the optimization of water temperature of the heating system depending on outside temperature.**

This dependence is expressed by mentioned equithermal curves (for the required room temperature 20°C), according to which you select the required temperature of the heating system water. Thermostat will calculate the heating water temperature according to the selected equithermal curve that it sends subsequently to the boiler. Then the boiler regulates the heating water temperature to the required value. It is necessary to choose rate of the curve according to the heating system to avoid a continuous overheating or underheating of the building. Choice of the right curve for the given system is a long-term matter and it is necessary to test the system at different outside temperatures! It is advisable to adjust the internal temperature in rooms, for example by regulation with thermostatic heads.

**The water temperature of the heating system has minimum and maximum limits, set in the functions 4 and 5! At this regulation, the external sensor must be always connected at the boiler!**



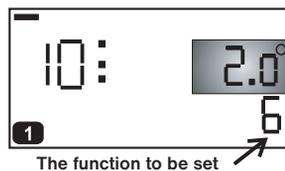
If you select the required room temperature other than 20°C, the thermostat calculates automatic shift of the curve according to the following equation where the coefficient is 1:

$$\text{shift} = (\text{required temperature} - 20) * \text{coefficient}$$

If the temperature does not meet yet your requirements, it is possible by selecting of a suitable coefficient to carry out the **manual correction according to the coefficient**:

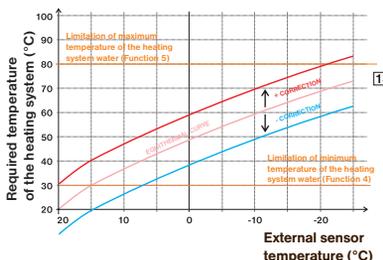
### Setting of the manual correction coefficient

Select the curve **1-60**, confirm by pressing "i" and determine the coefficient for the given curve by means of the +/- buttons in the range from **0.5 to 10.0**, confirm by pressing the "i" button.



**Example** describes the selection of equithermal curve No. 13 (pink) and its calculated correction with the coefficient 2.5 (for required temperatures in the room 24°C and 16°C).

You achieve so the optimal system setting where the water temperature of the heating system is regulated according to current outside temperature.



Another of possibilities of the equithermal regulation is **with correction according to internal temperature**. You can use this selection only after correctly selected equithermal curve.

**At this regulation, the heating curve is automatically corrected depending on both outside temperature and current temperature in the reference room where the thermostat is placed.**

Better temperature comfort in a heated space, optimum operation of the heating system and thereby also higher saving are achieved in this way! At this regulation, the external sensor has to be always connected to the boiler and **Function 6** must be set to "Auto"!

### Automatic correction setting

Select the curve **1-60**, confirm by pressing "i" and determine for the given curve by means of the +/- buttons, select **AUTO** and confirm by pressing "i".



## **Constant of the building influence** (only at the equithermal regulation)

Rate of change of the room temperature at frequent fluctuations of the outside temperature depends on the building structure and insulation. Rate of the temperature change can be taken into account by means of this constant according to the type of a heated building.

### 1. Heavy building "t"

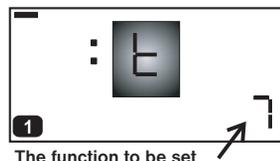
**Function 7**

It reacts more slowly to the outside temperature changes (correctly insulated building).

### 2. Light building "L"

It reacts more quickly to the outside temperature changes (badly insulated building).

After selection of the building type, press "i".



7

## Setting of the PI regulation (if you select <-> at Function 6).

### Time period of the PI regulation

Set it by pressing the +/- buttons in the range from **5 to 20 minutes** and confirm by means of "i". Its selection is given by thermal lag of the room. Optimum setting is usually 10 to 15 minutes.



The function to be set

## Function 8

### Proportional band at the PI regulation

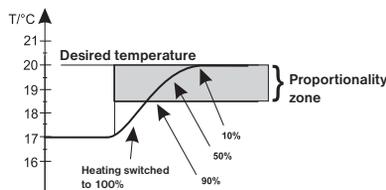
This information determines, from which value the PI regulation will begin to function. For example the required temperature 22.0°C – proportional band 1.5°C. The source will heat to 20.5°C at full capacity. When this value is achieved, the PI regulation will begin to function. The PROPORTIONAL band can be set by pressing of the +/- buttons from **1.5 to 3.0°C**, then confirm by means of "i".



The function to be set

**Principle of the PI regulation consists in comparison of the current room temperature with the required temperature. This regulation depends only on the internal sensor of the thermostat.**

**Selection of Function 8:** When the time period is set, it is necessary to observe the thermal lag of the room. Optimum setting is 10-15 minutes. However, if there are frequent temperature fluctuations in the room, it is recommended to select the shorter time period. The proportional band indicates, from which value the PI regulation will start up.



## Indication of the boiler maintenance

### Function U

Set the date (day, month and year) on LCD when you wish to be informed on the necessity of prescribed service of the boiler. On the required date the **Ud:r** message is displayed on LCD. (You cancel the function by repeated change of the date!)

### Day month year



The function to be set

## Maximum temperature of external (floor) sensor

### Function C

It can be set using the external sensor at the thermostat (see page 13).

Set required data by means of the +/- buttons and press "i". It can be selected in the range from **15 to 99.5°C**.

Correct connection of the external sensor is indicated by the **Cl:d2** message.



The function to be set

External (floor) sensor watches the maximum floor temperature. If the floor temperature achieves the maximum permitted value, the heating appliance is switched off in case when temperature of the measured room did not achieve the required level. There is a repeated switch on of the heating appliance when the temperature on the external sensor drops by 0.5°C. The **STOP** message appears on display.



## Selection of control by means of the GST1 module

### Function

**M**

You select by this constant the possibility of control of PT55 X through the GST1 module (it enables the remote control of the thermostat by SMS message from mobile phone, it can be additionally purchased). Select by pressing the +/- buttons and after the selection confirm by pressing "i".

**MOb** - module is not allowed

**MOb A** module is allowed and it is necessary to set another constants

**t**

telephone number, to which the **return SMS messages** on the thermostat reading are to be sent

**Pln**

PIN code of the SIM card, which you insert into the GST1 module



You find further details on connection and control of PT55 X with the GST1 module in the manual for the GST1 module.

## Firmware version:

Information on the firmware version is displayed as the last data in the Fce mode, for example **10.02**

## OTHER FUNCTIONS OF BUTTONS

### Function of the "Kopi" button:

This function accelerates the thermostat programming. You can copy the program from one day to next day by simple pressing of the "Kopi" button.

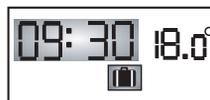


#### PROCEDURE

1. Day indicator has to mark the day that is to be copied to next day.
2. Press the "Kopi" button, the whole program copies itself to next day and the day indicator moves. (It is functional also for the TUV intervals in the t program).

### Function "☑"(holiday) :

This function is very useful in the course of holidays, when the house is empty and it is not necessary to change room temperature.



1. Select the **AUT** or **MAN** mode by the function switch
2. Switch to the holiday mode by pressing the "☑" button
3. Set day, month and year of return from holiday by pressing the "+/-Hod" buttons, confirm by the "i" button.
4. Set hour, minutes (seconds) of return by means of the "+/-Hod" buttons.
5. Finally set the temperature by pressing "+/- °C" that will be maintained for whole period of holiday, for example at 18°C.
6. After approximately 30 seconds, PT55 X switches automatically to the holiday mode!

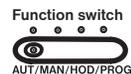
This function can be cancelled only by pressing ☑.

This function **CANNOT** be set in **SUMMER MODE** (Function 3, page 5)!

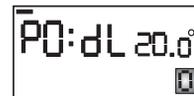
**! Warning: TUV is always disabled in the holiday mode. !**

## Function of the " i " button in the AUT mode:

The following information is displayed by pressing the " i " button in the AUT mode: (the information display can be ended by pressing the " Test " button)



mark  
Current floor temperature (if the external sensor is connected to the thermostat) and the thermostat is connected in the function for floor heating (see page 13).



Display of the required temperature and possibility of its short-term change (PARTY).

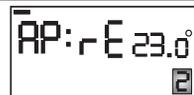
By simple pressing of the "+/- °C " buttons you can make another short-term changes of temperature, given by the program.

If the thermostat is in the " Off " or " ❄ " mode, this information is not available.



It is displayed in case that the heating system automatically heats to achieve the required temperature - the mode of **AUTOMATIC PREMATURE SWITCHING-ON** of the heating.

If the thermostat is in the " Off " mode, this information is not available.



Indication of the current outside temperature (if the external sensor is connected to the boiler).



**1st group of two digits** - the required temperature of the heating system water. (The calculated temperature of UT according to selected equithermal curve, regardless of the minimum and maximum possible temperature, indicated by constants - Function 4 and Function 5 on page 6)

**2nd group of two digits** - current temperature of the heating system water

**3rd group of two digits** - modulation output of the boiler in %.



Indication only in the holiday " 🏠 " mode . Indication and possibility of the change of the required holiday temperature.

This value can be changed by pressing the "+/- °C " buttons.

If the thermostat is in the " ❄ " mode, this information is not available.



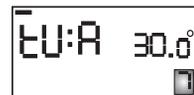
Indication of information on water flow in liters per minute.



Indication of condition of the TUV reheating.

If the set time interval of the TUV reheating is just running, the required temperature is displayed. You can make short-term change of this value by pressing the "+/- °C " buttons (the temperature from 30°C to 65°C can be selected). The change will last up to next change given by the program for TUV (🕒 ). It cannot be changed in the " 🏠 " and " ❄ " modes.

If the thermostat is out of this interval, 0°C is indicated and that means, the TUV reheating is not allowed.

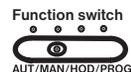


If the boiler enables it, temperature of the reverse gear to the boiler is displayed in this position.



## Function of the " i " button in the MAN mode:

The following information is displayed by pressing the " i " button in the MAN mode: (the information display can be ended by pressing the " Test " button)



mark



Current floor temperature (if the external sensor is connected to the thermostat) and the thermostat is connected in the function for floor heating (see page 13).



Indication and possibility to change the 1st required temperature. You can change this value by simple pressing of the "+/- °C " buttons.



If the thermostat is in the " Off " or " \* " mode, this information is not available.



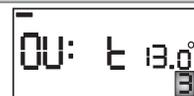
Indication and possibility to change the 2nd required temperature. You can change this value by simple pressing of the "+/- °C " buttons.



If the thermostat is in the " Off " or " \* " mode, this information is not available.



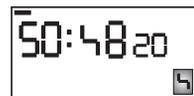
Indication of the current outside temperature (if the external sensor is connected to the boiler).



**1st group of two digits** - the required temperature of the heating system water. (The calculated temperature of UT according to selected equithermal curve, regardless of the minimum and maximum possible temperature, indicated by constants - Function 4 and Function 5 on page 6)

**2nd group of two digits** - current temperature of the heating system water

**3rd group of two digits** - modulation output of the boiler in %.



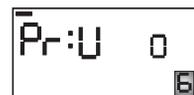
Indication only in the holiday " \* " mode . Indication and possibility of the change of the required holiday temperature.

This value can be changed by pressing the "+/- °C " buttons.

If the thermostat is in the " \* " mode, this information is not available.



Indication of information on water flow in liters per minute.



Indication of the condition of the TUV reheating.

If the set time interval of the TUV reheating is just running, the required temperature is displayed. You can make short-term change of this value by pressing the "+/- °C " buttons (the temperature from 30°C to 65°C can be selected). The change will last up to next change given by the program for TUV (E). It cannot be changed in the " \* " and " \* " modes.

If the thermostat is out of this interval, 0°C is indicated and that means, the TUV reheating is not allowed.



If the boiler enables it, temperature of the reverse gear to the boiler is displayed in this position.



## Function of the “ Suma “ button:

This is an informational button indicating the number of the boiler operating hours. The “ H “ symbol is shown on the display. Data displayed on LCD represents 9 906 hours and 43 minutes. These hours can be reset by pressing the “Off” button when the Suma function is active.



## Function of the “ Off “ button:

By pressing of this button the boiler is switched off (“ O “). On display the OF:F message and data on the current time and temperature appear in turns. The function can be cancelled by means of the same button or by changing the switch position. In the AUT mode, the Off function is cancelled by next program temperature change. (You display information on TUV by pressing the “ i “ button, other buttons are not functional).



## Selection of even and odd week

If you have the programmed program 1 and 2, you can determine which will be active in the odd (even) week.

The function switch has to be in the PROG position. Select the program 1 by pressing the “ K “ button. Determine by pressing the “ L “ button, which week is concerned (L – odd, U – even, 1- without determination). The second program is determined automatically (U, L, 2).



Even or odd week  
 L Odd U Even I Without determination

If the even and odd weeks are selected, the thermostat works always in the AUT mode according to this selection. If the weeks are not selected, the program is active that you select by the “ K “ button. You have here a possibility to select the program 1, 2 that you created or the fixed programs “3” to “9” according to tables (page 15).



Program number  
 1-9

## ERROR MESSAGES

If the communication line between the thermostat and boiler is disconnected or cut, the **Line message appears on display** and the colon will start to flash.

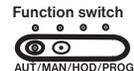


After the communication is recovered, the colon stops to flash. Within 5 s the thermostat returns do normal mode. If failure of the communication line is not longer than 8 hours, all set data remain stored!



If failure of the communication line is longer than 8 hours, it is enough to set only the clock (in case of extremely long failure also the date). Constants and programs remain further stored in the thermostat!

**! Warning: Pay attention, that when connecting the communication line, the function switch would be always in the AUT/MAN position.**



The OpenTherm protocol enables to send error messages from the boiler to the thermostat that have different importance. PT55X indicates these messages in the following way:

Possibility of error indication is **E xxx**, where **xxx** takes the values from **001 to 255**. This type of errors can vary according to the boiler manufacturer, for that reason it is necessary to contact the service engineer or manufacturer. It concerns the errors, for example: bad flue gas installation, failure of the outside temperature sensor etc.

## EXTENDED FUNCTIONS OF PT55 X

### 1, Function - internal sensor

The external sensor is not connected, after connection to the heating system the thermostat measures room temperature by the internal sensor. Function C is not set in this case!

### 2, Function - external sensor

After the external sensor connection (see Figure No. 1), carry out RESET (by simple pressing the RESET button). Check the correct sensor connection: **Function C** is the **Ci:d2** message (see page 9)



At Function 2 (page 5) it is possible to set another maximum temperature in range from 15 to 99.5°C. The temperature is measured by the external sensor. The advantage is that it is possible to measure the temperature in other room than in which the thermostat is placed (regulation of the temperature of water, floor, technological processes etc.).

Note: After the external sensor disconnection it is again necessary to carry out RESET, the internal sensor becomes active again.

### 3, Function - both internal and external sensors = floor heating

PT55 X watches over maximum floor temperature and at the same time it controls the room temperature. The thermostat regulates (at the PI regulation) room temperature according to the internal sensor (standard function of the thermostat).

- Connect the external sensor (see Figure No. 1) that watches over maximum floor temperature.
- Carry out **RESET**, the **Ci:d2** message will be displayed at **Function C** (it indicates the correct connection).
- At **Function C** set the maximum floor temperature, at which the thermostat is to be switched off.



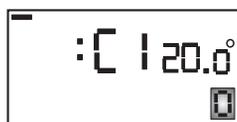
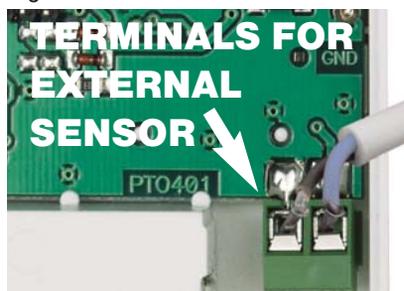
If the floor temperature achieves maximum permitted value, the thermostat will be switched off in case when temperature of the measured room did not achieve the required level. The thermostat will be switched on again when the external sensor temperature drops by 0.5°C.

#### It is necessary to set maximum temperature of the external sensor (see Function C, page 9)

In order to find out quickly the current temperature of the internal and external sensors, you can use the “-/+ Hod” button, on display **C1** (for the internal sensor temperature) or **C2** (the external sensor temperature) will be subsequently displayed. When pressing the “i” button, the maximum set temperature for floor (external) sensor will be indicated in the “i” position (see **Function C** on page 9).

**CONDUCTORS TO SENSORS MUST NOT BE LAYED PARALLEL TO POWER CONDUCTORS!** After connection of the external sensor it is necessary to form a suitable hole into plastic box, for input leads of the sensor!

Figure No. 1: External sensor connection



#### Supplied sensor types:

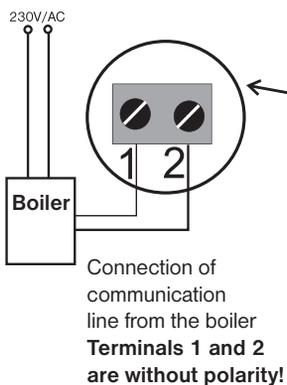
**CT01 C 10kΩ** conductor CYXY 2\*0.5mm, length 1.5 m, metal case, for measurement to 70°C.

**CT01 S 10kΩ** conductor - silicone, length 1.5 m, metal case, for measurement to 99°C.

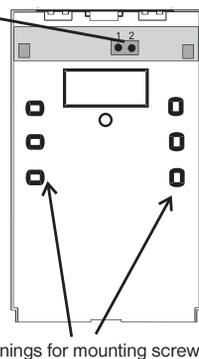
**CT01 P 10kΩ** conductor CYXY 2\*0.5mm length 1.5 m, PVC plastic package, suitable for absorption in a fluid to 70°C.

## Installation:

**Figure No. 2**



**Figure No. 3**



Install the thermostat on a suitable place, where its operation will not be influenced by direct flow of hot air from the heater, by solar radiation and other disturbing influences. Also avoid the installation on the outer wall.

### Procedure:

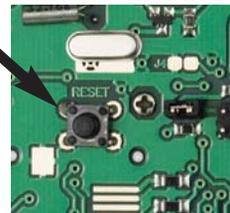
The PT55X thermostat consists of two parts: the front one – the microprocessor one (**Figure No. 2**) and the rear one – the switching one (**Figure No. 3**). In this way very easy and fast installation of the thermostat into installation boxes of the KU/KP68 type is achieved.

1. Open the case of PT55X in the place indicated by arrow on **Figure No. 2** and so divide the thermostat to two parts.
2. Grasp the rear part and fasten it into installation box (see **Figure No. 3**), at the height of minimally 1.5 m.
3. Connect the communication line to terminal board from the boiler according to view of **Figure No. 3**.
4. Then it is enough only to snap the front part from above to the rear one.  
Program the PT55X thermostat and then it is ready for operation.

**Note:** Pay attention after connection of the communication line that the function switch would be in the **AUT/MAN** position!

### The RESET button:

On the rear side of the microprocessor part a button is placed that should be used in case of indeterminable conditions – all saved changes will be preserved. If it is necessary to cancel all set parameters and programs, use the following procedure (factory setting). Press simultaneously the **RESET + Off** buttons. Release the **RESET** button and subsequently the **Off** button.



**The installation of PT55 X may be performed only by a person with appropriate qualification in electrical engineering.**

Tables for recording of your programs

Optional program No. 1 - for heating						
	1	2	3	4	5	6
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

Optional program No. 2 - for heating						
	1	2	3	4	5	6
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

POSSIBILITY OF SELECTION OF THE EVEN OR ODD WEEK (MORE DETAILS SEE PAGE 7)

Tables of fixed programs (They can be modified)

program No.3	1	2	3	4	5	6
Monday	05/21	06/18	12/20	16/21	18/22	21/18
Tuesday	05/21	06/18	12/20	16/21	18/22	21/18
Wednesday	05/21	06/18	12/20	16/21	18/22	21/18
Thursday	05/21	06/18	12/20	16/21	18/22	21/18
Friday	05/21	06/18	12/20	16/21	18/22	21/18
Saturday	07/21	21/18				
Sunday	07/21	21/18				

program No.4	1	2	3	4	5	6
Monday	06/21	07/18	15/21	18/22	22/18	
Tuesday	06/21	07/18	15/21	18/22	22/18	
Wednesday	06/21	07/18	15/21	18/22	22/18	
Thursday	06/21	07/18	15/21	18/22	22/18	
Friday	06/21	07/18	15/21	18/22	22/18	
Saturday	07/21	18/22	22/18			
Sunday	07/22	18/23	22/19			

program No.5	1	2	3	4	5	6
Monday	08/21	09/18	15/21	18/22	23/18	
Tuesday	08/21	09/18	15/21	18/22	23/18	
Wednesday	08/21	09/18	15/21	18/22	23/18	
Thursday	08/21	09/18	15/21	18/22	23/18	
Friday	08/21	09/18	15/21	18/22	23/18	
Saturday	08/21	18/22	22/18			
Sunday	08/21	18/22	22/18			

program No.6	1	2	3	4	5	6
Monday	07/21	09/18	15/22	18/23	22/18	
Tuesday	07/21	09/18	15/22	18/23	22/18	
Wednesday	07/21	09/18	15/22	18/23	22/18	
Thursday	07/21	09/18	15/22	18/23	22/18	
Friday	07/21	09/18	15/22	18/23	22/18	
Saturday	07/21	18/23	22/18			
Sunday	07/21	18/23	22/18			

program No.7	1	2	3	4	5	6
Monday	07/22	09/18	15/23	18/24	22/18	
Tuesday	07/22	09/18	15/23	18/24	22/18	
Wednesday	07/22	09/18	15/23	18/24	22/18	
Thursday	07/22	09/18	15/23	18/24	22/18	
Friday	07/22	09/18	15/23	18/24	22/18	
Saturday	08/22	18/24	22/18			
Sunday	08/22	18/24	22/18			

program No.8	1	2	3	4	5	6
Monday	06/20	08/18	14/21	17/22	22/17	
Tuesday	06/20	08/18	14/21	17/22	22/17	
Wednesday	06/20	08/18	14/21	17/22	22/17	
Thursday	06/20	08/18	14/21	17/22	22/17	
Friday	06/20	08/18	14/21	17/22	22/17	
Saturday	07/21	17/23	22/19			
Sunday	07/21	17/23	22/19			

**Example:**  
8/23 is the set temperature of 23°C at 8:00

program No.9	1	2	3	4	5	6
Monday	08/23	21/18				
Tuesday	08/23	21/18				
Wednesday	08/23	21/18				
Thursday	08/23	21/18				
Friday	08/23	21/18				
Saturday	08/23	21/18				
Sunday	08/23	21/18				

The optional t program - for the TUV reheating								
Intervals	1		2		3			
	FROM	TO	FROM	TO	FROM	TO	FROM	TO
Monday								
Tuesday								
Wednesday								
Thursday								
Friday								
Saturday								
Sunday								

**Factory setting:**  
week program, every day from 00:00 to 24:00 at 50°C

# Intelligent thermostat PT55 X

**PT55X** is an ideal thermostat designed for control of boilers with the output modulation, using the OpenTherm Plus (OT+) communication protocol. On the basis of this protocol, two-way communication (OT+) runs between the thermostat and the boiler. The thermostat acquires necessary information, for example on the outside temperature, that it processes and transfers subsequently back to the boiler. This communication system enables the optimum operation of the boiler and heating system including TUV, whereby longer operating life of the boiler and more savings are achieved.

## Main advantages of PT55 X:

- Support of the OpenTherm Plus protocols
- Possibility to set up to nine week programs for UT with six temperature changes per day, possibility to select the even/odd week
- Equithermal regulation (according to outside temperature)
- PI regulation (according to internal temperature)
- Saving summer mode, for the period out of heating season
- Possibility to connect the floor sensor and accompanying watching of the maximum floor temperature
- Supply directly through the communication line
- Automatic switch to WINTER or SUMMER time
- Short-term change of temperature (the PARTY function)
- Automatic indication of the boiler maintenance
- Calendar to the 2027 year
- The HOLIDAY function
- Possibility of automatic or manual operation
- Possibility to set the week program for TUV with three time intervals per day
- Equithermal regulation with automatic correction according to the internal room temperature
- Foreseeing system (PZT) guarantees the determined temperature in the required time. Adaptive controller evaluates temperature gradient of the room and can determine the period necessary to achieve the required temperature.
- The E-EPROM memory stores all data for an unlimited period, even during the power failure
- The Kopi function for copying of days of the program
- Indication of the boiler operating hours
- Easy control
- Well-arranged display

### Technical parameters

Communication line polarity length	twin cable without polarity to 50 m
Min. program. time for UT	10 minutes
Min. program. time for TUV	1 hour
Range of set temperatures	+2°C to 39°C
Range of set water temp. of UT	+5°C to +80°C
Range of the TUV set temp.	+30°C to 65°C
Min. indication step	0,1°C
TUV hysteresis	5°C
Accuracy of measurement	0,5°C
Working temperature	0°C to 40°C

### CERTIFICATE OF GUARANTEE

(guarantee period for the product amounts to 2 years)

product No.:	date of sale:
	stamp of shop:
examined by:	

In case of the warranty and after-warranty service, send the thermostat to the manufacturer's address.



**ELEKTROBOCK CZ s.r.o.**  
 Blanenská 1763  
 Kuřim 664 34  
 Tel./fax: +420 541 230 216

[www.elbock.cz](http://www.elbock.cz)

f.w.10.02