Centrometal

HEATING TECHNIQUE

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ENG

TECHNICAL INSTRUCTIONS

using of **CONTROLLER**
hot water boiler **PelTec-Compact**

CE

WiFi

THE FIRST START-UP MUST BE DONE BY AUTHORIZED PERSON, OTHERWISE PRODUCT WARRANTY IS NOT VALID.

PelTec-Compact

Content

SWITCHING ON THE CONTROLLER

After switching on "Main switch (0/1)", the screen will show the first initial message screen and then the language selection menu. To choose the language, you must press the flag displayed on the screen indicating the desired language, then confirm the selection with Button to confirm the selection and access the "Main screen (PC-OE)".

INITIAL MESSAGE

Software version

The flag (language), which is selected

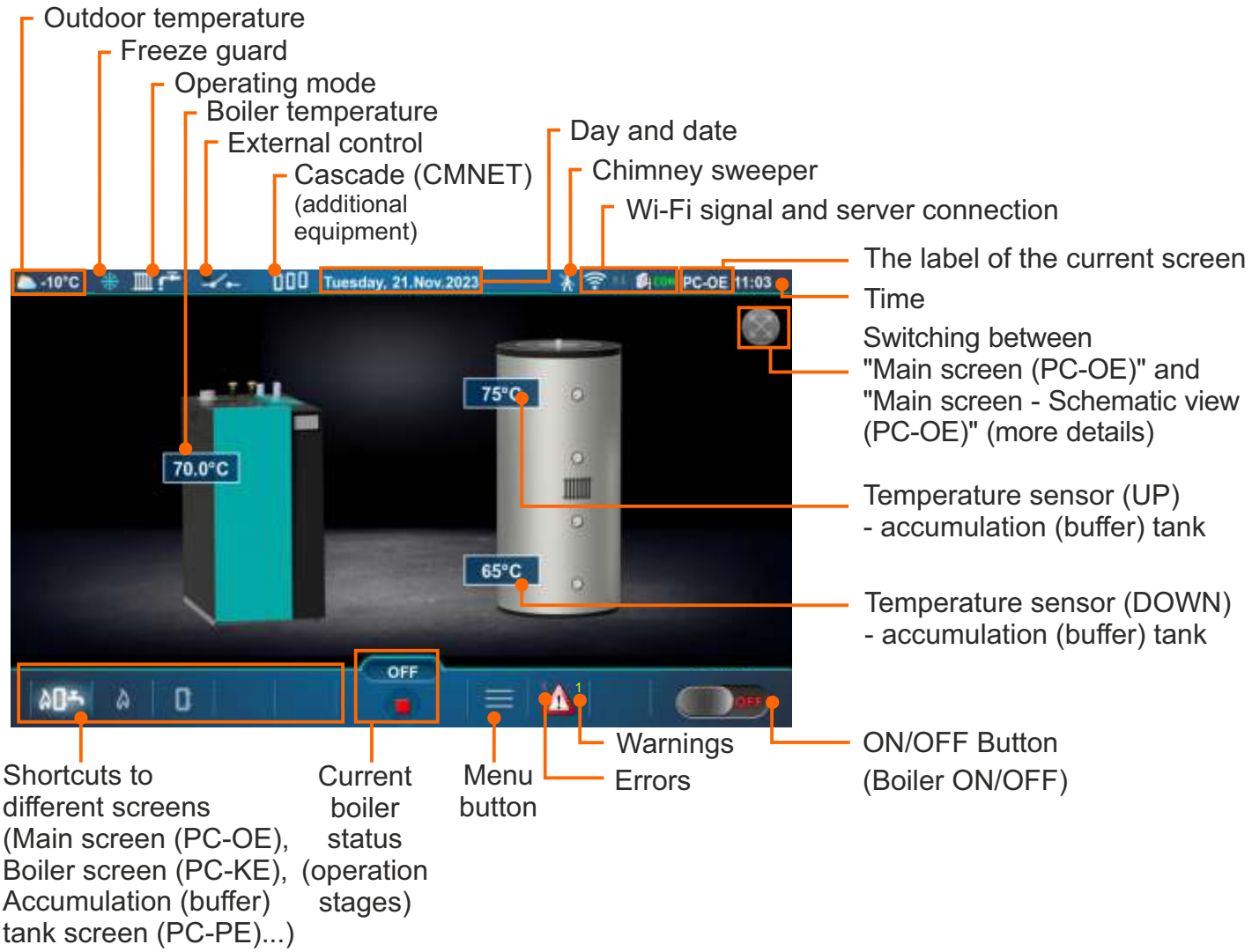
CONFIRM button - button to confirm the selection and access the "Main screen (PC-OE)"

⚠	**If you touch the screen when you switch on "Main switch (0/1)"("Firmware update tool" will appear on the screen), the controller is in "Firmware update". This setting should be used only by authorized technician. If this happens, it is necessary to switch off "Main switch (0/1)" and switch it on again without touching the screen.**

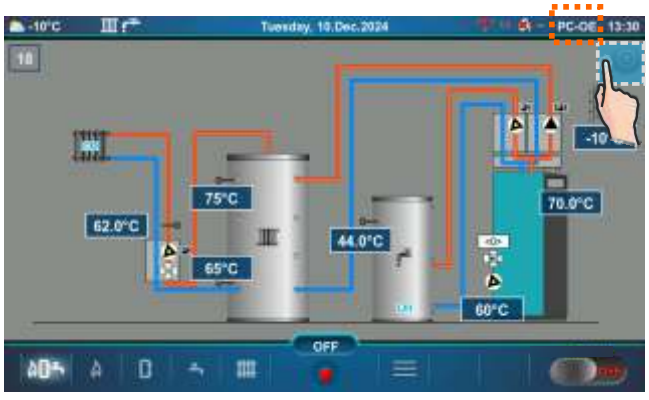
⚠	**The boiler cannot be switched on nor the user menu displayed if value of the weighed pellets is not entered (menu Installation -> Commissioning -> Pellets weighing).**

MAIN SCREEN (PC-OE) AND MAIN MENU

After confirmation of the language selection, the "Main screen (PC-OE)" is displayed.



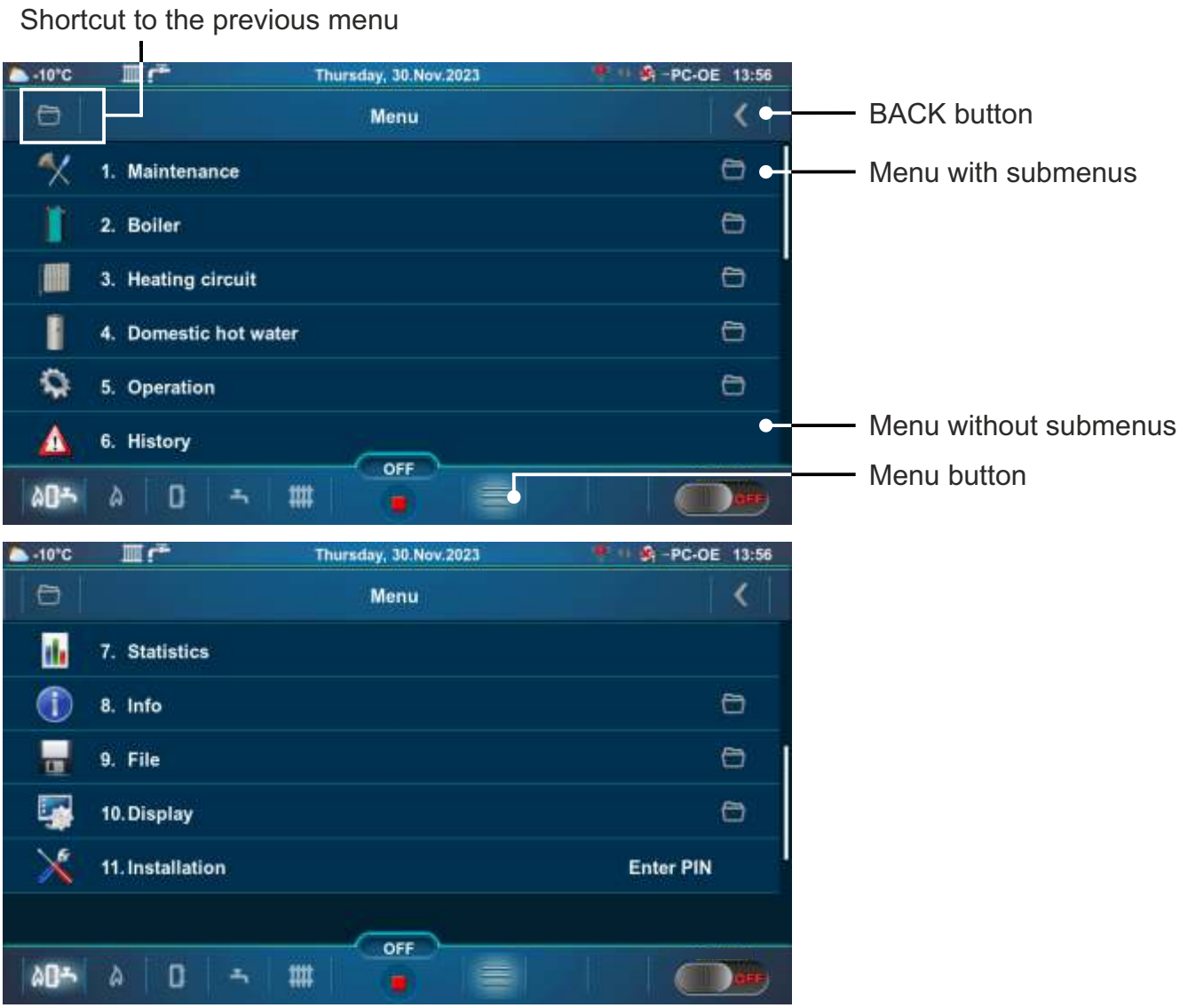
Main screen (PC-OE)



Main screen - Schematic view (PC-OE)

The main menu allows you to select the desired submenu. To select a specific submenu, the appropriate icon on the screen must be pressed. To return to "Main Screen (PC-OE)", press the "Menu button" or "BACK button".

Returning to the previous menu is possible with the "BACK button" or by pressing the icon "Shortcut to the previous menu", where you can select the submenu to which you want to return.



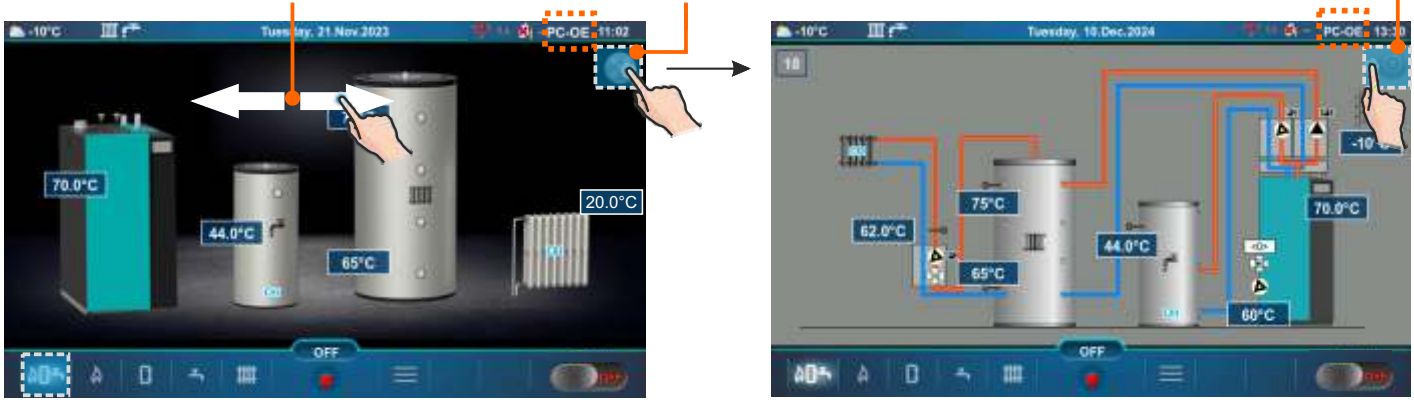
There are 9 to 11 menus in total (depending on the selected configuration).

SHORTCUTS FOR DIFFERENT SCREENS

Swipe left or right to the next screen

Main screen (PC-OE) / "Main screen - Schematic view (PC-OE)" button

Main screen - Schematic view / "Main screen (PC-OE)" button



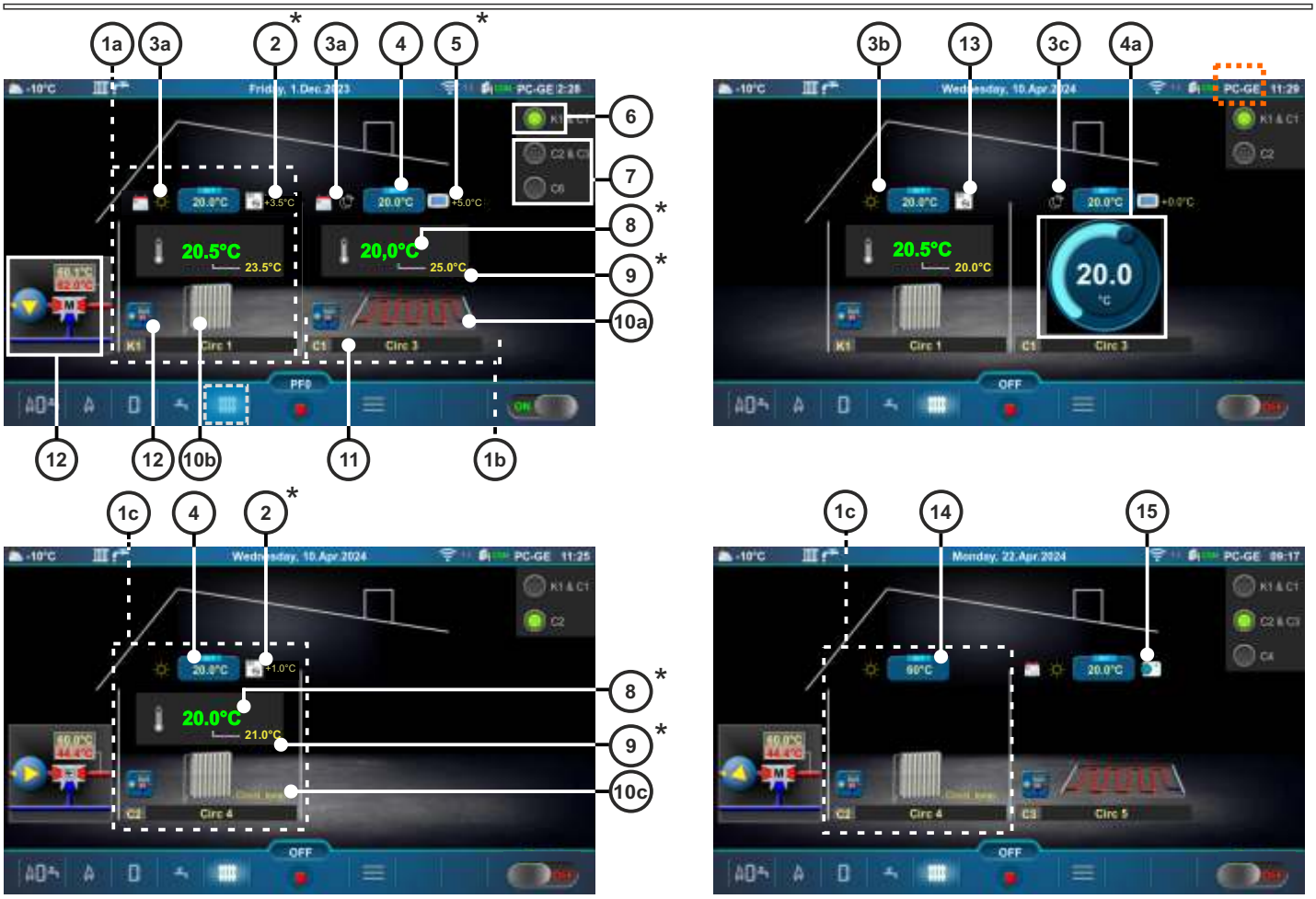
Main screen (PC-OE)

Main screen - Schematic view (PC-OE)

Boiler screen (PC-KE)

Accumulation (buffer) tank screen (PC-PE)

Domestic hot water (DHW) tank screen (PC-SE)

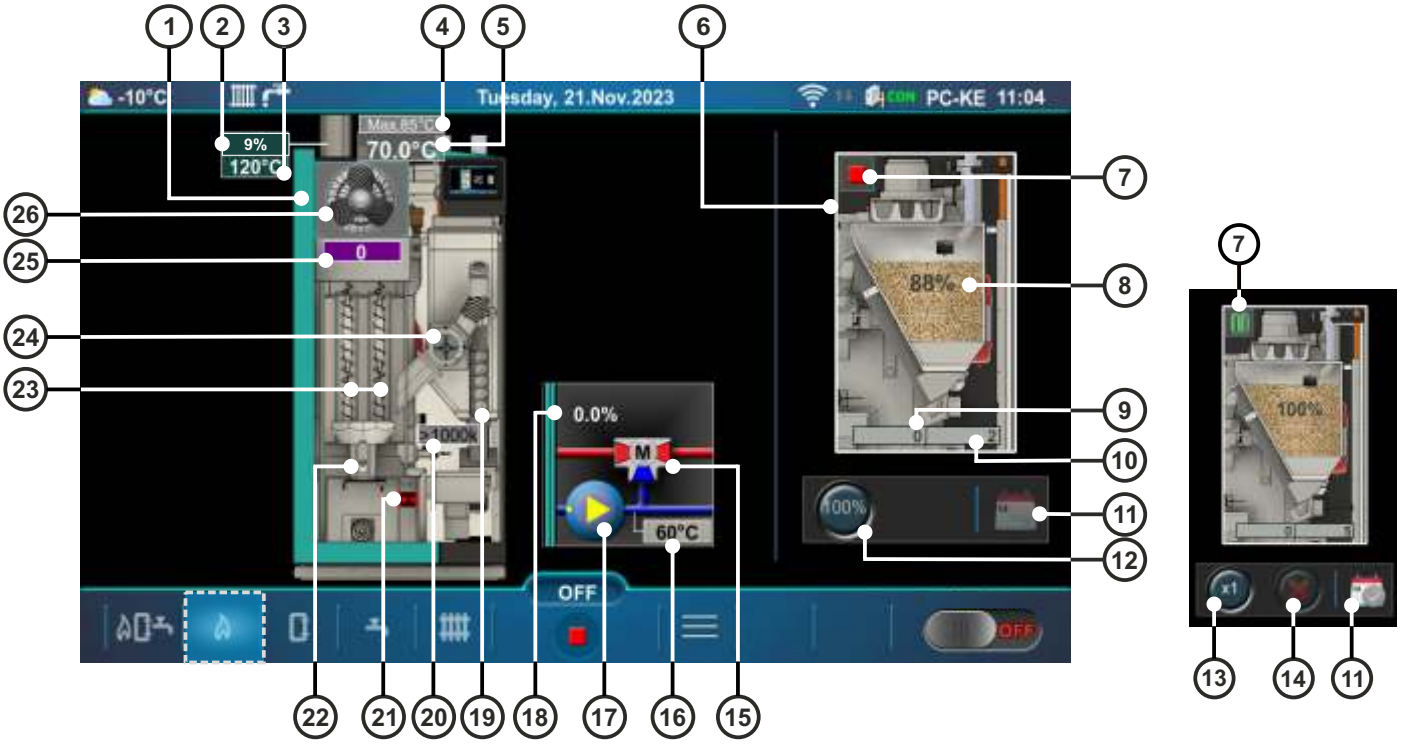


Heating screen (PC-GE)

1a - Boiler heating circuit K1 (Radiators - Heating type is selected)
1b - CM2K Heating circuit C1 (Floor - Heating type is selected)
1c - CM2K Heating circuit C2 (Constant temperature - Heating type is selected)
2 - Room temperature corrected with room corrector (3 wires) (CSK) (additional equipment)
(instead of label 2 can be label 5)
3a - Activated schedule of the Day/Night temperature
3b - Day temperature is selected
3c - Night temperature is selected
4 - Button for setting the room temperature
4a - Button for quick adjustment of the set room temperature
(it is activated by pressing the Button for setting the room temperature)
5 - Room temperature corrected with digital room corrector (CSK-Touch) (additional equipment)
(instead of label 5 can be label 2)
6 - Boiler heating circuit
7 - CM2K heating circuits (CM2K-additional equipment)
8 - Measured room temperature
9 - Set room temperature + correction
10a - Symbol of floor heating
10b - Symbol of radiator heating
10c - Symbol of constant temperature
11 - Heating circuit symbol ((K1, (K2) - boiler heating circuits), (C1...C6 - CM2K heating circuits)) and custom selected heating circuit name
12 - Shortcut button - 3-way mixing valve with pump, main flow set temperature and measured temperature
13 - Room corrector (CSK) with 2 wires
14 - Button for setting the main flow temperature (setting/changing the temperature is possible if the Button for setting the main flow temperature is pressed)
15 - Room thermostat / Reg. control (thermostat that switches the heating circuit pump on/off)

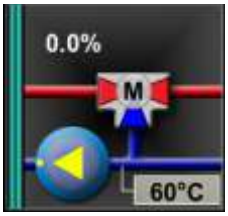
*The symbols will be shown only if corrector is selected in the heating circuit.

SYMBOLS ON THE BOILER SCREEN (PC-KE)

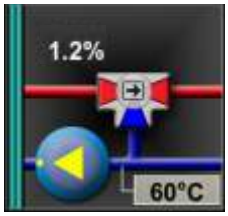


1 - Boiler
2 - Measured O_2 (with lambda probe)
3 - Flue gas temperature
4 - Maximum (set) boiler temperature
5 - Measured boiler temperature
6 - Suction system
7 - Symbol of stop , operation , pause of vacuum turbine
8 - Percentage of pellets in the pellet tank
9 - Countdown of the vacuum turbine operation time
10 - Maximum operating time of the vacuum turbine
11 - Symbole which indicates if Not working schedule table is ON or OFF
12 - Reset of percentage of the pellets in the pellet tank (8) to 100 % (full tank of pellets)
13 - One-time tank filling (independent of the filling sensor)
14 - When the button (13) is activated, pressing the button suction system stops with operation
15 - 3-way mixing valve with actuator (when operating, left/right arrow will be shown)
16 - Boiler return flow temperature
17 - P(PWM) - Boiler pump, position: connected to the boiler
18 - Percentage of opening of the 3-way mixing valve with actuator (0 % - closed, 100 % - open)
19 - Feeder screw symbol (when operating, the symbol moves)
20 - Photocell resistance (flame light intensity in kOhm)
21 - Symbol of microswitch in mechanism for burner grate cleaning
22 - Electric heater symbol (when operating, the symbol changes color)
23 - Turbulator symbol (when operating, the symbol moves)
24 - Rotary valve (RSE) (when operating, the symbol is rotating)
25 - Fan speed (rpm)
26 - Fan symbol (when operating, the symbol is rotating)

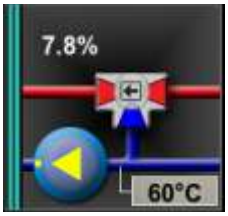
3-way mixing valve with actuator



Actuator does not work

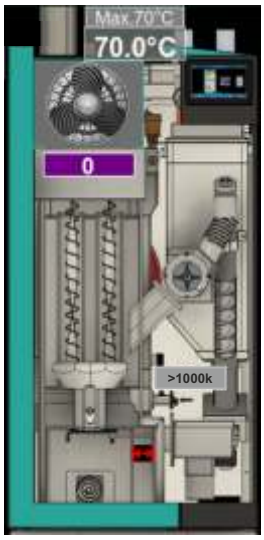


Actuator is opening the valve



Actuator is closing the valve

Flame symbol



There is no flame in the boiler

There is a flame in the boiler

Position of burner grate

% of grate opening (0 %=closed) when grate is at 0 % red symbol must be shown (Closed - ready to operate)

Symbols for opening/closing the grate (=closing / =opening)

% of grate opening (100 %=open) when grate is at 100 % red symbol must be shown (Open - cleaning)

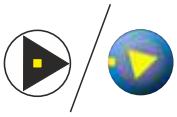
The option is disabled

The option is enabled

CONFIGURATION SYMBOLS

The following symbols are displayed on the controller screen

Pump (when the pump is operating, the symbol rotates, otherwise idle)

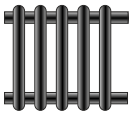


The pump has a work request (in the middle of / next to the pump is the yellow square symbol when there is a operating request of the pump. The pump does not operate if all conditions for its work are not met, for example: low boiler temperature, otherwise the pump operates).

Room corrector (CSK)

Digital room corrector (CSK-Touch)

Room thermostat / Reg. control

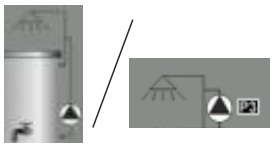


Heating circuit

Buffer tank with integrated DHW tank

Domestic hot water (DHW) tank with current temperature

Accumulation (buffer) tank with current temperature at top and bottom of the tank

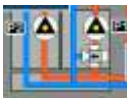
* 

DHW recirculation

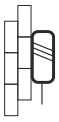
* 

DHW recirculation is installed but is switched off

Two direct heating circuits

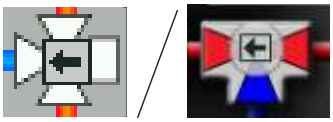


One direct heating circuit and one heating circuit with 3-way mixing valve

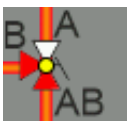


Outdoor temperature sensor

Temperature sensor



3-way mixing valve (shows valve opening and closing)



3-way diverter valve (indicates direction of flow, AB-B)

* The symbol appears only if recirculation exists in the configuration and if the authorized service technician has switched it on in the Installation menu (option "Recirculation installed").

CHANGING/ENTERING PARAMETERS

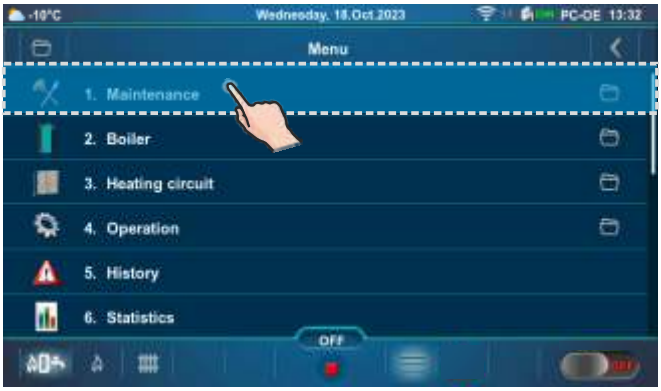
Drag the slider button / press the button to increase/decrease the value

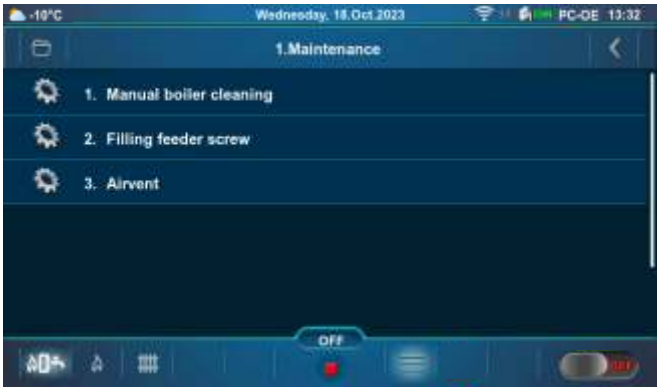
Keyboard: Value entry

Button for multiplication change (left / right) x1, x10, x100

NOTE: The number of menu depends on the selected heating system configuration.

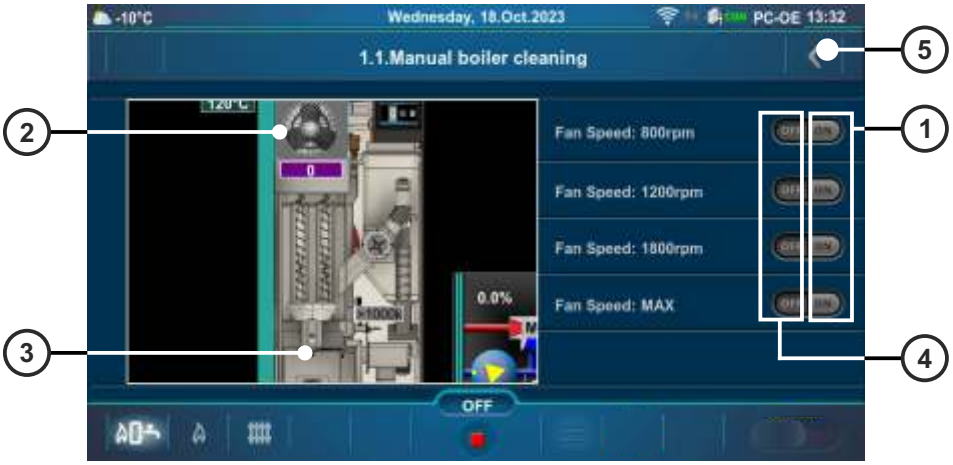
1.0. MAINTENANCE





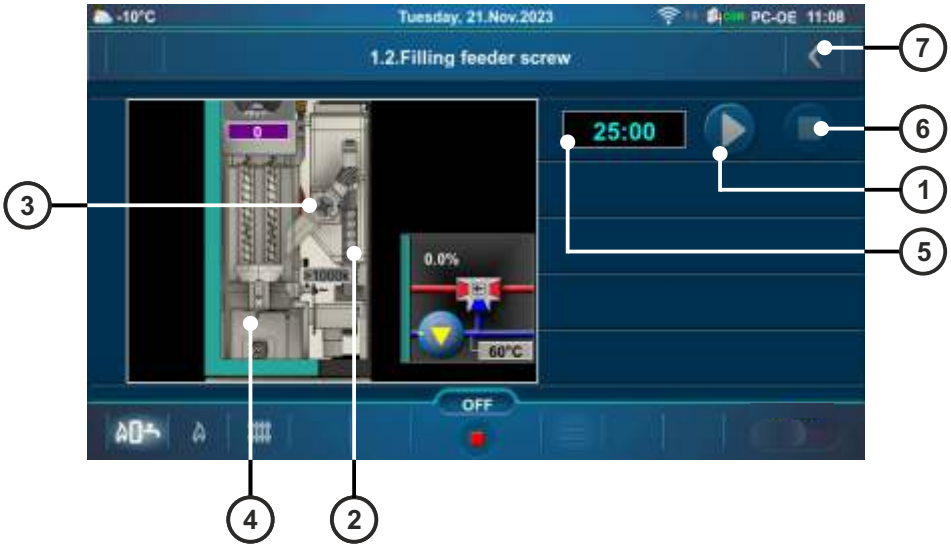
1.1. MANUAL BOILER CLEANING

Manual boiler cleaning - by entering this submenu, the burner grate (3) will move to the open position (100 %). By choosing the desired fan speed (2), the fan starts (press "ON" (1) next to the desired fan speed). This option enables that during combustion chamber cleaning, ash does not come out of the boiler, and since the burner grate is open ash falls into the ash box. After cleaning, it is necessary to press the "OFF" button (4) to stop the fan (the same thing will happen if you press the "BACK button" (5)). When exiting this menu (press the "BACK button" (5)) the burner grate returns to the closed position (0 %). After cleaning, it is necessary to empty the ash box.



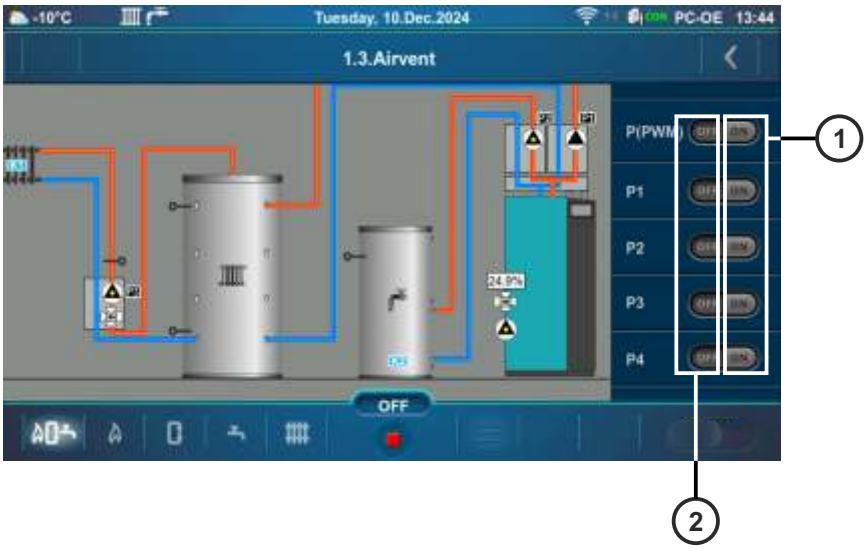
1.2. FILLING FEEDER SCREW

Filling feeder screw - by pressing the "PLAY" button (1) feeder screw (2) and rotary valve (RSE) (3) start to operate (operate 25 min), and the burner grate (4) will move to the open position (100 %) leaving the pellets fall into the ash box. After this process is completed, the feeder screw and rotary valve (RSE) stop and the burner grate returns to its initial position (0 %). Pellets that fall into the ash box must be put back into the pellet tank. The remaining time for filling with the feeder screw is displayed on the screen (5). Before starting this process, the pellet tank must be filled. Filling can be stopped by pressing the "STOP" (6) or "BACK button" (7).



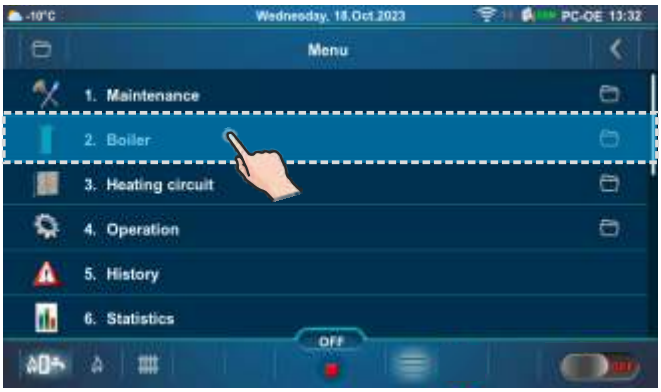
1.3. AIRVENT

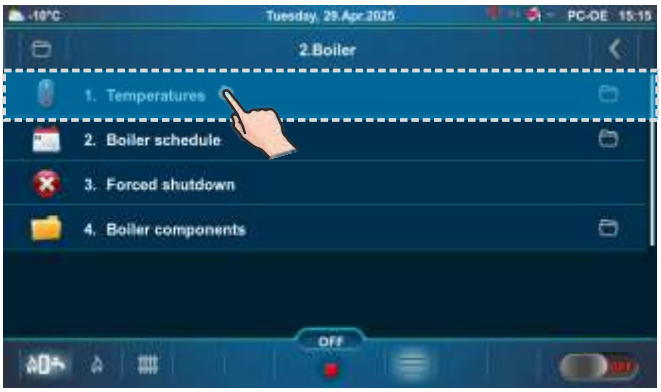
By entering the "Airvent" submenu, the 3-way mixing valve (in the boiler circuit) opens to 50 %. By pressing "ON" (1) next to a pump symbol, the pump starts operating. By pressing the "OFF" button (2) the pump stops. Manually open the other mixing valves of the heating installation (to 50 %) as needed. When exiting this submenu, the 3-way mixing valve (in the boiler circuit) starts to close.



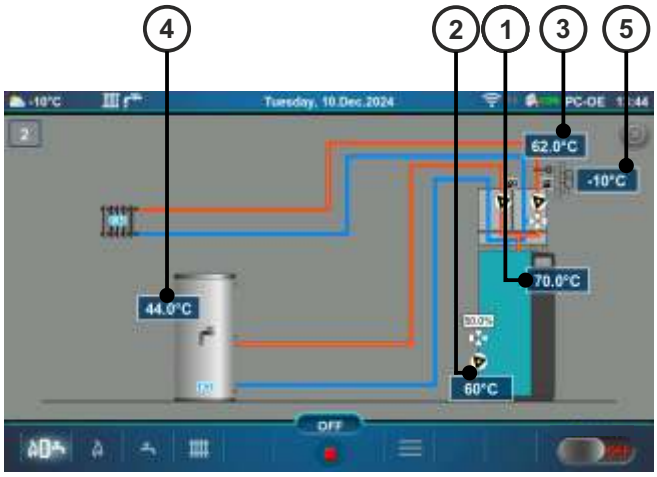
2.0. BOILER

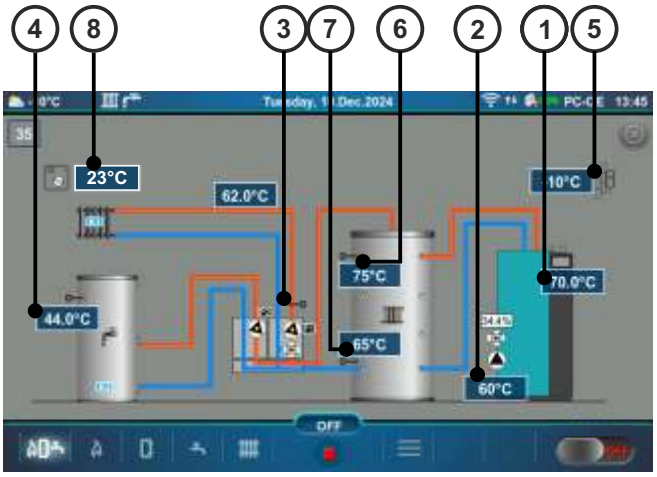
2.1. TEMPERATURE





Temperature choice depends on the configuration of the heating system. Below are shown examples of two configurations (Main screen - Schematic view (PC-OE)).





1 - Boiler temperature sensor
2 - Return flow temperature sensor
3 - Temperature sensor ((K1) Heating circuit 1 - main flow)
4 - Temperature sensor ((K2) Domestic hot water (DHW))
5 - Outdoor temperature sensor
6 - Temperature sensor (UP) - accumulation (buffer) tank
7 - Temperature sensor (DOWN) - accumulation (buffer) tank
8 - Room corrector CSK ((K1) Heating circuit 1) / CSK-Touch (additional equipment)

Configuration: 1, 3, 4, 7, 45.
Temperature values (factory, minimum/maximum):

		Factory:	Min/Max	Unit
*	*1. Maximum boiler temperature (manual entry)*	80	70 / 90	°C
	2. Boiler difference	5	5 / 10	°C

*By turning on the "Chimney sweeper" option, the "Maximum boiler temperature" is automatically set to 90 °C. By turning off the "Chimney sweeper" option, this condition ceases.

Maximum boiler temperature (manual entry) = Manually selected maximum boiler temperature (see **Example of maximum boiler temperature setting: Configuration 1.)
Boiler difference = Boiler temperature difference

**Example of maximum boiler temperature setting: Configuration 1.

Note,
Configuration: 1, 3, 7, 45.
in these configurations, it is possible to connect to the boiler hydraulic crossover (CRO ON) up to 3 units "CM2K module for regulation of 2 heating circuits".
If one of the CM2K circuits is configured as DHW, this will affect the determination of the Maximum boiler temperature and a message about this will be shown after pressing "Maximum boiler temperature".

Configuration: 2, 5, 6.
Temperature values (factory, minimum/maximum):

		Factory:	*Min/Max*	*Unit*
*	*1. Maximum boiler temperature*	80	70 / 90	°C
*	*2. Maximum boiler temperature (manual entry)*	80	70 / 90	°C
	3. Boiler difference	5	5 / 10	°C

*By turning on the "Chimney sweeper" option, the "Maximum boiler temperature" is automatically set to 90 °C. By turning off the "Chimney sweeper" option, this condition ceases.

Maximum boiler temperature = The maximum boiler temperature is calculated on the basis of the DHW set temperature increased by 5 °C - (calculated automatically) or manual entry. (see **Example of maximum boiler temperature setting: Configuration 2.)
Maximum boiler temperature (manual entry) = Manually selected maximum boiler temperature (see **Example of maximum boiler temperature setting: Configuration 2)
Boiler difference = Boiler temperature difference

**Example of maximum boiler temperature setting: Configuration 2.

1. (DHW Temperature + 5 °C) </= Maximum boiler temperature (manual entry):

2. (DHW Temperature + 5 °C) > Maximum boiler temperature (manual entry):

Configuration: 8, 9, 10.
Temperature values (factory, minimum/maximum):

		Factory:	Min/Max	Unit
*	*1. Maximum boiler temperature*	70	70 / 90	°C
	2. Boiler difference	5	5 / 10	°C

*By turning on the "Chimney sweeper" option, the "Maximum boiler temperature" is automatically set to 90 °C. By turning off the "Chimney sweeper" option, this condition ceases.

Maximum boiler temperature = The maximum boiler temperature is calculated on the basis of the DHW set temperature increased by 5 °C. - calculated automatically (see **Example of maximum boiler temperature setting: Configuration 8).
Boiler difference = Boiler temperature difference

**Example of maximum boiler temperature setting: Configuration 8.

1. (DHW Temperature) < 65 °C:

2. (DHW Temperature) >/= 65 °C

Note,
Configuration: 9, 10:
in this configurations, it is possible to connect to the boiler hydraulic crossover (CRO ON) up to 3 units "CM2K module for regulation of 2 heating circuits". If one of the CM2K circuits is configured as a heating circuit or the authorized technician has activated the "And another heating controller" option, this will affect the determination of the maximum boiler temperature (Max. boiler temperature (manual entry), and a message about that will be shown by pressing "Maximum boiler temperature".

Configuration: 11, 12, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44.
Temperature values (factory, minimum/maximum):

	Factory:	Min/Max	Unit
* 1. Maximum boiler temperature	85	70 / 90	°C
2. Boiler difference	5	5 / 10	°C
3. Buffer tank temperature	80	40 / 85	°C
4. Buffer tank temperature difference	10	5 / 40	°C
5. Stop buffer tank difference	5	3 / 30	°C

*By turning on the "Chimney sweeper" option, the "Maximum boiler temperature" is automatically set to 90 °C. By turning off the "Chimney sweeper" option, this condition ceases.

Maximum boiler temperature = The maximum boiler temperature is calculated on the basis of the buffer tank set temperature increased by 5 °C. - (calculated automatically) (see **Example of maximum boiler temperature setting: Configuration 11).
Boiler difference = Boiler temperature difference
Buffer tank temperature = Desired (set) buffer tank temperature
Buffer tank temperature difference = If the difference between the set temperature of the buffer tank and the measured temperature of the buffer tank (measured on the upper (UP) sensor) is greater than the set value "Buffer tank temperature difference", the controller issues a request to heat the buffer tank (the buffer tank pump receives a work request and will operate if the temperature of the water taken by the pump is 5 °C higher than the temperature measured in the buffer tank (measured on the upper (UP) sensor)).
Stop buffer tank difference = Buffer tank shutdown temperature difference. If the difference between the set temperature of the buffer tank and the measured temperature of the buffer tank (measured on the lower (DOWN) sensor) is smaller than the set value "Stop buffer tank difference", the request for heating of the buffer tank is interrupted (the buffer tank pump does not require operation).

**Example of maximum boiler temperature setting: Configuration 11.

1. Buffer tank temperature set to >/= 65 °C:

2. Buffer tank temperature set to <65 °C:

Configuration: 13, 14, 15, 16, 17, 18, 19, 20.
Temperature values (factory, minimum/maximum):

	Factory:	Min/Max	Unit
* *1. Maximum boiler temperature*	85	70 / 90	°C
2. Boiler difference	5	5 / 10	°C
3. Buffer tank temperature	80	40 / 85	°C
4. Buffer tank temperature difference	10	5 / 40	°C
5. Stop buffer tank difference	5	3 / 30	°C

*By turning on the "Chimney sweeper" option, the "Maximum boiler temperature" is automatically set to 90 °C. By turning off the "Chimney sweeper" option, this condition ceases.

Maximum boiler temperature = The maximum boiler temperature is calculated on the basis of the buffer tank set temperature increased by 5 °C or the DHW set temperature increased by 5 °C. - calculated automatically (see **Example of maximum boiler temperature setting: Configuration 13).
Boiler difference = Boiler temperature difference
Buffer tank temperature = Desired (set) buffer tank temperature
Buffer tank temperature difference = If the difference between the set temperature of the buffer tank and the measured temperature of the buffer tank (measured on the upper (UP) sensor) is greater than the set value "Buffer tank temperature difference", the controller issues a request to heat the buffer tank (the buffer tank pump receives a work request and will operate if the temperature of the water taken by the pump is 5 °C higher than the temperature measured in the buffer tank (measured on the upper (UP) sensor)).
Stop buffer tank difference = Buffer tank shutdown temperature difference. If the difference between the set temperature of the buffer tank and the measured temperature of the buffer tank (measured on the lower (DOWN) sensor) is smaller than the set value "Stop buffer tank difference", the request for heating of the buffer tank is interrupted (the buffer tank pump does not require operation).

**Example of maximum boiler temperature setting: Configuration 13

1. Buffer tank temperature set to >/= 65 °C:

1a. Buffer tank temperature set to >/= DHW set temperature

1b. Buffer tank temperature set to < DHW set temperature

2. Buffer tank temperature set to <65 °C:

2a. Buffer tank temperature set to >/= DHW set temperature

2b. Buffer tank temperature set to < DHW set temperature

Note,
Configuration: 17, 18, 19, 20:
in this configurations, it is possible to connect to the boiler hydraulic crossover (CRO ON) up to 3 units "CM2K module for regulation of 2 heating circuits".
If one of the CM2K circuits is configured as a heating circuit or the authorized technician has activated the "And another heating controller" option, this will affect the determination of the maximum temperature of the boiler (in the menu will appear "Maximum boiler temperature (manual entry)") and a message about that will be shown by pressing "Maximum boiler temperature".
If one of the CM2K circuits is configured as DHW, this will affect the determination of the Maximum boiler temperature, and a message about that will be shown by pressing "Maximum boiler temperature".

Configuration: 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32.
Temperature values (factory, minimum/maximum):

		Factory:	Min/Max	Unit
*	*1. Maximum boiler temperature*	80	70 / 90	°C
*	*2. Maximum boiler temperature (manual entry)*	80	70 / 90	°C
	3. Boiler difference	5	5 / 10	°C
	4. Buffer tank temperature	80	40 / 85	°C
	5. Buffer tank temperature difference	10	5 / 40	°C
	6. Stop buffer tank difference	5	3 / 30	°C

*By turning on the "Chimney sweeper" option, the "Maximum boiler temperature" is automatically set to 90 °C. By turning off the "Chimney sweeper" option, this condition ceases.

Maximum boiler temperature = The maximum boiler temperature is calculated on the basis of the buffer tank set temperature increased by 5 °C or on the basis of manual entry. - (calculated automatically) (see **Example of maximum boiler temperature setting: Configuration 21).
Maximum boiler temperature (manual entry) = Maximum boiler temperature manually selected
Boiler difference = Boiler temperature difference
Buffer tank temperature = Desired (set) buffer tank temperature
Buffer tank temperature difference = If the difference between the set temperature of the buffer tank and the measured temperature of the buffer tank (measured on the upper (UP) sensor) is greater than the set value "Buffer tank temperature difference", the controller issues a request to heat the buffer tank (the buffer tank pump receives a work request and will operate if the temperature of the water taken by the pump is 5 °C higher than the temperature measured in the buffer tank (measured on the upper (UP) sensor)).
Stop buffer tank difference = Buffer tank shutdown temperature difference. If the difference between the set temperature of the buffer tank and the measured temperature of the buffer tank (measured on the lower (DOWN) sensor) is smaller than the set value "Stop buffer tank difference", the request for heating of the buffer tank is interrupted (the buffer tank pump does not require operation).

**Example of maximum boiler temperature setting: Configuration 21.

1. (Buffer tank temperature + 5 °C) </= Maximum boiler temperature (manual entry)

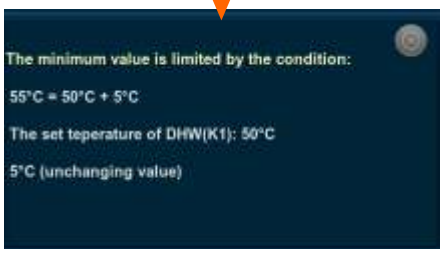
2. (Buffer tank temperature + 5 °C) > Maximum boiler temperature (manual entry)

The way of changing the set temperature:

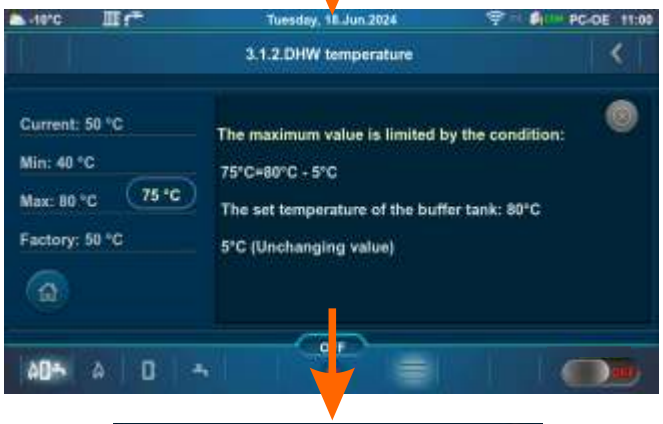
- example of changing the default Buffer tank temperature

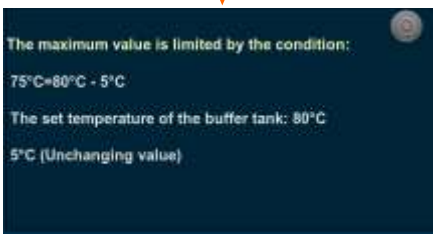
Possible min/max values, factory value and the reasons (descriptions) for some restrictions:

Example: Configuration 20,
Buffer tank temperature



Example: Configuration 20,
DHW temperature





2.1.X. DHW / HEATING

Configuration: 2, 5, 6, 9, 10, 13, 14, 15, 16, 17, 18, 19, 20, 25, 32, 35, 40, 43, 44.

This menu will only appear if "Auto" is selected (automatic switching between DHW / Heating), see point 5.1. of this Technical Instructions.

	Factory:	*Min/Max*	*Unit*
1. Outdoor temperature	20	0 / 40	°C
2. Outdoor temperature difference	3	2 / 10	°C
3. Time (Heating OFF)	30	0 / 10080	min
3. Time (Heating ON)	30	0 / 10080	min

2.2. BOILER SCHEDULE

2.2.1. BOILER SCHEDULE

The possibility of adjusting the operating times is carried out using tables. Three operating time tables can be preset (Table 1, Table 2, Table 3), but only one can be active.

Factory: OFF

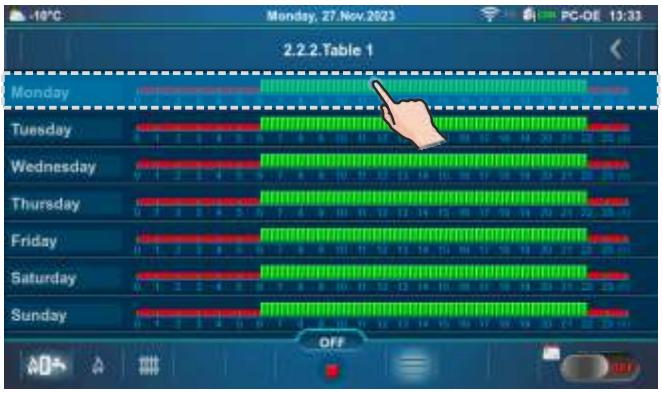
Possible selection:

OFF - operating times are disabled
Table 1 - Table 1 is activated and boiler works according to the settings in Table 1
Table 2 - Table 2 is activated and boiler works according to the settings in Table 2
Table 3 - Table 3 is activated and boiler works according to the settings in Table 3

Example of Table 1 activation.

The icon indicates that the "Boiler schedule" is activated (example: Table 1 is activated).

2.2.2. - 2.2.4. TABLE 1, TABLE 2, TABLE 3



(green)

Boiler operates

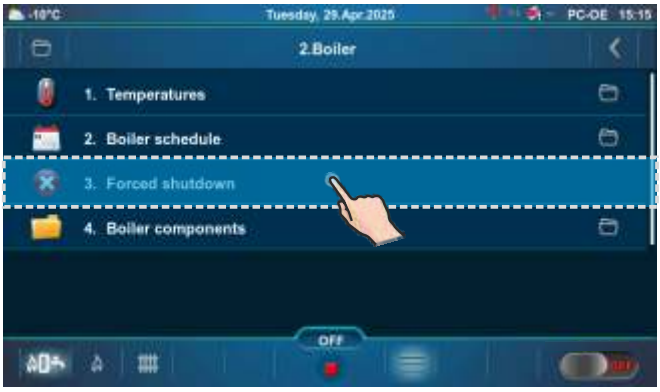
Boiler does not operate

It is possible to set 5 activations and 5 deactivations of the boiler (T1-T5) for each day of the week. In the table, the time when the boiler is operating is marked in green and the time when the boiler is not operating is marked in red. It is possible to set the operating times for one day and copy the same operating times for all other days. Under "COPY TO:", mark the day or days for which you want to have the same operating times and confirm by pressing the "CONFIRM" button.

In the "Table 1" example, the boiler will operate on Monday from 5:00 a.m. to 9:15 a.m., from 2:00 p.m. to 6:00 p.m. and from 7:00 p.m. to 10:00 p.m. In the periods from 00:00 to 4:59 a.m., from 9:16 a.m. to 1:59 p.m., from 6:01 p.m. to 6:59 p.m. and from 10:01 p.m. to 11:59 p.m. the boiler will not operate. The schedule for Monday is copied to Tuesday, Wednesday, Thursday and Friday.

2.3. FORCED SHUTDOWN

"Forced shutdown" option is used for forced shutdown of all processes. First press the ON/OFF button to put the boiler into the shutdown process, then press the "Forced shutdown" button. All processes are stopped. After activating this option, it is necessary to clean the burner grate before restarting.



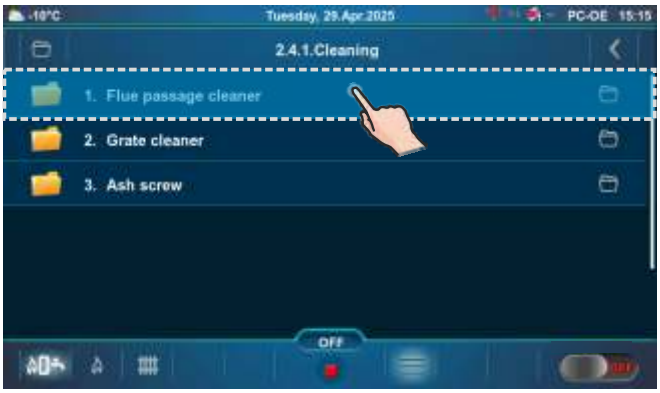
IMPORTANT! To be able to stop all processes, you must first switch off the boiler in the usual way by switching ON to OFF .

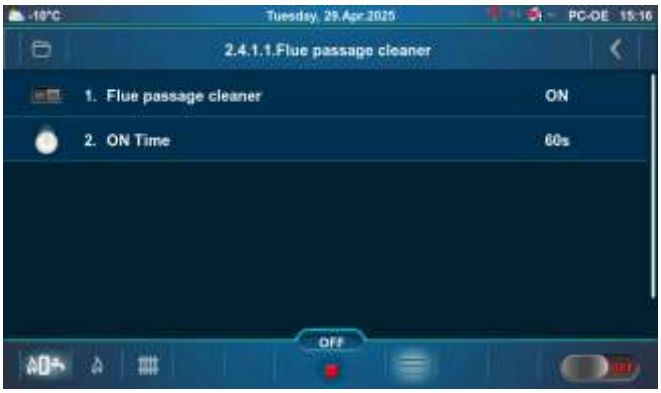
2.4. BOILER COMPONENTS

This submenu allows only an overview.

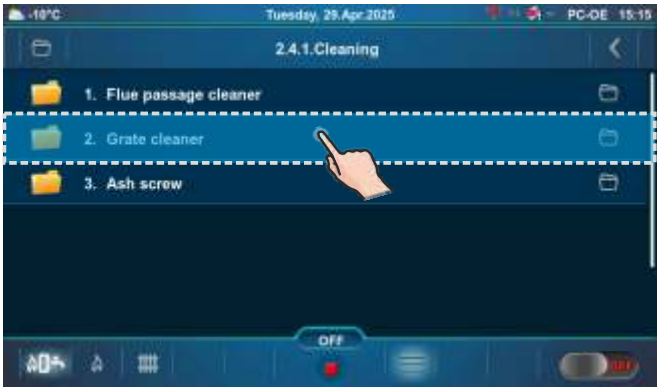
2.4.1. CLEANING

2.4.1.1. FLUE PASSAGE CLEANER





2.4.1.2. GRATE CLEANER



2.4.1.3. ASH SCREW

NOTE: Ash removal always works in the C0 operating stage and additionally according to the set schedule.

2.4.1.3.2. ON TIME

Interval of ash screw operation.
Factory: 240 s
Possible selection: 5 - 1800 s
The ash screw always works when the boiler starts working and after the stop interval (OFF Time).

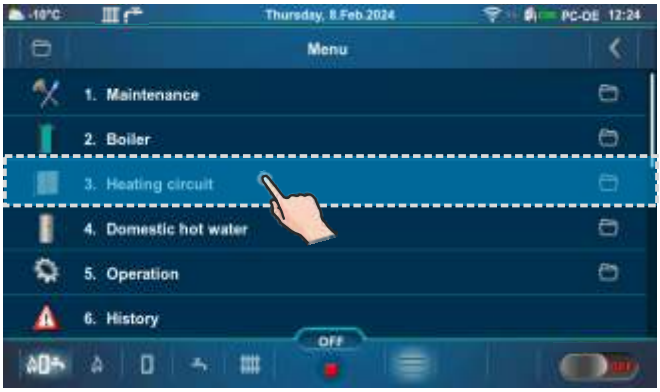
2.4.1.3.3. OFF TIME

Interval of rest, between two intervals of the ash screw operation.
Factory: 120 min
Possible selection: 60 - 180 min

NOTE: All displayed menus are based on configuration 18.

3.0. HEATING CIRCUIT

In certain configurations, the menus will be different (with or without the Heating circuit/Domestic hot water menu).



3.2. PUMP OFF

Configuration: 1, 2, 3, 6, 7, 14, 15, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42 - if the measured outdoor temperature is higher than the set outdoor temperature + set outdoor temperature difference for the duration of the set time the heating circuit pump is turned off.
Configuration: 4, 5 - after the conditions are met, the heating circuit loses the request for heating.

	Factory:	*Min/Max*	*Unit*
1. Outdoor temperature	22	0 / 40	°C
2. Outdoor temperature difference	2	0 / 5	°C
3. Time	30	0 / 10080	min

Outdoor temperature - set outdoor temperature
Outdoor temperature difference - set outdoor temperature difference
Time - set time

3.3. TEMPERATURES

Below are the configurations, which have heating circuits.

Values for configuration: 1, 2, 21, 22, 25.

	Factory:	*Possible selection:*
(K1) Circ 1	ON	ON / OFF

		Factory:	*Min/Max*	*Unit*
*	*Day room temperature*	20.0	5.0 / 30.0	°C
*	*Night room temperature*	20.0	5.0 / 30.0	°C
**	*Day constant temperature*	60	20 / 90	°C
**	*Night constant temperature*	40	20 / 90	°C
***	*Measurement correction - Corrector*	0.0	-5.0 / 5.0	°C
	Heating curve	1.0	0.1 / 4.0	

	Factory:	*Possible selection:*
Day/Night temperature	*Day temperature*	Day temperature/ Night temperature/ Table 1/Table 2

(K1) Circ 1 - Heating circuit 1 (with mixing valve 1)
Day room temperature - Setting the day room temperature
Night room temperature - Setting the night room temperature
Day constant temperature / Night constant temperature - setting the flow temperature in the heating circuit
Measurement correction - Corrector - correction of the measured temperature (in the room) with the CSK corrector (possible reason for the correction - the room corrector CSK is placed in a part of the room that is for some reason warmer or colder than the rest of the room)
Heating curve - Setting the heating curve

*Not displayed when a constant temperature (Heating type) is selected and the corrector is OFF.
** Only displayed if a constant temperature (Heating type) is selected.
*** Only displayed if the corrector (CSK (2 wires or 3 wires)) is ON.

Values for configuration: 3.

	Factory:	Possible selection:
1.(K1) Circ 1	ON	ON / OFF
2.(K2) Circ 2	ON	ON / OFF

	(K1) Circ 1	Factory:	Min/Max	Unit
*	Day room temperature	20.0	5.0 / 30.0	°C
*	Night room temperature	20.0	5.0 / 30.0	°C
**	Day constant temperature	60	20 / 90	°C
**	Night constant temperature	40	20 / 90	°C
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C
	Heating curve	1.0	0.1 / 4.0	

	Factory:	Possible selection:
Day/Night temperature	Day temperature	Day temperature/ Night temperature/ Table 1/Table 2

	(K2) Circ 2	Factory:	Min/Max	Unit
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C

(K1) Circ 1 - Heating circuit 1 (with mixing valve 1)
(K2) Circ 2 - Heating circuit 2 (direct circuit)
Day room temperature - Setting the day room temperature
Night room temperature - Setting the night room temperature
Day constant temperature / **Night constant temperature** - setting the flow temperature in the heating circuit
Measurement correction - Corrector - correction of the measured temperature (in the room) with the CSK corrector (possible reason for the correction - the room corrector CSK is placed in a part of the room that is for some reason warmer or colder than the rest of the room)
Heating curve - Setting the heating curve

*Not displayed when a constant temperature (Heating type) is selected and the corrector is OFF.
** Only displayed if a constant temperature (Heating type) is selected.
*** Only displayed if the corrector (CSK (2 wires or 3 wires)) is ON.

Values for configuration: 4, 5, 6, 26, 27, 32.

	Factory:	Possible selection:
(K1) Circ 1	ON	ON / OFF

		Factory:	Min/Max	Unit
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C

(K1) Circ 1 - Heating circuit 1 (direct circuit)
Measurement correction - Corrector - correction of the measured temperature (in the room) with the CSK corrector (possible reason for the correction - the room corrector CSK is placed in a part of the room that is for some reason warmer or colder than the rest of the room)

*** Only displayed if the corrector (CSK (2 wires or 3 wires)) is ON.

Values for configuration: 7.

	Factory:	Possible selection:
1. (K1) Circ 1	ON	ON / OFF
2. (K2) Circ 2	ON	ON / OFF

	(K1) Circ 1, (K2) Circ 2	Factory:	Min/Max	Unit
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C

(K1) Circ 1 - Heating circuit 1 (direct circuit)
(K2) Circ 2 - Heating circuit 2 (direct circuit)
Measurement correction - Corrector - correction of the measured temperature (in the room) with the CSK corrector (possible reason for the correction - the room corrector CSK is placed in a part of the room that is for some reason warmer or colder than the rest of the room)

*** Only displayed if the corrector (CSK (2 wires or 3 wires)) is ON.

Values for configuration: 14, 18, 33, 34, 35.

	Factory:	Possible selection:
(K1) Circ 1	ON	ON / OFF

		Factory:	Min/Max	Unit
*	*Day room temperature*	20.0	5.0 / 30.0	°C
*	*Night room temperature*	20.0	5.0 / 30.0	°C
**	*Day constant temperature*	60	20 / 90	°C
**	*Night constant temperature*	40	20 / 90	°C
***	*Measurement correction - Corrector*	0.0	-5.0 / 5.0	°C
	Heating curve	1.0	0.1 / 4.0	
	Minimal buffer tank temperature	20	5 / 75	°C

	Factory:	Possible selection:
Day/Night temperature	*Day temperature*	Day temperature/ Night temperature/ Table 1/Table 2

(K1) Circ 1 - Heating circuit 1 (with mixing valve 1)

Day room temperature - Setting the day room temperature

Night room temperature - Setting the night room temperature

Day constant temperature / Night constant temperature - setting the flow temperature in the heating circuit

Measurement correction - Corrector - correction of the measured temperature (in the room) with the CSK corrector (possible reason for the correction - the room corrector CSK is placed in a part of the room that is for some reason warmer or colder than the rest of the room)

Heating curve - Setting the heating curve

Minimal buffer tank temperature - the possibility of setting the desired minimum temperature of the buffer tank for each heating circuit (disable the water temperature cooling in the buffer tank below the set temperature for each heating circuit). When the temperature of the upper sensor of the buffer tank is lower than the set minimum temperature of the buffer tank for an individual heating circuit, the heating pump of the corresponding heating circuit is switching off.

*Not displayed when a constant temperature (Heating type) is selected and the corrector is OFF.
** Only displayed if a constant temperature (Heating type) is selected.
*** Only displayed if the corrector (CSK (2 wires or 3 wires)) is ON.

Values for configuration: 15,19, 38, 39, 40.

	Factory:	Possible selection:
(K1) Circ 1	ON	ON / OFF

		Factory:	Min/Max	Unit
	Minimal buffer tank temperature	20	5 / 75	°C
***	*Measurement correction - Corrector*	0.0	-5.0 / 5.0	°C

(K1) Circ 1 - Heating circuit 1 (direct circuit)

Minimal buffer tank temperature - the possibility of setting the desired minimum temperature of the buffer tank for each heating circuit (disable the water temperature cooling in the buffer tank below the set temperature for each heating circuit). When the temperature of the upper sensor of the buffer tank is lower than the set minimum temperature of the buffer tank for an individual heating circuit, the heating pump of the corresponding heating circuit is switching off.

Measurement correction - Corrector - correction of the measured temperature (in the room) with the CSK corrector (possible reason for the correction - the room corrector CSK is placed in a part of the room that is for some reason warmer or colder than the rest of the room)

*** Only displayed if the corrector (CSK (2 wires or 3 wires)) is ON.

Values for configuration: 23, 24.

	Factory:	Possible selection:
1.(K1) Circ 1	ON	ON / OFF
2.(K2) Circ 2	ON	ON / OFF

	(K1) Circ 1	Factory:	Min/Max	Unit
*	Day room temperature	20.0	5.0 / 30.0	°C
*	Night room temperature	20.0	5.0 / 30.0	°C
**	Day constant temperature	60	20 / 90	°C
**	Night constant temperature	40	20 / 90	°C
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C
	Heating curve	1.0	0.1 / 4.0	

	Factory:	Possible selection:
Day/Night temperature	Day temperature	Day temperature/ Night temperature/ Table 1/Table 2

	(K2) Circ 2	Factory:	Min/Max	Unit
	Minimal buffer tank temperature	20	5 / 75	°C
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C

(K1) Circ 1 - Heating circuit 1 (with mixing valve 1)
(K2) Circ 2 - Heating circuit 2 (direct circuit)
Day room temperature - Setting the day room temperature
Night room temperature - Setting the night room temperature
Day constant temperature / Night constant temperature - setting the flow temperature in the heating circuit
Measurement correction - Corrector - correction of the measured temperature (in the room) with the CSK corrector (possible reason for the correction - the room corrector CSK is placed in a part of the room that is for some reason warmer or colder than the rest of the room)
Heating curve - Setting the heating curve
Minimal buffer tank temperature - the possibility of setting the desired minimum temperature of the buffer tank for each heating circuit (disable the water temperature cooling in the buffer tank below the set temperature for each heating circuit). When the temperature of the upper sensor of the buffer tank is lower than the set minimum temperature of the buffer tank for an individual heating circuit, the heating pump of the corresponding heating circuit is switching off.

*Not displayed when a constant temperature (Heating type) is selected and the corrector is OFF.
** Only displayed if a constant temperature (Heating type) is selected.
*** Only displayed if the corrector (CSK (2 wires or 3 wires)) is ON.

Values for configuration: 30, 31.

	Factory:	Possible selection:
1. (K1) Circ 1	ON	ON / OFF
2. (K2) Circ 2	ON	ON / OFF

	(K1) Circ 1	Factory:	Min/Max	Unit
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C

	(K2) Circ 2	Factory:	Min/Max	Unit
	Minimal buffer tank temperature	20	5 / 75	°C
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C

(K1) Circ 1 - Heating circuit 1 (direct circuit)
(K2) Circ 2 - Heating circuit 2 (direct circuit)
Measurement correction - Corrector - correction of the measured temperature (in the room) with the CSK corrector (possible reason for the correction - the room corrector CSK is placed in a part of the room that is for some reason warmer or colder than the rest of the room)
Minimal buffer tank temperature - the possibility of setting the desired minimum temperature of the buffer tank for each heating circuit (disable the water temperature cooling in the buffer tank below the set temperature for each heating circuit). When the temperature of the upper sensor of the buffer tank is lower than the set minimum temperature of the buffer tank for an individual heating circuit, the heating pump of the corresponding heating circuit is switching off.

*** Only displayed if the corrector (CSK (2 wires or 3 wires)) is ON.

Values for configuration: 28, 29.

	Factory:	Possible selection:
1.(K1) Circ 1	ON	ON / OFF
2.(K2) Circ 2	ON	ON / OFF

	(K1) Circ 1	Factory:	Min/Max	Unit
*	Day room temperature	20.0	5.0 / 30.0	°C
*	Night room temperature	20.0	5.0 / 30.0	°C
**	Day constant temperature	60	20 / 90	°C
**	Night constant temperature	40	20 / 90	°C
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C
	Heating curve	1.0	0.1 / 4.0	
	Minimal buffer tank temperature	20	5 / 75	°C

	Factory:	Possible selection:
Day/Night temperature	Day temperature	Day temperature/ Night temperature/ Table 1/Table 2

	(K2) Circ 2	Factory:	Min/Max	Unit
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C

(K1) Circ 1 - Heating circuit 1 (with mixing valve 1)
(K2) Circ 2 - Heating circuit 2 (direct circuit)

Day room temperature - Setting the day room temperature

Night room temperature - Setting the night room temperature

Day constant temperature / **Night constant temperature** - setting the flow temperature in the heating circuit

Measurement correction - Corrector - correction of the measured temperature (in the room) with the CSK corrector (possible reason for the correction - the room corrector CSK is placed in a part of the room that is for some reason warmer or colder than the rest of the room)

Heating curve - Setting the heating curve

Minimal buffer tank temperature - the possibility of setting the desired minimum temperature of the buffer tank for each heating circuit (disable the water temperature cooling in the buffer tank below the set temperature for each heating circuit). When the temperature of the upper sensor of the buffer tank is lower than the set minimum temperature of the buffer tank for an individual heating circuit, the heating pump of the corresponding heating circuit is switching off.

*Not displayed when a constant temperature (Heating type) is selected and the corrector is OFF.
** Only displayed if a constant temperature (Heating type) is selected.
*** Only displayed if the corrector (CSK (2 wires or 3 wires)) is ON.

Values for configuration: 41, 42.

	Factory:	Possible selection:
1. (K1) Circ 1	ON	ON / OFF
2. (K2) Circ 2	ON	ON / OFF

	(K1) Circ 1	Factory:	Min/Max	Unit
	Minimal buffer tank temperature	20	5 / 75	°C
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C

	(K2) Circ 2	Factory:	Min/Max	Unit
	Minimal buffer tank temperature	20	5 / 75	°C
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C

(K1) Circ 1 - Heating circuit 1 (direct circuit)
(K2) Circ 2 - Heating circuit 2 (direct circuit)

Measurement correction - Corrector - correction of the measured temperature (in the room) with the CSK corrector (possible reason for the correction - the room corrector CSK is placed in a part of the room that is for some reason warmer or colder than the rest of the room)

Minimal buffer tank temperature - the possibility of setting the desired minimum temperature of the buffer tank for each heating circuit (disable the water temperature cooling in the buffer tank below the set temperature for each heating circuit). When the temperature of the upper sensor of the buffer tank is lower than the set minimum temperature of the buffer tank for an individual heating circuit, the heating pump of the corresponding heating circuit is switching off.

*** Only displayed if the corrector (CSK (2 wires or 3 wires)) is ON.

Values for configuration: 36, 37.

	Factory:	Possible selection:
1.(K1) Circ 1	ON	ON / OFF
2.(K2) Circ 2	ON	ON / OFF

	(K1) Circ 1	Factory:	Min/Max	Unit
*	Day room temperature	20.0	5.0 / 30.0	°C
*	Night room temperature	20.0	5.0 / 30.0	°C
**	Day constant temperature	60	20 / 90	°C
**	Night constant temperature	40	20 / 90	°C
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C
	Heating curve	1.0	0.1 / 4.0	
	Minimal buffer tank temperature	20	5 / 75	°C

	Factory:	Possible selection:
Day/Night temperature	Day temperature	Day temperature/ Night temperature/ Table 1/Table 2

	(K2) Circ 2	Factory:	Min/Max	Unit
	Minimal buffer tank temperature	20	5 / 75	°C
***	Measurement correction - Corrector	0.0	-5.0 / 5.0	°C

(K1) Circ 1 - Heating circuit 1 (with mixing valve 1)
(K2) Circ 2 - Heating circuit 2 (direct circuit)

Day room temperature - Setting the day room temperature

Night room temperature - Setting the night room temperature

Day constant temperature / Night constant temperature - setting the flow temperature in the heating circuit

Measurement correction - Corrector - correction of the measured temperature (in the room) with the CSK corrector (possible reason for the correction - the room corrector CSK is placed in a part of the room that is for some reason warmer or colder than the rest of the room)

Heating curve - Setting the heating curve

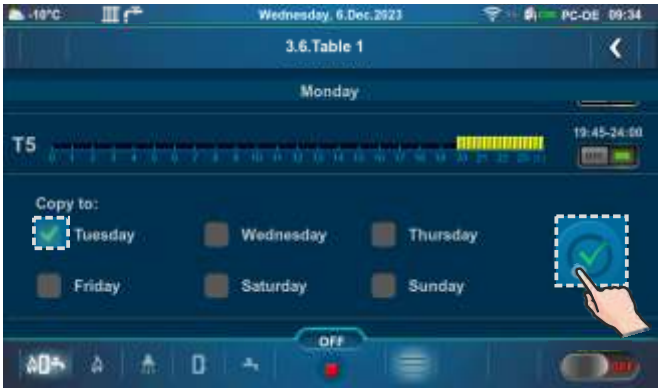
Minimal buffer tank temperature - the possibility of setting the desired minimum temperature of the buffer tank for each heating circuit (disable the water temperature cooling in the buffer tank below the set temperature for each heating circuit). When the temperature of the upper sensor of the buffer tank is lower than the set minimum temperature of the buffer tank for an individual heating circuit, the heating pump of the corresponding heating circuit is switching off.

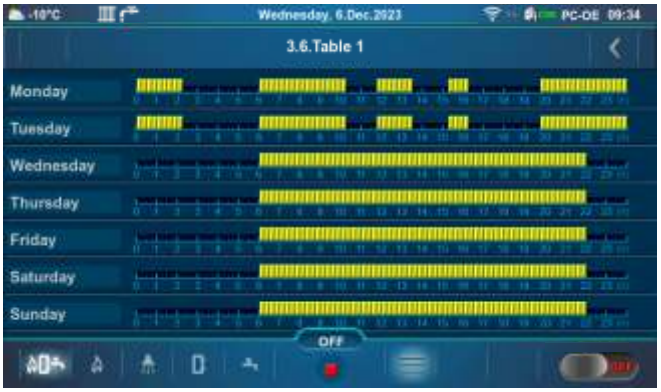
*Not displayed when a constant temperature (Heating type) is selected and the corrector is OFF.
** Only displayed if a constant temperature (Heating type) is selected.
*** Only displayed if the corrector (CSK (2 wires or 3 wires)) is ON.

3.5. DAY / NIGHT TEMPERATURE

Factory: Day temperature
Possible selection:
Day temperature - the heating circuit operates according to the set Day temperature
Night temperature - the heating circuit operates according to the set Night temperature
Table 1/Table 2 - automatically switches between day and night temperatures which are set in the table

3.6.-3.7. TABLE 1, TABLE 2





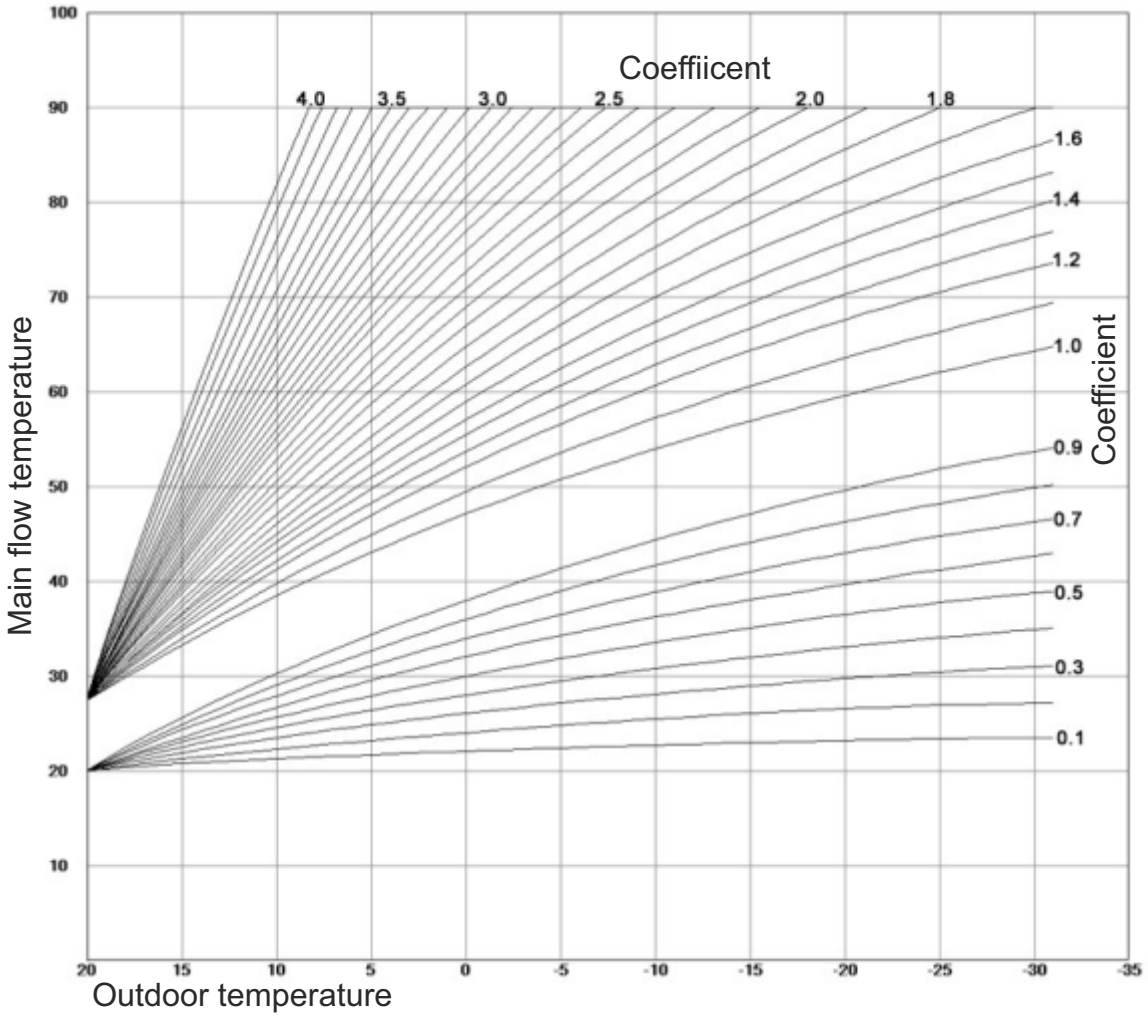
(yellow) **Day room temperature set** **Night room temperature set**

Setting the schedule tables with change of heating circuit mode between day and night temperature. For each day it is possible to set 5 mode changes (T1-T5). In the table Day room temperatures are marked in yellow and night room temperatures in black. It is possible to define a schedule for one day and copy the same schedule for all other days. Under "COPY TO:", mark the day or days for which you want to have the same schedule and confirm by pressing the "CONFIRM" button.

According to the data in the table, on Monday from 00:00 to 2:15 a.m., 6:00 a.m. to 10:15 a.m., 11:45 a.m. to 1:30 p.m., 3:15 p.m. to 4:15 p.m. and 7:45 p.m. to 11:59 p.m. it is set Day room temperature mode. Night room temperature mode schedule is set from 2:16 a.m to 5:59 a.m., 10:16 a.m. to 11:44 a.m., 1:31 p.m to 3:14 p.m., 4:16 p.m. to 7:44 p.m. The schedule for Monday is copied to Tuesday.
Other days have set Night room temperature mode from 00:00 to 5:59 a.m., 10:01 p.m. to 11:59 p.m. and Day room temperature mode from 6:01 a.m. to 10:00 p.m.

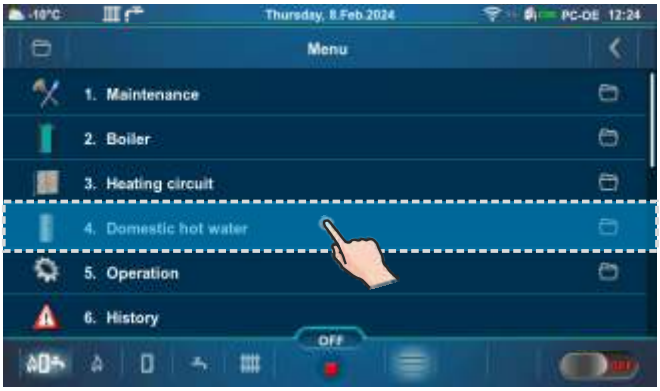
3.8. HEATING CURVE

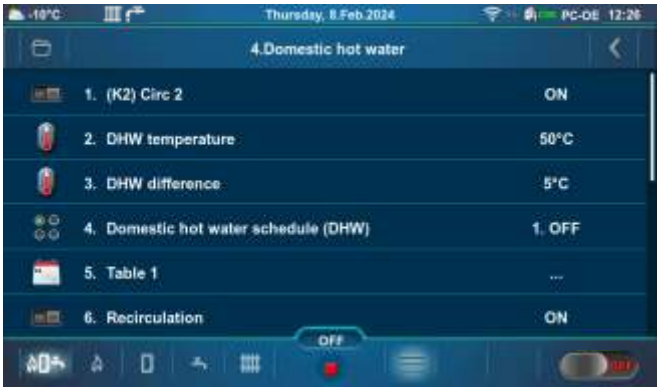
Setting of the heating curve. Heating curve is one of the parameters for main flow temperature calculation.



4.0. DOMESTIC HOT WATER (DHW)

The Domestic hot water menu is available only if the selected configuration has a domestic hot water tank (DHW).





Below are types of installation and configuration, which have a domestic hot water tank (DHW).

Selection and possible values for configuration: 2, 5, 6, 14, 15, 18, 19.

	Factory:	Possible selection:
(K2) Circ 2	ON	ON / OFF
Domestic hot water schedule (DHW)	OFF	OFF/Table 1/Table 2
* *Recirculation*	ON	ON / OFF
* *Recirculation schedule*	OFF	ON / OFF

	Factory:	Min/Max	Unit
DHW temperature	50	40 / 85	°C
DHW difference	5	4 / 40	°C

(K2) Circ 2 - Heating circuit 2 (DHW)
Domestic hot water schedule (DHW) - Domestic hot water schedule
Recirculation - Hot water circulation option from the domestic hot water (DHW) tank to the domestic hot water (DHW) outlet (DHW consumption)
Recirculation schedule - Setting the recirculation schedule
DHW temperature - Setting the domestic hot water temperature
DHW difference - Possibility of setting the temperature difference of DHW

*Displayed only if the authorized service technician (in the Installation menu) has switched on the option "Recirculation installed". When the option is switched on, on the "Main screen - Schematic view (PC-OE)" will be displayed the recirculation symbol.

Selection and possible values for configuration: 8, 9, 13, 17.

	Factory:	Possible selection:
(K1) Circ 1	ON	ON / OFF
Domestic hot water schedule (DHW)	OFF	OFF/Table 1/Table 2
* *Recirculation*	ON	ON / OFF
* *Recirculation schedule*	OFF	ON / OFF

	Factory:	Min/Max	Unit
DHW temperature	50	40 / 85	°C
DHW difference	5	4 / 40	°C

(K1) Circ 1 - Heating circuit 1 (DHW)
Domestic hot water schedule (DHW) - Domestic hot water schedule
Recirculation - Hot water circulation option from the domestic hot water (DHW) tank to the domestic hot water (DHW) outlet (DHW consumption)
Recirculation schedule - Setting the recirculation schedule
DHW temperature - Setting the domestic hot water temperature
DHW difference - Possibility of setting the temperature difference of DHW

*Displayed only if the authorized service technician (in the Installation menu) has switched on the option "Recirculation installed". When the option is switched on, on the "Main screen - Schematic view (PC-OE)" will be displayed the recirculation symbol.

Selection and possible values for configuration: 10.

	Factory:	Possible selection:
(K1) Circ 1	ON	ON / OFF
(K2) Circ 2	ON	ON / OFF

(K1) Circ 1, K(2) Circ 2	Factory:	Min/Max	Unit
1. DHW temperature	50	40 / 85	°C
2. DHW difference	5	4 / 40	°C

(K1) Circ 1, (K2) Circ 2	Factory:	Possible selection:
Domestic hot water schedule (DHW)	OFF	OFF/Table 1/Table 2
* *Recirculation*	ON	ON/OFF
* *Recirculation schedule*	OFF	ON/OFF

(K1) Circ 1 - Heating circuit 1 (DHW)
(K2) Circ 2 - Heating circuit 2 (DHW)
DHW temperature - Setting the domestic hot water temperature
DHW difference - Possibility of setting the temperature difference of DHW
Domestic hot water schedule (DHW) - Domestic hot water schedule
Recirculation - Hot water circulation option from the domestic hot water (DHW) tank to the domestic hot water (DHW) outlet (DHW consumption)
Recirculation schedule - Setting the recirculation schedule

*Displayed only if the authorized service technician (in the Installation menu) has switched on the option "Recirculation installed". When the option is switched on, on the "Main screen - Schematic view (PC-OE)" will be displayed the recirculation symbol.

**Selection and possible values for configuration: 12, 22, 24, 27, 29, 31, 34, 37, 39, 42.

	Factory:	Possible selection:
Recirculation	ON	ON / OFF
Recirculation schedule	OFF	ON / OFF

	Factory:	Min/Max	Unit
1. Recirculation Time On	5	0 / 1440	min
2. Recirculation Time Off	5	0 / 1440	min

Recirculation - Hot water circulation option from the domestic hot water (DHW) tank to the domestic hot water (DHW) outlet (DHW consumption)
Recirculation schedule - Setting the recirculation schedule
Recirculation Time On - Operating time of the recirculation pump
Recirculation Time Off - Time when recirculation pump is not operating

** For these configurations, the "Domestic hot water" menu will only be displayed if the authorized service technician (in the Installation menu) has switched on the option "Recirculation installed".

Selection and possible values for configuration: 16.

	Factory:	Possible selection:
(K1) Circ 1	ON	ON / OFF
(K2) Circ 2	ON	ON / OFF

(K1) Circ 1	Factory:	Min/Max	Unit
1. DHW temperature	50	40 / 80	°C
2. DHW difference	5	4 / 40	°C

(K2) Circ 2	Factory:	Min/Max	Unit
1. DHW temperature	50	40 / 85	°C
2. DHW difference	5	4 / 40	°C

	(K1) Circ 1, (K2) Circ 2	Factory:	Possible selection:
	Domestic hot water schedule (DHW)	OFF	OFF/Table 1/Table 2
*	*Recirculation*	ON	ON/OFF
*	*Recirculation schedule*	OFF	ON/OFF

(K1) Circ 1 - Heating circuit 1 (DHW)
(K2) Circ 2 - Heating circuit 2 (DHW)
DHW temperature - Setting the domestic hot water temperature
DHW difference- Possibility of setting the temperature difference of DHW
Domestic hot water schedule (DHW) - Domestic hot water schedule
Recirculation - Hot water circulation option from the domestic hot water (DHW) tank to the domestic hot water (DHW) outlet (DHW consumption)
Recirculation schedule - Setting the recirculation schedule

*Displayed only if the authorized service technician (in the Installation menu) has switched on the option "Recirculation installed". When the option is switched on, on the "Main screen - Schematic view (PC-OE)" will be displayed the recirculation symbol.

Selection and possible values for configuration: 25, 32, 35, 40.

	Factory:	Possible selection:
(K2) Circ 2	ON	ON / OFF
Domestic hot water schedule (DHW)	OFF	OFF/Table 1/Table 2
* *Recirculation*	ON	ON / OFF
* *Recirculation schedule*	OFF	ON / OFF

	Factory:	Min/Max	Unit
DHW temperature	50	40 / 80	°C
DHW difference	5	4 / 40	°C

(K2) Circ 2 - Heating circuit 2 (DHW)
Domestic hot water schedule (DHW) - Domestic hot water schedule
Recirculation - Hot water circulation option from the domestic hot water (DHW) tank to the domestic hot water (DHW) outlet (DHW consumption)
Recirculation schedule - Setting the recirculation schedule
DHW temperature - Setting the domestic hot water temperature
DHW difference - Possibility of setting the temperature difference of DHW

*Displayed only if the authorized service technician (in the Installation menu) has switched on the option "Recirculation installed". When the option is switched on, on the "Main screen - Schematic view (PC-OE)" will be displayed the recirculation symbol.

Selection and possible values for configuration: 43.

	Factory:	Possible selection:
(K1) Circ 1	ON	ON / OFF
Domestic hot water schedule (DHW)	OFF	OFF/Table 1/Table 2
* *Recirculation*	ON	ON / OFF
* *Recirculation schedule*	OFF	ON / OFF

	Factory:	Min/Max	Unit
DHW temperature	50	40 / 80	°C
DHW difference	5	4 / 40	°C

(K1) Circ 1 - Heating circuit 1 (DHW)
Domestic hot water schedule (DHW) - Domestic hot water schedule
Recirculation - Hot water circulation option from the domestic hot water (DHW) tank to the domestic hot water (DHW) outlet (DHW consumption)
Recirculation schedule - Setting the recirculation schedule
DHW temperature - Setting the domestic hot water temperature
DHW difference - Possibility of setting the temperature difference of DHW

*Displayed only if the authorized service technician (in the Installation menu) has switched on the option "Recirculation installed". When the option is switched on, on the "Main screen - Schematic view (PC-OE)" will be displayed the recirculation symbol.

Selection and possible values for configuration: 20.

	Factory:	Possible selection:
(K1) Circ 1	ON	ON / OFF
(K2) Circ 2	ON	ON / OFF

(K1) Circ 1	Factory:	Min/Max	Unit
1. DHW temperature	50	40 / 80	°C
2. DHW difference	5	4 / 40	°C

	(K1) Circ 1	Factory:	Possible selection:
	Domestic hot water schedule (DHW)	OFF	OFF/Table 1/Table 2
*	*Recirculation*	ON	ON / OFF
*	*Recirculation schedule*	OFF	ON / OFF

(K2) Circ 2	Factory:	Min/Max	Unit
1. DHW temperature	50	40 / 85	°C
2. DHW difference	5	4 / 40	°C

(K2) Circ 2	Factory:	Possible selection:
Domestic hot water schedule (DHW)	OFF	OFF/Table 1/Table 2

(K1) Circ 1 - Heating circuit 1 (DHW)
(K2) Circ 2 - Heating circuit 2 (DHW)

DHW temperature - Setting the domestic hot water temperature

DHW difference - Possibility of setting the temperature difference of DHW

Domestic hot water schedule (DHW) - Domestic hot water schedule

Recirculation - Hot water circulation option from the domestic hot water (DHW) tank to the domestic hot water (DHW) outlet (DHW consumption)

Recirculation schedule - Setting the recirculation schedule

*Displayed only if the authorized service technician (in the Installation menu) has switched on the option "Recirculation installed". When the option is switched on, on the "Main screen - Schematic view (PC-OE)" will be displayed the recirculation symbol.

Selection and possible values for configuration: 44.

	Factory:	Possible selection:
(K1) Circ 1	ON	ON / OFF
(K2) Circ 2	ON	ON / OFF

(K1) Circ 1, (K2) Circ 2	Factory:	Min/Max	Unit
1. DHW temperature	50	40 / 80	°C
2. DHW difference	5	4 / 40	°C

	(K1) Circ 1, (K2) Circ 2	Factory:	Possible selection:
	Domestic hot water schedule (DHW)	OFF	OFF/Table 1/Table 2
*	*Recirculation*	ON	ON / OFF
*	*Recirculation schedule*	OFF	ON / OFF

(K1) Circ 1 - Heating circuit 1 (DHW)
(K2) Circ 2 - Heating circuit 2 (DHW)

DHW temperature - Setting the domestic hot water temperature

DHW difference - Possibility of setting the temperature difference of DHW

Domestic hot water schedule (DHW) - Domestic hot water schedule

Recirculation - Hot water circulation option from the domestic hot water (DHW) tank to the domestic hot water (DHW) outlet (DHW consumption)

Recirculation schedule - Setting the recirculation schedule

*Displayed only if the authorized service technician (in the Installation menu) has switched on the option "Recirculation installed". When the option is switched on, on the "Main screen - Schematic view (PC-OE)" will be displayed the recirculation symbol.

5.0. OPERATION

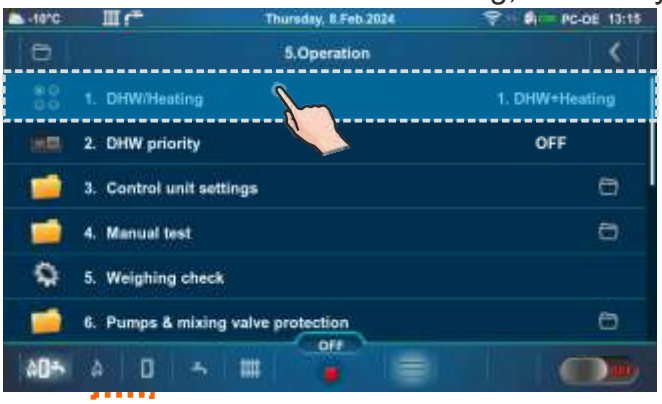
NOTE: Some submenus of the Operation menu are displayed or hidden depending on the items enabled in the menu Installation.

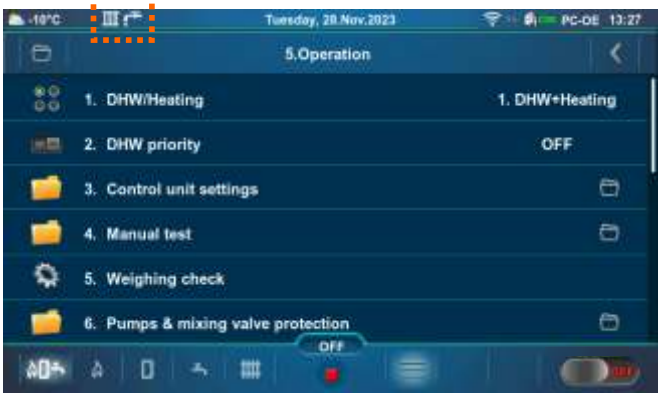
5.1. DHW / HEATING

Submenu 5.1. DHW / Heating is only displayed if the configuration with Domestic hot water (DHW) is selected.

Factory: DHW+Heating

Possible selection: DHW+Heating, DHW only, Heating only, Auto





DHW+Heating - the boiler operates as needed for heating or for domestic hot water (DHW).

DHW only - boiler operates only when there is demand for domestic hot water (DHW).

Heating only - boiler operates only when there is demand for heating.

Auto - boiler switches automatically between **DHW+Heating** and **DHW only** operating mode.

Example: factory setting of
Outdoor temperature,
Outdoor temperature difference,
Time (Heating OFF),
Time (Heating ON)

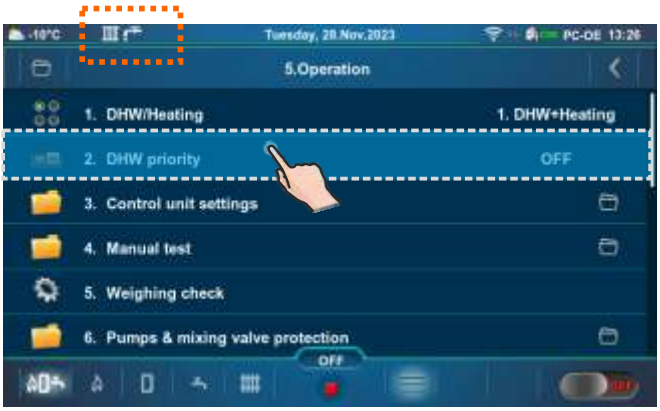
If the outdoor temperature is >/= 20 °C for more than 30 minutes.

If the outdoor temperature is <(20-3) °C for more than 30 minutes.

5.2. DHW PRIORITY

If the option “DHW priority” is active:
- every time the pump of the domestic hot water tank (DHW) is in operation, the other pumps of the heating circuit are at rest (except the pump of the boiler circuit).

In configurations with diverter valve and domestic hot water (DHW) tank (5, 13, 14, 15, 16), DHW priority is factory activated.
In configurations with pumps and domestic hot water (DHW) tank (2, 6, 9, 10, 17, 18, 19, 20, 25, 32, 35, 40, 43, 44), DHW priority is factory deactivated.



Possible choice: OFF, ON

Current: OFF

Current: ON

If the option is active, the domestic hot water (DHW) icon changes color from white to red and changes position in the top bar of the screen.

5.3. CONTROL UNIT SETTINGS

This submenu allows only an overview.

5.3.1. BOILER CONTROL

Boiler control (this information appears only if the authorized technician has activated "And another heating controller")
And another heating controller - this option can be activated by an authorized technician in certain configurations when part of the heating circuits or the preparation of the DHW is managed by another regulation independent of the boiler regulation. When this option is activated, the authorized technician cannot adjust the boiler to maintain the temperature required by the installation (see "Boiler temperature maintenance").

5.3.2. BOILER TEMPERATURE MAINTENANCE

Boiler temperature maintenance (the selected one by the authorized technician is marked)

Installation - maintaining the temperature according to installation requirements. The boiler does not operate if there is NO heating request from installation component (heating, DHW). If there is a demand from the installation, the boiler starts when the temperature in the boiler drops below (Maximum boiler temperature - Boiler difference) and operates up to the set (calculated) maximum temperature of the boiler or until all installation requirements disappear and it shuts down. This option can be selected by an authorized technician if the option "And another heating controller" (Boiler control) is not selected and there is at least one element of the heating installation or DHW.

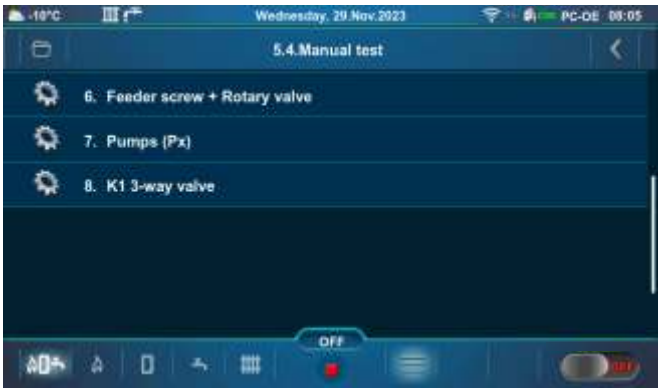
Boiler - the boiler maintains its temperature regardless of installation requirements, the boiler starts when its temperature drops below (Maximum boiler temperature - Boiler difference) and turns off when it reaches the maximum boiler temperature.

Note:
By turning on the "Chimney sweeper" option, the controller is automatically set to "Boiler temperature maintenance: Boiler" and this menu disappears. By turning off the "Chimney sweeper" option, everything returns to its previous state.

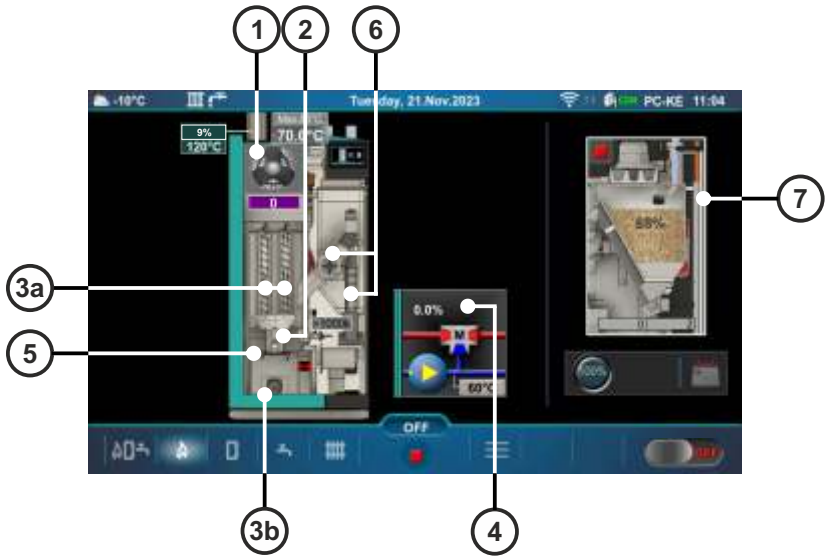
5.4. MANUAL TEST

"Manual test" is option that allows turning on an individual relay and thus testing the operation of the equipment connected to the individual relay.

NOTE: Submenus in the "Manual test" depend on the selected configuration.



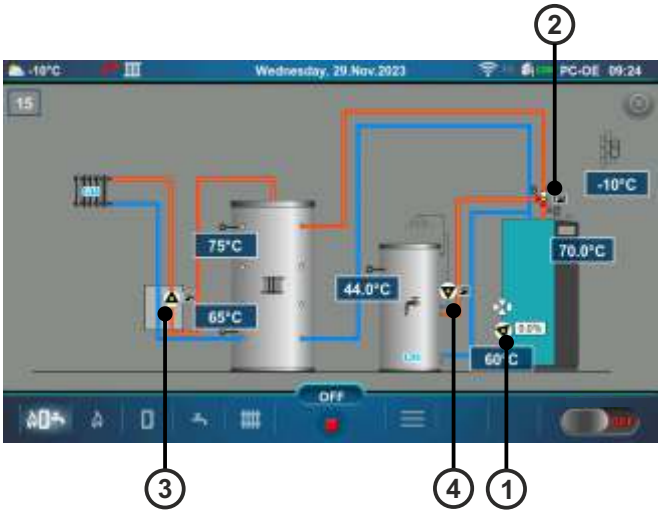
MANUAL TEST IS POSSIBLE ONLY WHEN THE BOILER IS SWITCHED OFF.

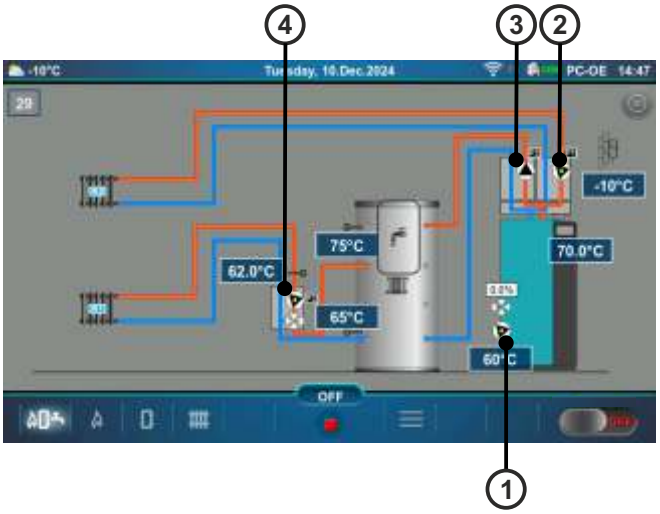


Parts of the boiler that can be tested manually:

1 - Fan
2 - Electric heater
3a - Flue passage cleaner
3b - Ash screw
4 - P(PWM) + 3-way mixing valve
5 - Grate
6 - Feeder screw + Rotary valve
7 - Vacuum turbine

Below are shown two "Main screen - Schematic view (PC-OE)" with pumps and valves, which can be manually tested.





Left "Main Screen - Schematic View (PC-OE)":
1 - P(PWM) pump - boiler circuit + 3-way mixing valve
2 - P1 - Diverter valve
3 - P2 - Heating circuit 1 (K1)
*4 - P3 - Recirculation DHW (Heating circuit 2 (K2))

Right "Main Screen - Schematic View (PC-OE)":
1 - P(PWM) pump - boiler circuit + 3-way mixing valve
2 - P1 - Heating circuit 2 (K2)
3 - P2 - Buffer tank with integrated DHW tank
4 - P3 - Heating circuit 1 (K1)

*Displayed only if the authorized service technician (in the Installation menu) has switched on the option "Recirculation installed".

Note: The number of pumps depends on configuration.

5.4.1. FAN

This option allows you to check if the fan is operating.
It is necessary to press the "ON" button next to the corresponding symbols and check if the fan operates according to the selected option (800/1200/1800 rpm or approximately 2800 rpm). Every time you press the "ON" button, it lights up green. After pressing the "OFF" button the fan will stop.
Possible selection:
Fan speed: 800 rpm - fan speed must be 800 rpm
Fan speed: 1200 rpm - fan speed must be 1200 rpm
Fan speed: 1800 rpm - fan speed must be 1800 rpm
Fan speed: MAX - the fan speed must be on maximum (around 2800 rpm)

5.4.2. ELECTRIC HEATER

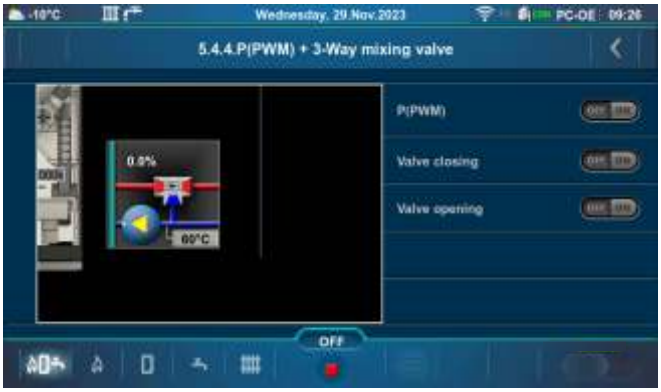
This option allows you to check if the electric heater is operating.
It is necessary to press the "ON" button next to the "Electric heater" and check if the electric heater is operating. Every time you press the "ON" button, it lights up green. The screen will display an animation of the electric heater when the option is active. After pressing the "OFF" button the electric heater will stop operating.

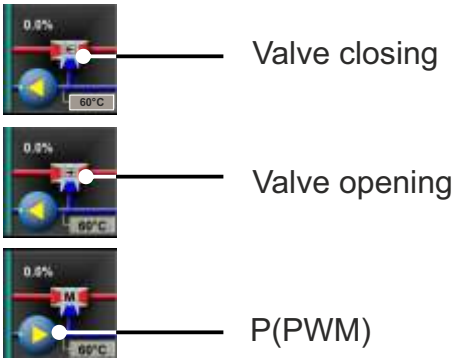
5.4.3. CLEANING

This option allows you to check the operation of the flue passage cleaner and ash screw.
Press the "ON" button and check if the motor of the selected equipment is operating, if turbulators/ash screw are moving. Every time you press the "ON" button, it lights up green. After pressing the "OFF" button the motor of the selected equipment will stop operating.

5.4.4. P(PWM) + 3-WAY MIXING VALVE

This option allows you to check the operation of the P(PWM) pump and the 3-way mixing valve.
Press the "ON" button next to the corresponding symbol and check whether the valve is open/closed or whether the pump is running. Every time you press the "ON" button, it lights up green. After pressing the "OFF" button, the valve/pump will stop operating.





5.4.5. GRATE CLEANER

This option allows you to check the operation of the ash cleaner motor (grate cleaner).
By pressing the "ON" button next to "Open!" the grate motor starts to operate continuously in direction 1. By pressing the "OFF" button, the motor stops.
By pressing the "ON" button next to "Close!" the grate motor starts to operate continuously in direction 2. By pressing the "OFF" button, the motor stops.
When the burner grate reaches the "grate closed" position, the symbol is briefly displayed on the display.
Every time you press "ON" button, it lights up green. By exiting the menu with the "BACK" button, the burner grate returns to the "CLOSED" position ( ).

5.4.6. FEEDER SCREW + ROTARY VALVE

This option allows you to check the operation of the pellet feeder screw and the rotary valve.
Press the "ON" button next to the "Feeder screw + Rotary valve" or "Rotary valve" and check if operates. Press the "ON" button and check whether the motor of the selected equipment is operating, whether the "Feeder Screw + Rotary valve" or "Rotary valve" is moving. Every time you press the "ON" button, it lights up green. After pressing the "OFF" button, the motor of selected equipment will stop operating.

5.4.7. PUMPS (Px)

This option allows you to check the operation of each pump.
Depending on the selected configuration, the number of pumps is different. Press the "ON" button next to the pump you want to test and check if the symbol of the selected pump rotates. It is necessary to check the operation of the selected pump in the heating system. Every time you press the "ON" button, it lights up green. After pressing the "OFF" button, the pump will stop.

Example: Configuration 18

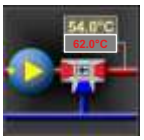
Example: Configuration 36

5.4.8. K1 3-WAY VALVE (If exists in configuration)

This option allows you to check the operation of the 3-way valve and the pump of circuit 1. Press the "ON" button next to the corresponding symbol and check if the valve is open/closed or if the pump is operating. Every time you press the "ON" button, it lights up green. After pressing the "OFF" button, the valve/pump will stop operating.

Pump!

Open!

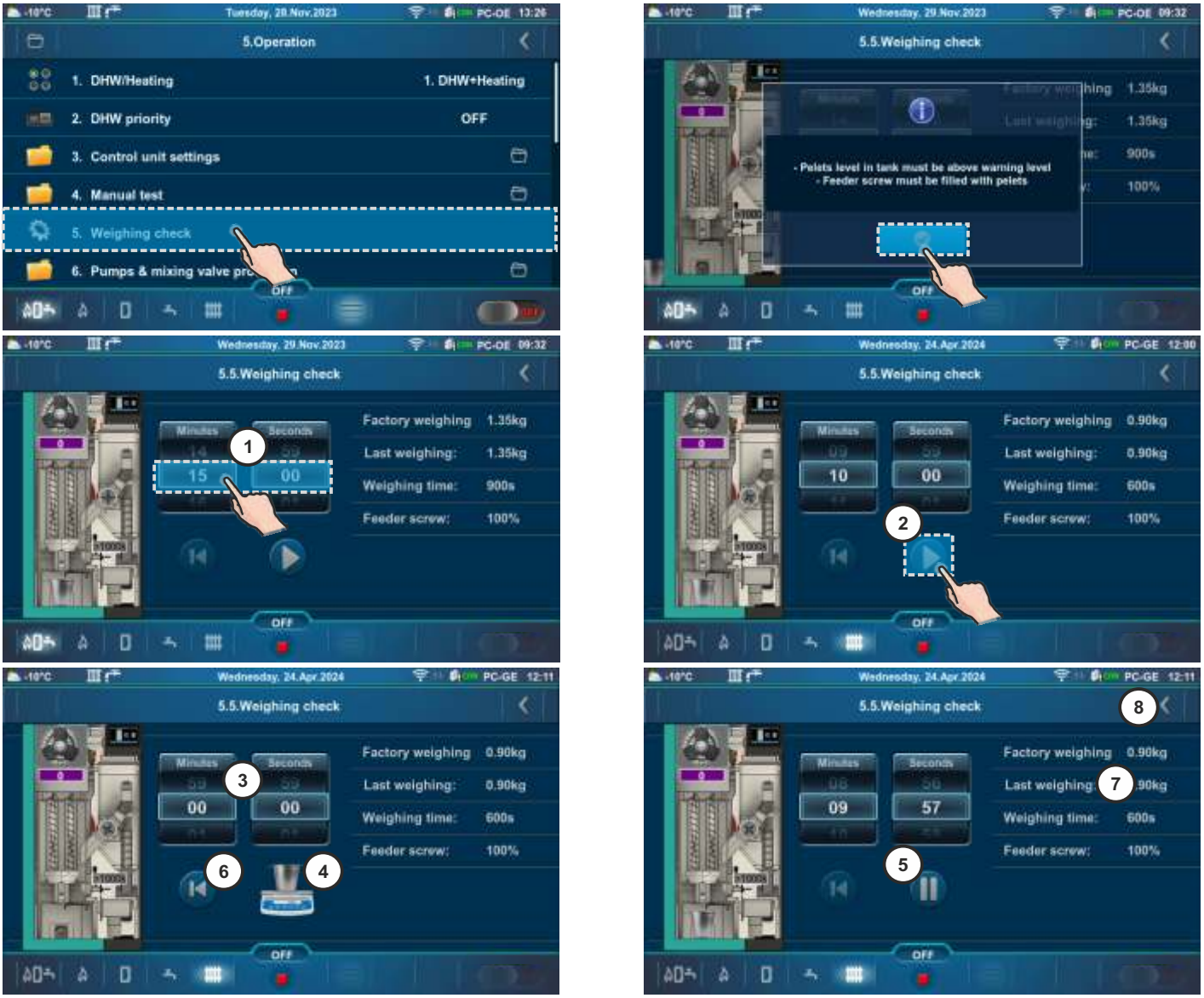


Close!

5.4.9. SUCTION SYSTEM

This option allows you to turn on/turn off the vacuum suction system and check its operation (during operation, the symbol rotates). The type of suction system (OFF, Pellet tank, Mole, Feeder screw) must be set by an authorized service technician in the installation menu (PIN). Press the "ON" button next to the corresponding symbol and check if the symbol is operating. Every time you press the "ON" button, it lights up green. After pressing the "OFF" button, the symbol will stop operating.

5.5. WEIGHING CHECK



This option allows you to check the quantity of supplied pellets. It is possible to adjust the operating time (1) (according to the weighing scale capacity and capacity of bucket) of the feeder screw after which you want to weigh the pellets. It is necessary to replace the ash box with bucket. Press the "PLAY" button (2) to start the feeder screw operation. To pause the feeder screw operation press "PAUSE" button (5). When countdown is done (3) on the screen will appear weighing scale and bucket (4) and it is necessary to take out the bucket and weigh the mass of the pellets (weigh only pellets without bucket). To start the second cycle of weighing it is necessery to press the "REPEAT" button (6). In order for the weighing to be as accurate as possible, it is necessary to repeat the weighing at least 3 times. After weighing proces the mass of weighted pellets has to be compared with "Last weighing" (7). To exit this menu press "BACK button" (8).

"Last weighing" can be carried out by an authorized service technician (otherwise the "Factory weighing" and the "Last weighing" are the same).

If currently weighed amount of pellets is between +/-10 % of "Last weighing", everything is fine.

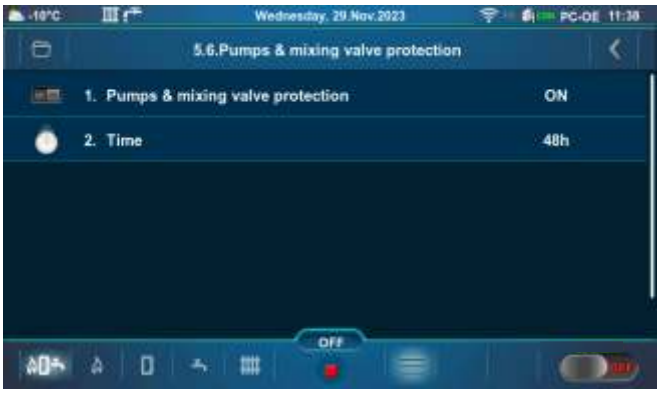
If currently weighed amount of pellets is between +/-30 % and +/-10 % of "Last weighing", there are possible problems in the ignition/stabilization phase of the boiler, the rest works fine. If ignition/stabilization problems occur, it is necessary to call a service technician to adjust the boiler controller.

If currently weighed amount of pellets is 30 % more/less than the "Last weighing", it is necessary to call the service technician to adjust the boiler controller.

5.6. PUMPS & MIXING VALVE PROTECTION

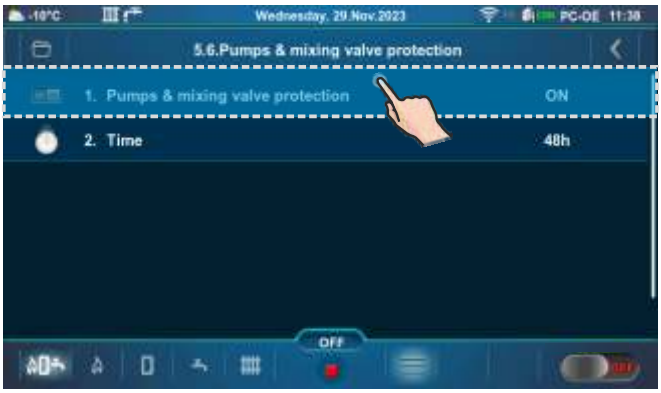
This option allows to protect the pumps/valves to not get jammed during a long period of standstill (usually during the summer season when the heating is turned off). Factory is this option enabled and the maximum standstill time of outputs is set to 48 hours. According to this setting, any pump/valve output that is not activated within 48 hours will be activated for a duration of 60 seconds. When a certain pump/valve output is activated, its standstill time is reset.

NOTE: The boiler must be connected to the power supply and "Main Switch (0/1)" must be switched on, for this function to be active.

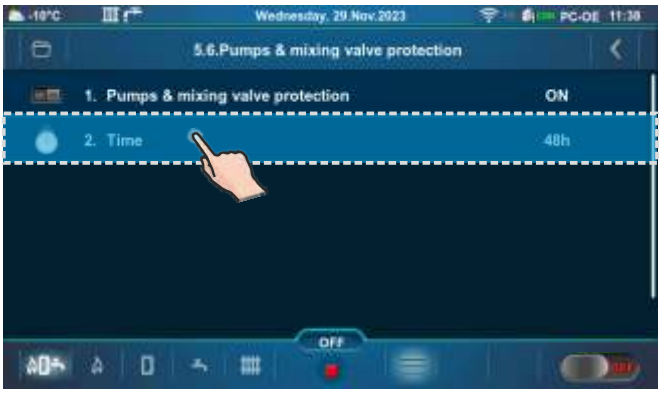


5.6.1. PUMPS & MIXING VALVE PROTECTION

This option enables activation/deactivation of pumps and valves protection.
Factory: ON
Possible selection: ON, OFF

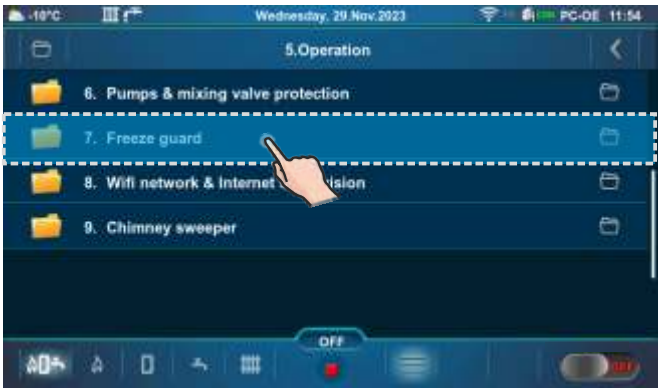


5.6.2. TIME



5.7. FREEZE GUARD

This option enables activation/deactivation of the "Freeze guard" option and defining its options. The "Freeze guard" option can work with or without outdoor temperature sensor.



5.7.1. FREEZE GUARD

Possibility of activating or deactivating of the "Freeze guard" option. When this option is activated, a snowflake icon appears on the top bar of the screen.
Factory: OFF
Possible selection: ON, OFF

5.7.2. OUTDOOR TEMPERATURE

Outdoor temperature option shows if the sensor for freeze guard function is ON or OFF.

5.7.3. OPTION

"Option" enables the monitoring of sensor temperatures of certain system elements. Possible selection depends on the set configuration and installed additional equipment. If conditions which are set in Freeze guard/Temperature submenu are met, Freeze guard option will be activated for selected elements.

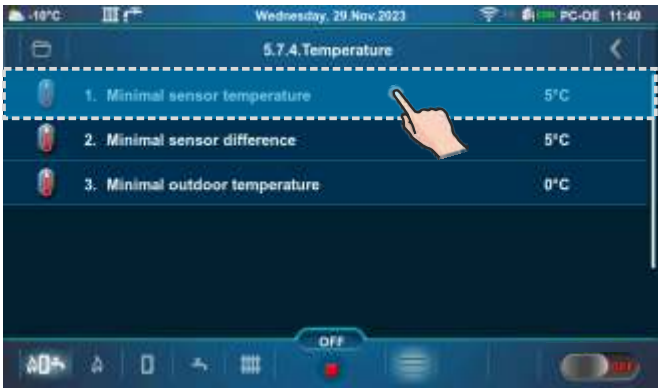
Possible selection: 1. Boiler, 2. (K0), 3. (K1), 4. (K2)

5.7.4. TEMPERATURE

This option allows setting the minimal sensor temperature and minimal sensor difference, as well as the minimal outdoor temperature at which the "Freeze Guard" option will be activated.

5.7.4.1. MINIMAL SENSOR TEMPERATURE

This submenu allows only an overview.
Setting the sensor temperature for selected "Option(s)" at which "Freeze guard" option will be activated.
Factory: 5 °C
Possible selection: 3 - 10 °C (set by an authorized technician)

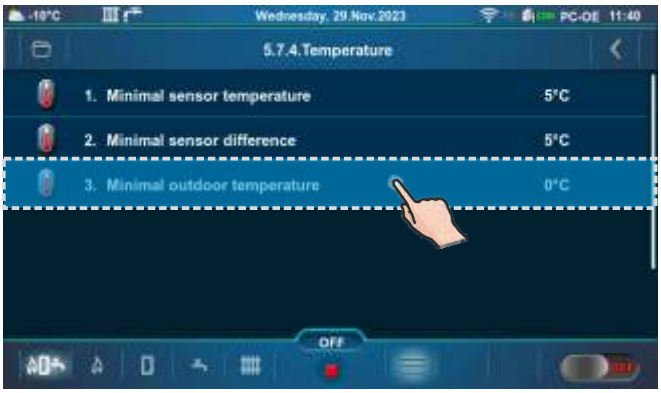


5.7.4.2. MINIMAL SENSOR DIFFERENCE

This submenu allows only an overview.
Setting the temperature difference after which the "Freeze guard" option will be deactivated.
Factory: 5 °C
Possible selection: 2 - 15 °C (set by an authorized technician)

5.7.4.3. MINIMAL OUTDOOR TEMPERATURE

Setting the outdoor temperature at which the "Freeze guard" option will be activated.
Factory: 0 °C
Possible selection: -5 - 5 °C



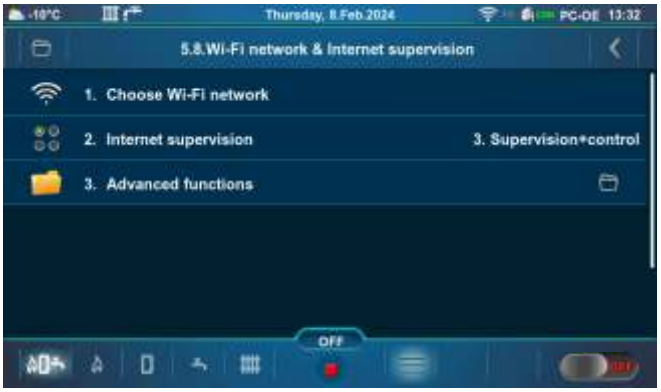
5.8. Wi-Fi NETWORK & INTERNET SUPERVISION

IMPORTANT NOTES:

Boiler controller requires an active DHCP server at the access point (e.g. router) because manual adjustment of network parameters is not possible. For more information, contact your home network administrator.

This submenu allows configuration of the controller for boiler connection to the Internet via the local Wi-Fi network.

This submenu is used to change Internet supervision settings.



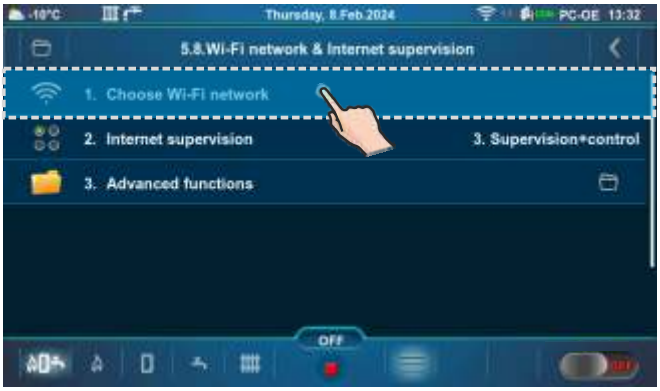
When the controller is connected to the boiler and "Internet supervision" is enabled, a new icon appears on the top bar of the screen indicating the status of Internet supervision.

The controller is connected to the web portal.
(Internet supervision is possible)

The controller is not connected to the web portal.
(Internet supervision is not possible)

5.8.1. CHOOSE Wi-Fi NETWORK

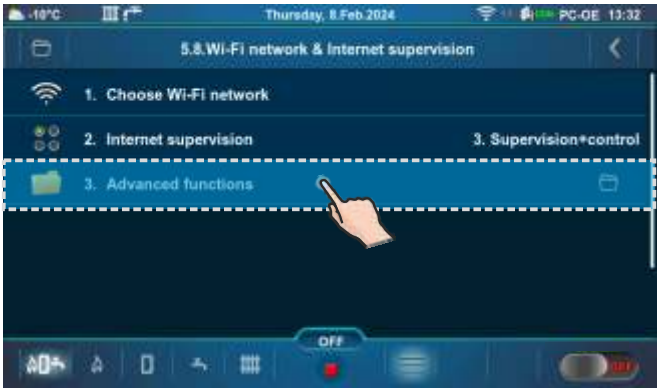
Boiler controller finds all available Wi-Fi networks. Select the Wi-Fi network you have access to. Press the button "JOIN", enter the password if necessary and confirm with the "OK" button. If you want to disconnect from a Wi-Fi network, press the button "DISCONNECT".



5.8.2. INTERNET SUPERVISION

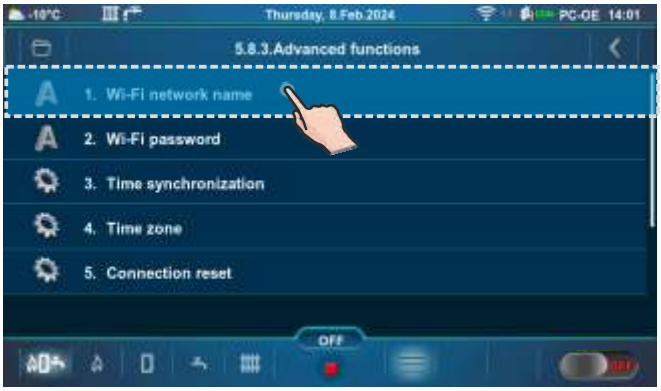
This option is used to set and enable/disable "Internet Supervision".
Factory: Supervision+control
Possible selection: OFF, Supervision,Supervision+control

5.8.3. ADVANCED FUNCTIONS



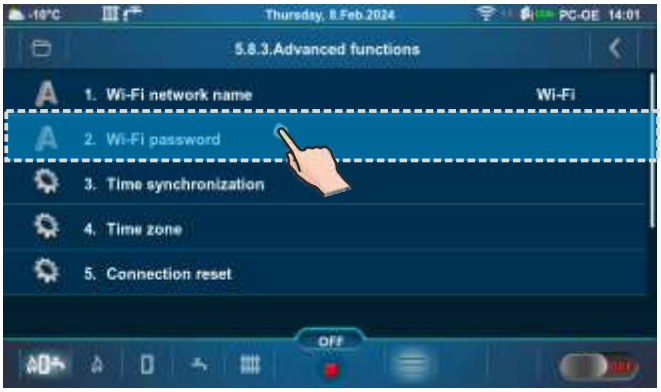
5.8.3.1. Wi-Fi NETWORK NAME

This option allows entering the name of the Wi-Fi home network to which you want to connect the controller and boiler. The correct Wi-Fi network name must be entered, otherwise the boiler will not be able to connect to the Wi-Fi network.



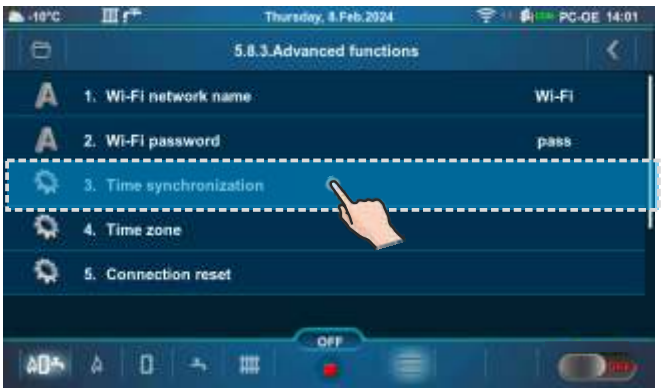
5.8.3.2. Wi-Fi PASSWORD

This option allows entering a password for the local Wi-Fi network. The correct password for the local Wi-Fi network must be entered, otherwise the boiler will not be able to connect to the Wi-Fi network.



5.8.3.3. TIME SYNCHRONIZATION

Currently not active.

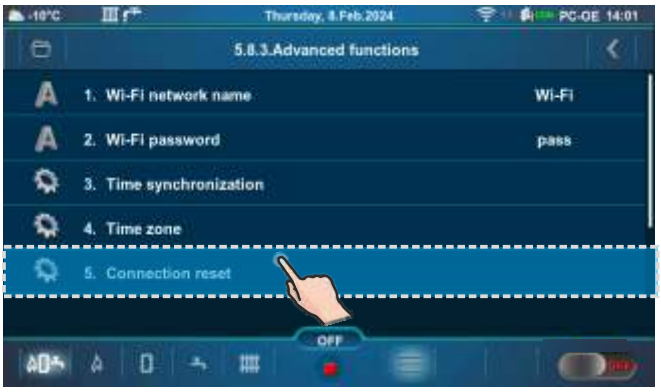


5.8.3.4. TIME ZONE

Currently not active.

5.8.3.5. CONNECTION RESET

This option allows resetting of the controller connection with the local network.



5.9. INTERNET PORTAL FOR SUPERVISION AND MANAGEMENT

In order to be able to use internet supervision and management, you must be registered on the portal with your email address and the identification number (WiFi ID). You can see the registration procedure on the video instructions. Please scan QR code with your smartphone or open web page from link below.

IMPORTANT:
For WiFi ID, see point "8.1. Software info".

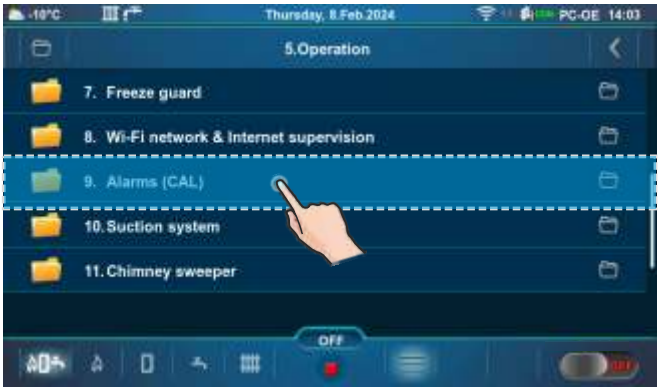
https://portal.centrometal.hr

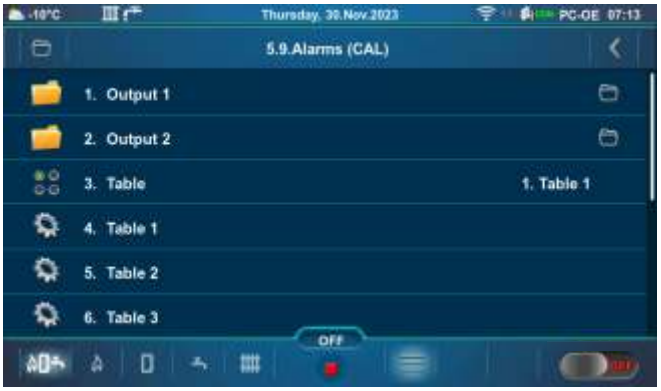
https://www.centrometal.hr/portal-video/

NOTE: The number of submenu 5.X. depends on the additional equipment that has been activated (it is activated by an authorized technician in the Installation -> PIN menu).

5.X. ALARMS (CAL)

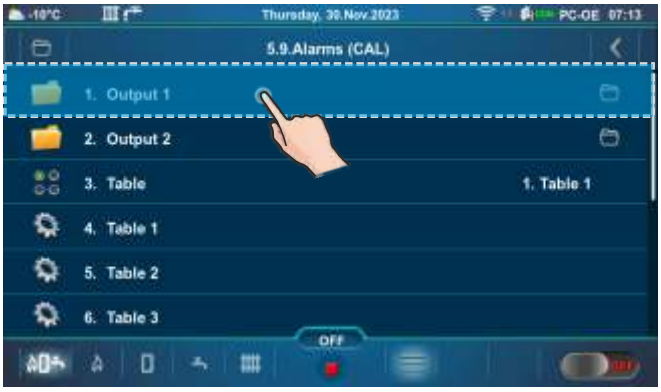
This option is used to configure the visual or audible alarm (speaker and indicator light are optional and must be installed by an authorized technician) to alert the user when he is not near the boiler. The warning mode and cause can be set in this submenu (errors, low fuel level, etc.). "Delay" is the time between two alerts.





5.X.1. OUTPUT 1

This submenu allows configuration of "Output 1". It is possible to select the mode of errors or fuel level signaling.



5.X.1.1. ERRORS

This option determines whether "Output 1" will notify errors. By choosing a particular type of signal, error notification will be activated in the form of the chosen signal.
Factory: OFF
Possible selection: 1. OFF, 2. Continuous, 3. Fast 1 time, 4. Fast 3 times, 5. Slow 1 time, 6. Slow 3 Times, 7. Table

5.X.1.2. FUEL LEVEL

This option determines whether "Output 1" will notify of the fuel level. By choosing a particular type of signal, fuel level notification will be activated in the form of the chosen signal.
Factory: OFF
Possible selection: 1. OFF, 2. Continuous, 3. Fast 1 time, 4. Fast 3 times, 5. Slow 1 time, 6. Slow 3 Times, 7. Table

5.X.1.3. BUFFER TANK

5.X.1.3.1. BUFFER TANK

This option determines whether "Output 1" will notify a low temperature in the buffer tank.
Factory: OFF
Possible selection: 1. OFF, 2. Continuous, 3. Fast 1 time, 4. Fast 3 times, 5. Slow 1 time, 6. Slow 3 Times

5.X.1.4. DELAY

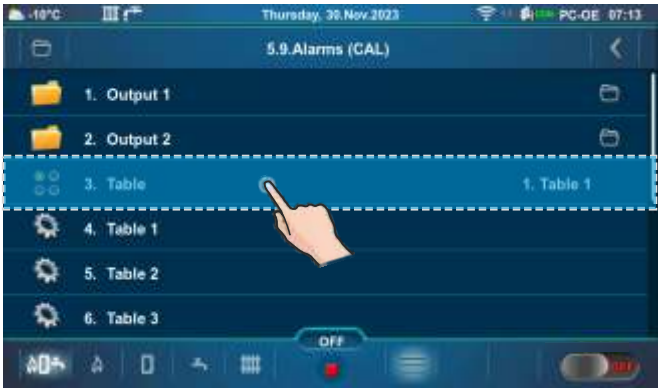
The option determines time after which the error notification or fuel level warning signal will appear again (this parameter is not valid if a continuous signal is chosen).
Factory: 20s
Possible selection: 5-3600s

5.X.2. OUTPUT 2

In the same way as for "Output 1", the parameters for "Output 2" (5.X.2.) can be set.

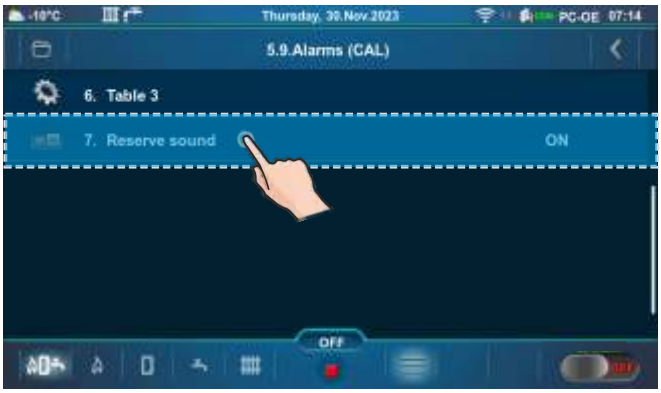
5.X.3. TABLE

This option allows table selection according to which alarm outputs will operate. The change or automatic deactivation of the signal within a specified period of time.
Factory: Table 1
Possible selection: Table 1, Table 2



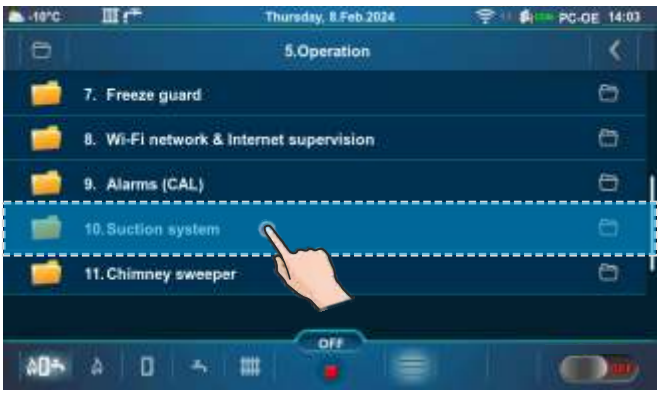
5.X.7. RESERVE SOUND

Factory: ON
Possible selection: ON, OFF



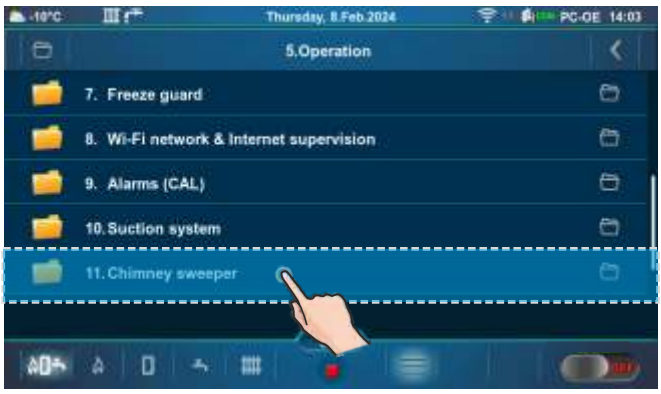
5.X. SUCTION SYSTEM

This option is used to set suction system for pellet supply. Detailed description can be found in "Technical instructions for Pellet suction system".



5.X. CHIMNEY SWEEPER

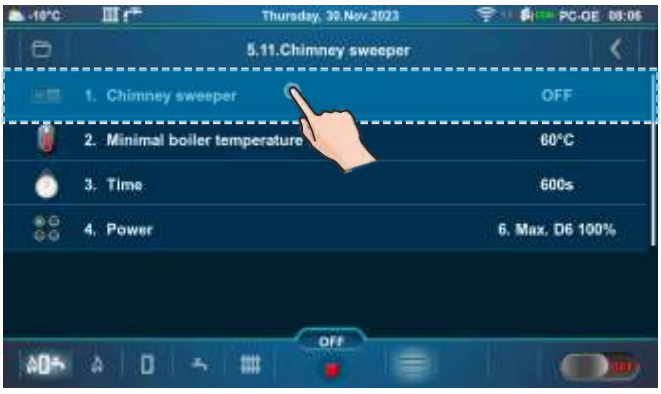
This submenu enables measurement of combustion flue gases at nominal power (D6) and minimum power (D2) of the boiler.

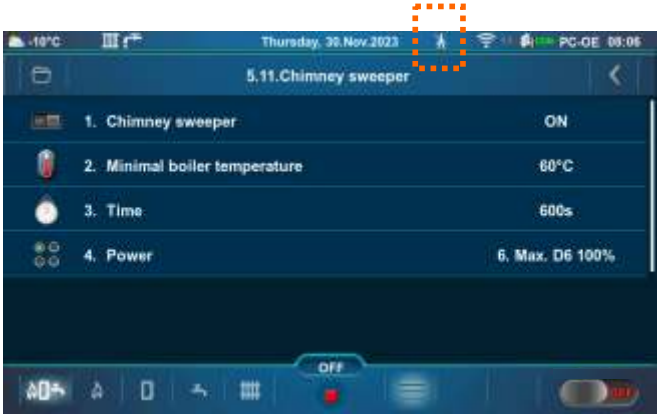


5.X.1. CHIMNEY SWEEPER

Activating this option will display a chimney sweeper icon on the top bar of the screen. By selecting the "Boiler screen (PC-KE)", a table with counter and table with message will appear. The countdown begins when the boiler reaches the selected power (Dx) and the text on the counter is red. When the boiler is at the selected power (Dx) for the set "Time" and the "Minimal boiler temperature" condition is met, the counter digits turn green and measurement can be performed.

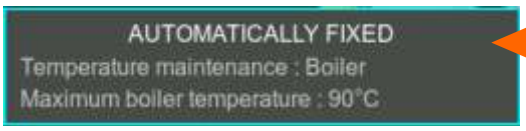
Important,
if after starting the flue gas measurement, a red counter appears on the screen (the boiler went into modulation), it is necessary to stop the started measurement, for a new measurement, wait until the counter turns green again. Flue gas measurement performed while the counter is even briefly red is not valid.
Factory: OFF
Possible selection: ON, OFF

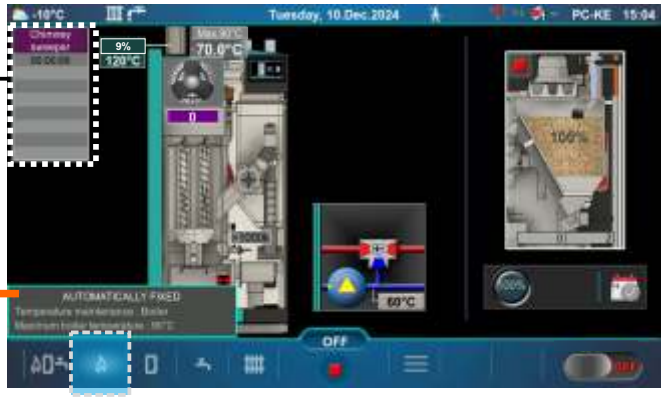




Counter table

Table with message





POWER MODULATION PRINCIPLE IN "CHIMNEY SWEEPER" OPTION:
Modulation - power decrease:
D6==>**D5** (Tk=Tkmax – 3,0°C),
D5==>**D4** (Tk=Tkmax – 2,5°C),
D4==>**D3** (Tk=Tkmax – 2,0°C),
D3==>**D2** (Tk=Tkmax – 1,5°C),
D2==>**D1** (Tk=Tkmax – 1,0°C),
D1==>**D0** (Tk=Tkmax – 0,5°C),
D0==>**S7-1** (Tk=Tkmax)

Modulation - power increase:
D0==>D1 (Tk=Tkmax – 0,5°C),
D1==>D2 (Tk=Tkmax – 1,0°C),
D2==>D3 (Tk=Tkmax – 1,5°C),
D3==>D4 (Tk=Tkmax – 2,0°C),
D4==>D5 (Tk=Tkmax - 2,5°C),
D5==>D6 (Tk=Tkmax - 3,0°C)

Legend:
Tkmax - set boiler temperature
Tk - measured water temperature in the boiler
D0…D6, S7-1 - operating phases

5.X.2. MINIMAL BOILER TEMPERATURE

This submenu allows only an overview.
The factory set temperature that must be achieved to start the measurement (except for conditions that can be changed - boiler power and time):
- Minimal boiler temperature: min. 60 °C (it cannot be changed)
Factory: 60 °C

5.X.3. TIME

Period of time during which the boiler operates at the chosen power (D6/D2), after the "Minimal boiler temperature" is reached (so that the flame stabilizes).
After this time, the text on the counter turns green and only then you can start measuring flue gases.
Factory: 600s
Possible selection: 600-3600s

5.X.4. POWER

This option enables the boiler to operate at the selected power (D6 or D2) so that the combustion flue gases can be measured. The boiler operates at selected power until this option is deactivated or the temperature in the boiler rises 3 °C less than the maximum boiler temperature (in this case, the boiler reduces the power). The boiler always reaches the nominal power D6 and then drops to the selected modulation power.

Factory: 6.Max. D6 100%

Possible selection: 2.Min. D2 ~25%, 6.Max. D6 100%

IMPORTANT!

When the "Chimney sweeper" option is activated:

- **the external control is automatically deactivated. Once the option is deactivated, the boiler and its peripherals devices continue to operate.**
- **the boiler shutdown option due to grate cleaning is automatically deactivated if the "Chimney sweeper" option is activated.**

6.0. HISTORY

The list of errors/warnings/info provides an overview of the errors/warnings/info that have occurred. On the screen is displayed: label, name, time and date when the error/warning/info occurred.

E - conditions that cause the shutdown of the boiler. The error must be rectified before boiler is started again.

ERROR	NAME	DESCRIPTION
E2	BUFFER TANK SENSOR (UP) ERROR	**Boiler status:** Boiler goes to phases S7, C0 and OFF. **Possible causes:** Interruption on el. connections between sensor and boiler, cold connection or buffer tank sensor (UP) is invalid.
E3	BUFFER TANK SENSOR (DOWN) ERROR	**Boiler status:** Boiler goes to phases S7, C0 and OFF. **Possible causes:** Interruption on el. connections between sensor and boiler, cold connection or buffer tank sensor (DOWN) is invalid.
E4	FLUE GAS SENSOR ERROR	**Boiler status:** Boiler goes to phases S7, C0 and OFF. **Possible causes:** Interruption on el. connections between sensor and boiler, cold connection or invalid flue gas sensor, measured flue gas temperature above 300 °C.
E5	OUTDOOR TEMPERATURE SENSOR ERROR	**Boiler status:** The boiler works normally, the problem occurs in the operation of the heating circuits (if configured) and the CM2K regulator (if installed). **Possible causes:** Interruption on el. connections between sensor and boiler, cold connection or invalid outdoor temperature sensor.
E7	RETURN FLOW TEMPERATURE SENSOR ERROR	**Boiler status:** Boiler goes to phases S7, C0 and OFF. **Possible causes:** Interruption on el. connections between sensor and boiler, connection to the boiler, cold connection or invalid return flow sensor.
E9	BOILER SENSOR ERROR	**Boiler status:** Boiler goes to phases S7, C0 and OFF. **Possible causes:** Interruption on el. connections between sensor and boiler, connection to the boiler, cold connection or invalid sensor.

E10	UNKNOWN BOILER POWER	**Boiler status:** Remaining in the OFF phase. **Possible causes:** Unknown software, incorrect configuration software.
E11	PHOTOCELL ERROR	**Boiler status:** Boiler goes to phase OFF after ending phase S0 (retry start is allowed). **Possible cause:** Invalid photocell (sending information that flame exist in phase S0).
E12	SAFETY PRESSURE SWITCH	**Boiler status:** Boiler immediately goes to phase OFF. **Possible causes:** If any door or any opening for cleaning on boiler is not properly closed, turbulator area is not closed or PVC tube for pellet supply has holes. Interruption in el. connection between safety pressure switch and boiler, connection to the boiler, cold connection or invalid safety pressure switch. Interruption or bad sealing of safety pressure switch pipe. Blocked flue passages.
E13	FAN ERROR	**Boiler status:** Boiler immediately goes to phase OFF. **Possible causes:** Interruption on el. connections between fan and boiler, problem with rpm fan sensor, problem with fan motor.
E14	MEMORY ERROR	**Boiler status:** Boiler immediately goes to phase OFF.
E15	COMMUNICATION ERROR WITH MOTHERBOARD	**Boiler status:** Boiler immediately goes to phase OFF. **Possible cause:** Problem with the UTP Ethernet cable/connector (connections between MOTHERBOARD and 7" screen).
E17	LAMBDA PROBE ERROR	a) Error occurs in the phase of "OFF" - The problem is with the communication system within the lambda (Cables, connectors, el. boards, software). b) Error occurs in all phases except "OFF" - The problem is with el. heater which is integrated into the lambda probe or with the communication system within the lambda (Cables, connectors, el. boards, software).
E18	NO FLAME IN IGNITION STAGE	**Boiler status:** Boiler immediately goes to phase OFF. **Possible cause:** There is not enough pellets, problem with el. heater, problem with photocell.
E19	FLAME DISAPPEARED IN WORKING PHASE	**Boiler status:** Boiler immediately goes to phase OFF. **Possible cause:** There is not enough pellets, problem with photocell.
E21	ERROR GRATE CLEANER	**Boiler status:** Boiler immediately goes to phase OFF. **Possible causes:** Interruption on el. connections between grate microswitch and boiler control unit, cold connection or problem with grate motor.
E22	FUEL LEVEL	**Boiler status:** Boiler goes to phases S7, C0 and OFF. **Possible cause:** There is not enough pellets to continue boiler operation. (If the suction system is enabled, E22 always appears after error E32.)

E23	FLAME DISAPPEARED IN IGNITION STAGE	**Boiler status:** Boiler immediately goes to phase OFF. **Possible cause:** There is not enough pellets, problem with photocell.
E24	FLAME DISAPPEARED IN STABILIZATION STAGE	**Boiler status:** Boiler immediately goes to phase OFF. **Possible cause:** There is not enough pellets, problem with photocell.
E26	FUEL SENSOR	**Boiler status:** Boiler immediately goes to phase OFF. **Possible causes:** Interruption on el. connections between sensor and boiler, connection to the boiler, cold connection or invalid fuel sensor.
E28.1	COMMUNICATION ERROR WITH CM2K-CIRCUIT C1 & C2	**Boiler status:** Boiler works normally, the problem occurs in the operation of the heating circuits (if configured) and the CM2K regulator (if installed). **Possible cause:** Problem with the UTP Ethernet cable (connections between CM2K and the boiler controller).
E28.2	COMMUNICATION ERROR WITH CM2K-CIRCUIT C3 & C4	**Boiler status:** Boiler works normally, the problem occurs in the operation of the heating circuits (if configured) and the CM2K regulator (if installed). **Possible cause:** Problem with the UTP Ethernet cable (connections between CM2K and the boiler controller).
E28.3	COMMUNICATION ERROR WITH CM2K-CIRCUIT C5 & C6	**Boiler status:** Boiler works normally, the problem occurs in the operation of the heating circuits (if configured) and the CM2K regulator (if installed). **Possible cause:** Problem with the UTP Ethernet cable (connections between CM2K and the boiler controller).
E32	EMPTY PELLET STORAGE CLOGGED PELLET DELIVERY PIPE	**Boiler status:** Boiler works normally. The problem (stoppage) occurs in the operation of the additonal equipment for Vacuum supply of pellets (Pellet suction system). **Troubleshooting:** Check the pellet level in the big tank/room, check if the flexible tubes are blocked, check if the turbine net is full of dust, check the equipment for taking pellets from the big tank.
E33	FUEL LEVEL SENSOR VISIBILITY ERROR	The pellet level sensor is clogged even though there are no pellets in the tank, clean the pellet level sensor. If, despite cleaning, the sensor still shows a clogged state (red LED), replace the sensor.
E34	COMMUNICATION ERROR WITH CMVAC	**Boiler status:** Boiler works normally. The problem occurs in the operation of the additonal equipment for Vacuum supply of pellets (Pellet suction system). **Troubleshooting:** Check the UTP Ethernet cable and its connections to the boiler controller and the suction system.
E40	SAFETY THERMOSTAT	**Boiler status:** Feeder screw and flue gas fan currently stop working, the boiler is currently in the OFF phase. Fan and feeder screw lose electricity, manual tests do not work. **Possible cause:** The water temperature in the boiler is too high (above 104 °C). **Troubleshooting:** Wait until the water temperature in the boiler drops below 70 °C and perform the procedure from "SAFETY THERMOSTAT - Boiler malfunction".

E46	COMMUNICATION ERROR WITH ADDON DRIVER	**Call serviceman.**
E48	DATE AND TIME ARE NOT SET	**Boiler status:** The boiler can not operate. The boiler states under different circumstances are described in point "Possible cause". **Possible cause:** The battery of the 7" screen is empty. (Time resets to 00:00 and the date to 1.1.2020. after switching off the controller on the main switch or due to power outage, and at least one switching time (SCHEDULE) (boiler/DHW/recirculation/CM2K) is switched on). Detection of an empty battery is possible only after power outage and restoring of the power supply to the 7" screen. If neither one switching time (SCHEDULE) is switched ON, error E48 will not appear, only warning W9 will appear. When error E48 appears, the boiler goes into the shutdown phase S7 (S7-1). **Troubleshooting:** It is necessary to replace the battery of the 7" screen (CR 1632)
E52	OVERFILLED BIG PELLET TANK TRANSPORTER BOX	**Boiler status:** Boiler in the OFF phase, further everything is related to error E22. **Possible cause:** The pellet feeder screw of the big pellet tank filled the feeder screw (transporter) box with pellets, check if the pellet pipe between the big pellet tank and the boiler is not blocked. Check the amount of dust in the feeder screw (transporter) box and clean it. If during feeder screw operation there are too many pellets (in unit of time) in the feeder screw (transporter) box, call an an authorized service technician.

Errors of additional equipment: CMNET (module for boiler cascade)

E27	COMMUNICATION ERROR WITH CMNET	**Boiler status:** Boiler immediately goes to phase OFF.

Errors of additional equipment: CM2K

E29.1	SENSOR K1 CIRCUIT	**Boiler status:** Boiler works normally. The problem occurs in the work of additional equipment CM2K if embedded.
E29.2	SENSOR K2 CIRCUIT	
E29.3	SENSOR CM2K C1 CIRCUIT	
E29.4	SENSOR CM2K C2 CIRCUIT	
E29.5	SENSOR CM2K C3 CIRCUIT	
E29.6	SENSOR CM2K C4 CIRCUIT	
E29.7	SENSOR CM2K C5 CIRCUIT	
E29.8	SENSOR CM2K C6 CIRCUIT	
E30.1	CORRECTOR CIRCUIT K1	
E30.2	CORRECTOR CIRCUIT K2	
E30.3	CORRECTOR CM2K C1 CIRCUIT	
E30.4	CORRECTOR CM2K C2 CIRCUIT	
E30.5	CORRECTOR CM2K C3 CIRCUIT	
E30.6	CORRECTOR CM2K C4 CIRCUIT	
E30.7	CORRECTOR CM2K C5 CIRCUIT	
E30.8	CORRECTOR CM2K C6 CIRCUIT	

INFORMATION / WARNING

W- Information about the state of the boiler, which does not stop the boiler operation

WARNING

W1	FUEL LEVEL	**Boiler status:** Boiler will operate for a while, if the pellet tank is not refilled with pellets, "E22 Fuel level" will be displayed, which means that there is not enough pellets to continue boiler operation. **Possible cause:** Low fuel level in pellet tank, enough for short time. (It can appear only if the suction system is turned off).
W2	NO FLAME IN IGNITION STAGE	**Boiler status:** Fire did not appear after the adjusted max. time. Boiler will repeat ignition several times before error E18 "No flame in ignition stage" appears. **Possible cause:** Insufficient quantity of pellets in the combustion chamber for proper ignition, the pellets are too humid, the electric heater is defective.
W2.1	RETRY IGNITION	**Boiler status:** Boiler still adds a certain quantity of pellets/restarts ignition a certain number of times before error E18 appears. There is no flame during ignition phase. **Possible cause:** Insufficient quantity of pellets in the combustion chamber for proper ignition, the pellets are too humid, the electric heater is defective.
W5	FACTORY SETTINGS LOADED	**Boiler status:** Boiler works normally with loaded factory default settings.
W6	LOW RETURN TEMPERATURE	**Boiler status:** Boiler will work normally (it is necessary to eliminate the cause, as long-term operation of the boiler will cause condensation in the boiler and flue gas tubes clogging). **Possible cause:** Problem with 3-way mixing valve/ actuator, problem with return flow temperature sensor.
W7	LOW BUFFER TANK TEMPERATURE	**Boiler status:** Boiler is operating normally. Pumps for the heating circuits stop. The DHW pump operates normally according to its conditions and demand.
W9	DATE AND TIME ARE NOT SET	**Boiler status:** Boiler can operate (if the boiler switching times (SCHEDULE) are used the E48 error occurs and the boiler can not operate). **Possible cause:** The battery of the 7" screen is empty. (Time resets to 00:00 and the date to 1.1.2020. after switching off the controller on the main switch or due to power outage). **What needs to be done:** It is necessary to change the battery on the 7" controller screen (CR 1632), set the date and time on the controller.

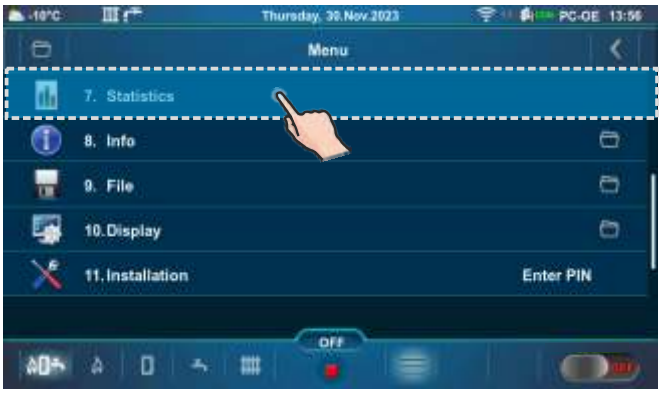
INFO - IW

IW1-1	POWER DOWN	**Power outage** Power cut
IW1-2	POWER UP	Return of electricity

INFO - I

I1	REFILL	After a failed ignition (flame did not appear), the pellet is automatically replenished for 30 % of the initial charging time and goes to phase S3.
I2	FLAME DISAPPEARED IN IGNITION STAGE	
I2.1	RETRY IGNITION	Re-ignition due to the disappearance of the flame during the ignition phase.
I3	NO FLAME IN STABILIZATION STAGE	
I3.1	RETRY IGNITION	Re-ignition due to the disappearance of the flame during the stabilization phase.
I4	SUCTION SYSTEM REFILL	If the suction system in the standard cycle fails to fill the pellet tank to the level of the sensor, it will make several more filling attempts, each lasting 60 seconds. For each of them, I4 is displayed.
I19	FLAME DISAPPEARED IN WORKING PHASE	
I19.1	RETRY IGNITION	Re-ignition due to the disappearance of the flame during the working phase (D2 - D6).

7.0. STATISTICS



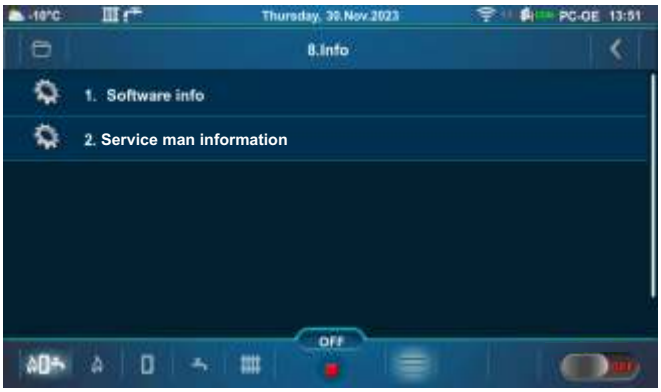
Statistics of boiler operation and certain parts:

- Work and pause (S7-3) time of boiler (min)
- Work time of boiler (min)
- Starting
- Feeder screw (min)
- Flame (min)
- Fan (min)
- Heater (min)
- Vacuum turbine (min)
- Vacuum cycles
- D6 (min)
- D5 (min)
- D4 (min)
- D3 (min)
- D2 (min)
- D1 (min)
- D0 (min)

The controller follows the startup number of the boiler and the operation time of certain parts of the boiler.

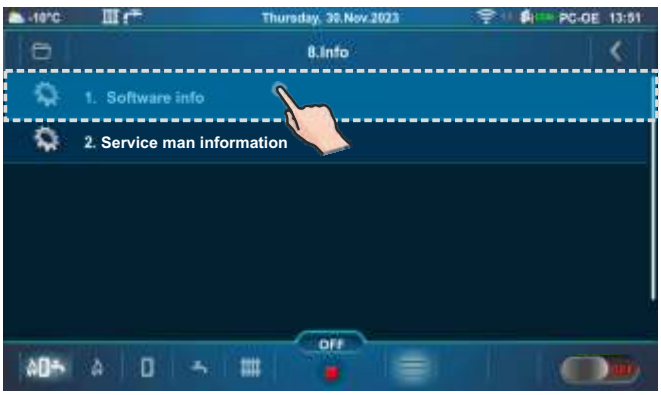
8.0. INFO

Menu with general information.



8.1. SOFTWARE INFO

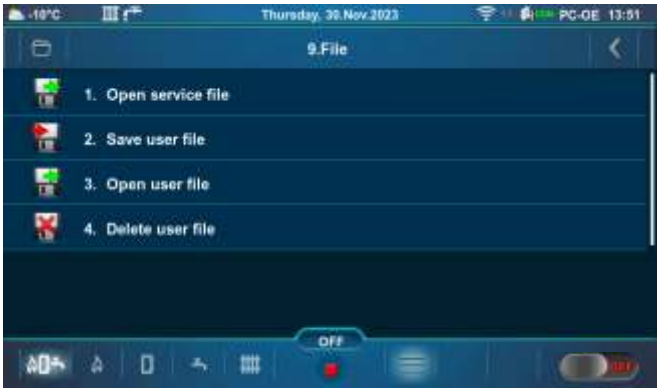
Software information (Boiler power, Software version, Wi-Fi ID, Active file, MB). (The active file can be a user (USR) or service (SRV) file that is selected in the File menu by user or authorized service technician).



8.2. SERVICEMAN INFORMATION

Information about the service technician (Company, Service technician, Telephone, Email). If the authorized service technician enters his data, a screen as below is displayed. If nothing is entered, only hyphens (-) are displayed.

9.0. FILE



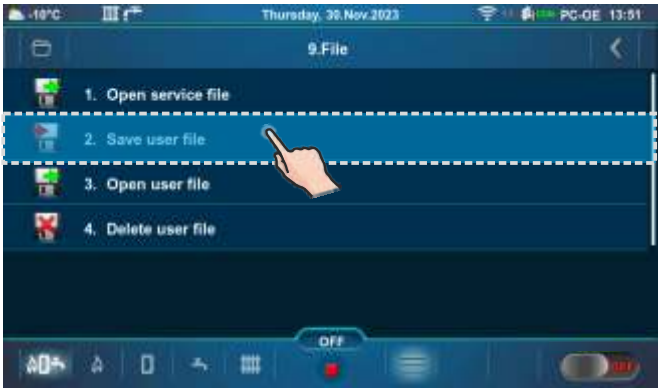
9.1. OPEN SERVICE FILE

After pressing "Open service file", it is possible to choose and open the service file (press the "Open" button). Press the "Cancel" button to return to the submenu.

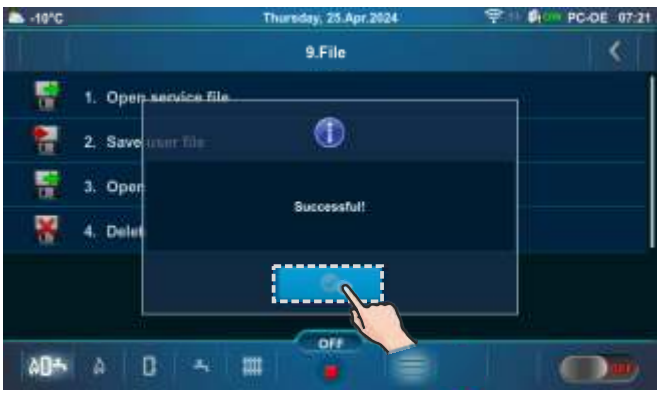
9.2. SAVE USER FILE

This option enables to save the changed user parameters in memory under the user file (it can be loaded later). The "Save As" option (1a, 1b) saves the current file as a new file and under a new name, while the "Save" option (2) saves the existing file (if exist in user memory) with the new settings. File which is active (selected) is marked with a green tick.

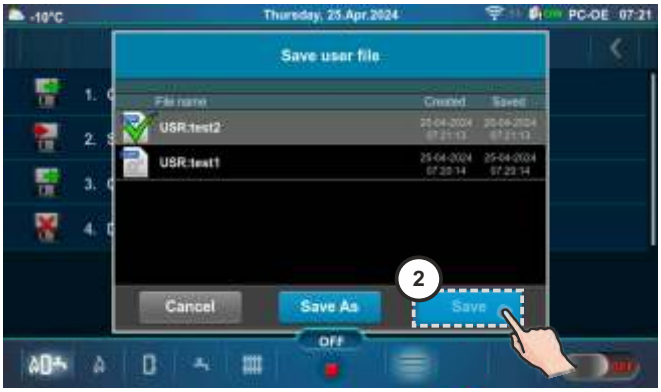
1a - Example if service technician did not save the user file.



1b - Example of saving a user file under a different name.



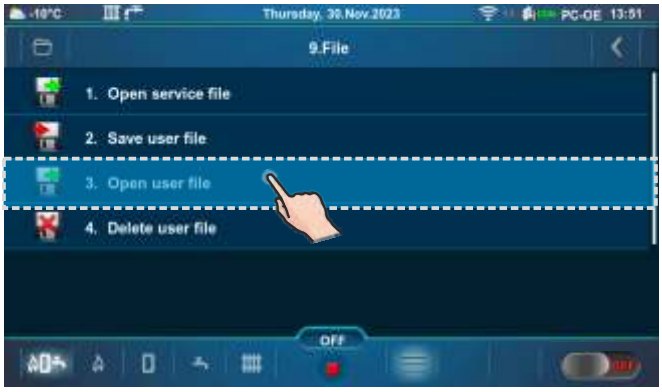
2 - Example of saving changes to an existing (active) file.



9.3. OPEN USER FILE

This option can be used to load saved settings from the user file. Appears only if "Save user file" has been done at least once. After pressing "Open user file" it is possible to choose and open user file (press the "Open" button). Press the "Cancel" button to return to the submenu. File which is active (selected) is marked with a green tick.

Example when multiple user files are saved and when was made a change in the active (selected) file.

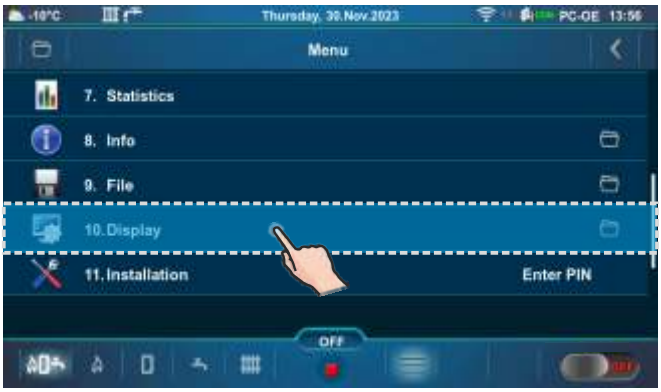


Active file (selected) is showed in menu 8.1. Software info.

9.4. DELETE USER FILE

After pressing "Delete user file" it is possible to choose and delete user file (press the "Delete" button). Press the "Cancel" button to return to the submenu.

10.0. DISPLAY

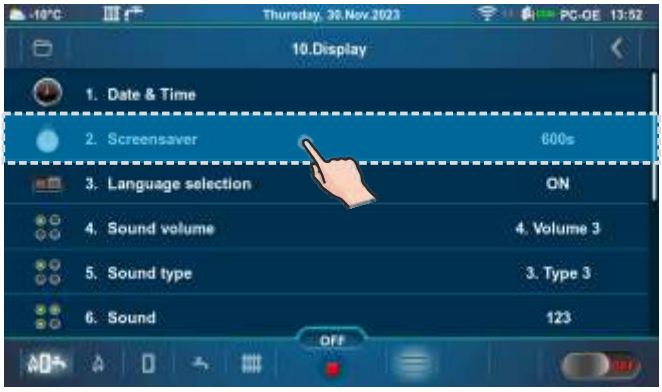


10.1. DATE & TIME

This option is used to set the date and time. Date and time information are necessary for operating programs, as well as for recording errors/warnings. Press "CONFIRM" button to save the settings. If the clock is late or reset to midnight, and the date is 01/01/2020, the battery must be changed (type CR1632). The clock may drift 2-3 minutes per month, which is normal. Periodic adjustment is recommended.

10.2. SCREENSAVER

If the screen is not pressed within the set time, the screensaver will be activated to protect the screen against screen burn. When the screen is touched, the screensaver will turn off.
Factory: 600 s
Possible selection: 10-3600 s

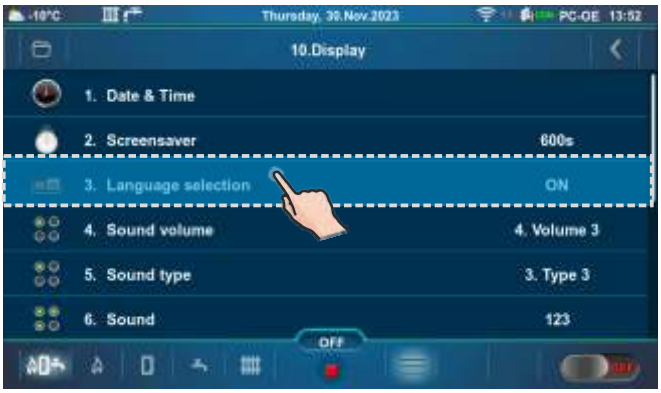


10.3. LANGUAGE SELECTION

This option enables or disables the display of the initial screen with the languages selection for controller when the "Main switch (0/1)" is activated. If option is disabled, after activating "Main switch (0/1)", the setting will appear in the predefined language and after a certain time the "Main screen (PC-OE)" will appear.

Factory: ON

Possible selection: ON, OFF



10.4. SOUND VOLUME

This option is used to set the speaker volume.

Factory: Volume 3

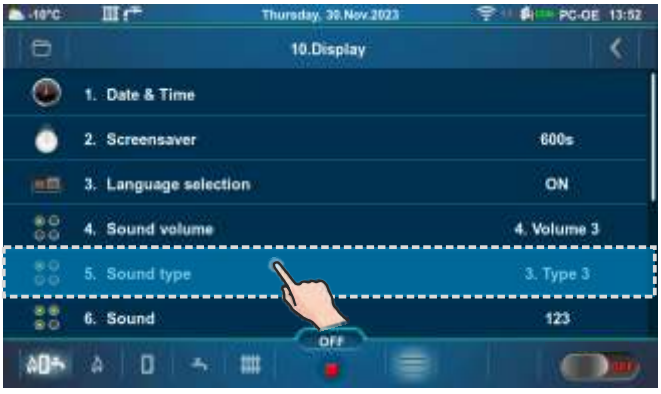
Possible selection: OFF, Volume 1, Volume 2, Volume 3

10.5. SOUND TYPE

This option is used to set sound type. It is possible to choose between 10 different types of sounds.

Factory: Type 3

Possible selection: Type 1 - Type 10



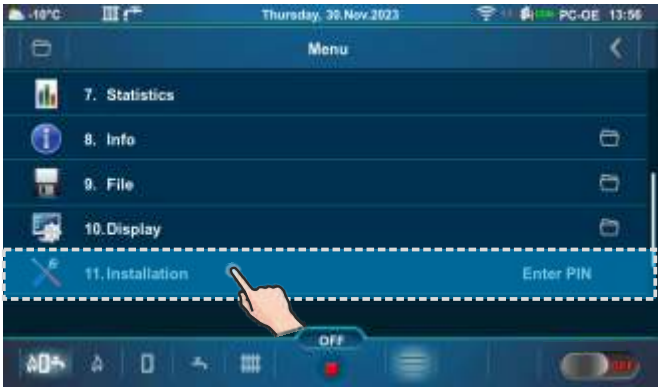
10.6. SOUND

This option is used to enable/disable the controller sound for display, warnings, errors.

Factory: DISPLAY, WARNINGS, ERRORS
Possible selection: DISPLAY, WARNINGS, ERRORS

11.0. INSTALLATION

MENU FOR AUTHORIZED SERVICE TECHNICIANS ONLY.



12.0. MALFUNCTION / IMPROPER BOILER OPERATION

12.1. SAFETY THERMOSTAT - boiler malfunction

The following error (E40 SAFETY THERMOSTAT) appears on the boiler controller screen the boiler behaves according to the description of the error E40. The cause of this error is too high water temperature in the boiler (above 104 °C) because the safety thermostat interrupts operation of the flue gas fan and pellet feeder screw if the boiler temperature exceeds the maximum permitted temperature (110 - 6 °C).

To reactivate the safety thermostat (STB), it is necessary to do the following:
- wait until the boiler temperature drops below 70 °C.
- unscrew and take off the safety thermostat lid (detail A).
- press the thermostat restart button (detail B).
- if the same problem occurs again during the first next boiler firing or if it occurs frequently, ask an advice from the authorized technician.

Figure: Safety thermostat

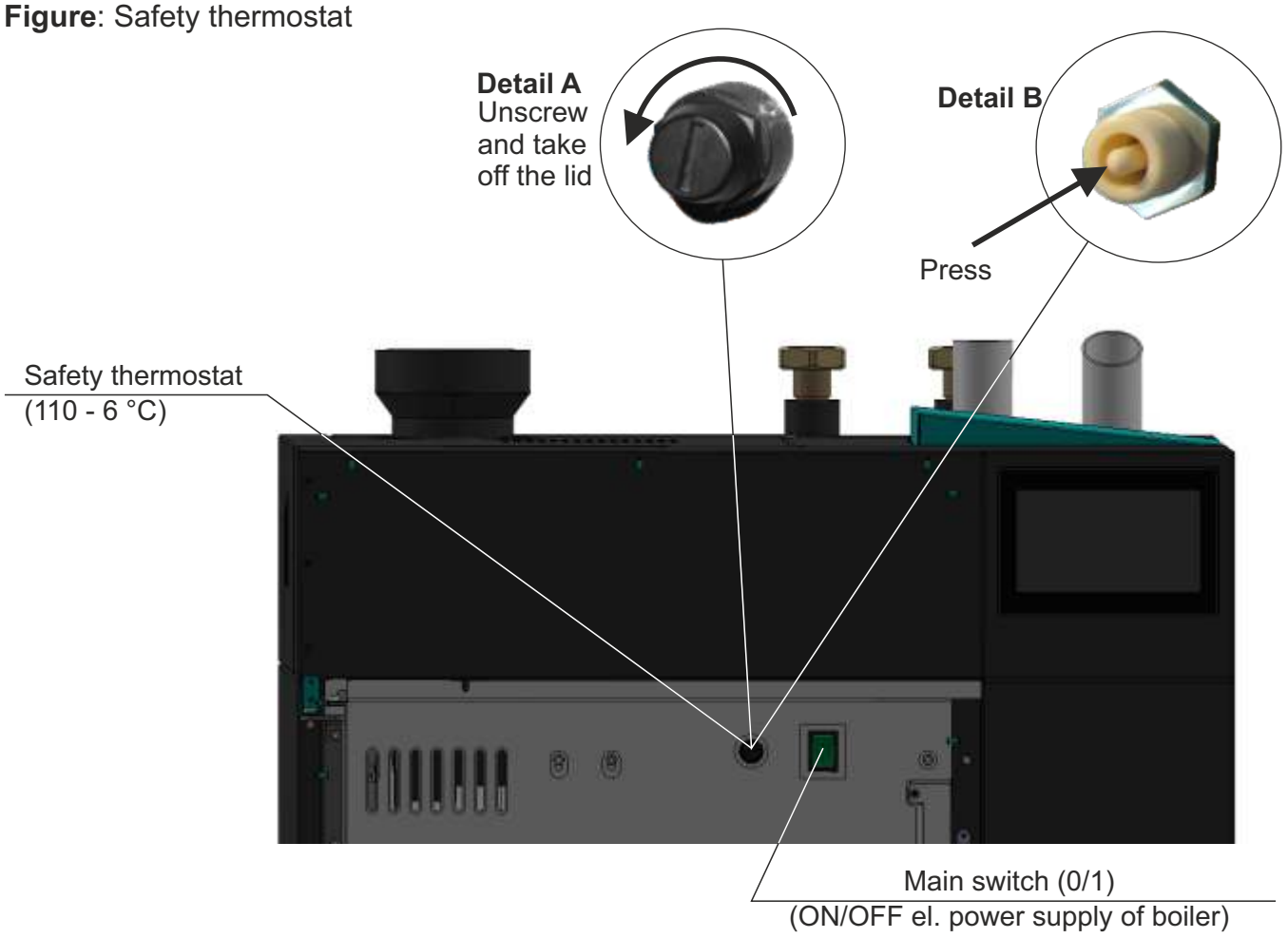


TABLE OF RESISTANCES OF
NTC 5K/25°C SENSOR
Measuring range from -20 to +130 °C
Used as:
Boiler temperature sensor,
DHW temperature sensor,
Main flow temperature sensor,
Return flow temperature sensor.

Temp. (°C)	Resistance (W)
-20	48.535
-15	36.465
-10	27.665
-5	21.158
0	16.325
5	12.694
10	9.950
15	7.854
20	6.245
25	5.000
30	4.028
35	3.266
40	2.663
45	2.184
50	1.801
55	1.493
60	1.244
65	1.041
70	876,0
75	740,7
80	629,0
85	536,2
90	458,8
95	394,3
100	340,0
105	294,3
110	255,6
115	222,7
120	190,7
125	170,8
130	150,5

TABLE OF RESISTANCES OF PT1000 SENSOR
Measuring range from -30 to +400 °C
Used as:
Flue gas temperature sensor

Temp. (°C)	Resistance (W)
-30	885
-25	904
-20	923
-15	942
-10	962
-5	981
0	1.000
5	1.019
10	1.039
15	1.058
20	1.077
25	1.096
30	1.116
35	1.135
40	1.154
45	1.173
50	1.193
55	1.212
60	1.231
65	1.250
70	1.270
75	1.289
80	1.308
85	1.327
90	1.347
95	1.366
100	1.385
105	1.404
110	1.424
115	1.443
120	1.462
125	1.481
130	1.501
135	1.520
140	1.539
145	1.558
150	1.578
155	1.597
160	1.161
165	1.635
170	1.655
175	1.674
180	1.693
185	1.712

Temp (°C)	Resistance (W)
190	1.732
195	1.751
200	1.770
205	1.789
210	1.809
215	1.828
220	1.847
225	1.866
230	1.886
235	1.905
240	1.924
245	1.943
250	1.963
255	1.982
260	2.001
265	2.020
270	2.040
275	2.059
280	2.078
285	2.097
290	2.117
295	2.136
300	2.155
305	2.174
310	2.194
315	2.213
320	2.323
325	2.251
330	2.271
335	2.290
340	2.309
345	2.328
350	2.348
355	2.367
360	2.386
365	2.405
370	2.425
375	2.444
380	2.463
385	2.482
390	2.502
395	2.521
400	2.540

OPERATION STAGES (SHOWN ON THE SCREEN)

IMPORTANT!
Automatic resumption of boiler operation after power failure (PF phases) is not possible if language selection option is turned ON.
To disable option "Language selection" see point "Language selection".

OFF	Boiler is switched off.
S0	Initial fan blowing, waiting for the grate initial position.
S1	Not used.
S2	Initial pellet filling.
S3	Waiting for flame to appear.
S4	Electric heater working after flame appears.
S5	Flame developing stage.
SP1	Stabilization stage 1.
SP2	Stabilization stage 2.
SP3	Stabilization stage 3.
S6	Additional flame developing stage.
D0	Power D0
D1	Power D1
D2	Power D2
D3	Power D3
D4	Power D4
D5	Power D5
D6	Power D6
S7	Shutdown stage.
S7-1	1st shutdown stage, waiting for the flame to disappear, after that stage S7-2 starts. The flue gas fan operates at the speed (rpm), which had before entering the S7-1 stage.
S7-2	2nd shutdown stage, which lasts the factory-set time. The flue gas fan operates at maximum speed. After this stage, cleaning of the grate begins and transition to stage S7-3.
S7-3	Burner do not work/standby/pause. Boiler waits demand for start.
PF0	Pf0 stage after power supply return, the electric heater activates and waits for the flame, flame appears -> PF1, there is no flame -> PF4.
PF1	Electric heater switches off and enters PF2.
PF2	Flame developing stage, enter PF3.
PF3	Waits for flame to disappear, enter PF4.
PF4	Final flue gas blowing, boiler restarts or enters OFF stage, depending of the stage when power supply failure occurs.
C0	Grate cleaning stage.

POWER MODULATION PRINCIPLE

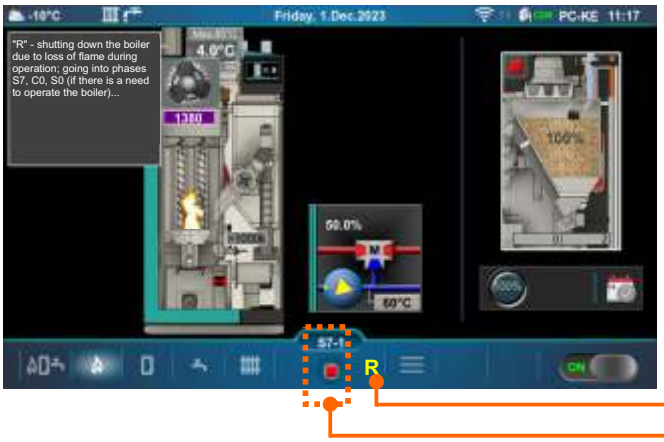
Modulation - power decrease:
D6==>**D5** (Tk=Tkmax – 6,0°C),
D5==>**D4** (Tk=Tkmax – 5,0°C),
D4==>**D3** (Tk=Tkmax – 4,0°C),
D3==>**D2** (Tk=Tkmax – 3,0°C),
D2==>**D1** (Tk=Tkmax – 2,0°C),
D1==>**D0** (Tk=Tkmax – 1,0°C),
D0==>**S7-1** (Tk=Tkmax)

Legend:
Tkmax - set boiler temperature
Tk - measured water temperature in the boiler
D0…D6, S7-1 - operating phases

Modulation - power increase:
D0==>**D1** (Tk=Tkmax – 1,0°C),
D1==>**D2** (Tk=Tkmax – 2,0°C),
D2==>**D3** (Tk=Tkmax – 3,0°C),
D3==>**D4** (Tk=Tkmax – 4,0°C),
D4==>**D5** (Tk=Tkmax - 5,0°C),
D5==>**D6** (Tk=Tkmax - 6,0°C)

MARKS ON THE SCREEN - the boiler goes into the shutdown phase, perform a certain activity and continues to operate if necessary

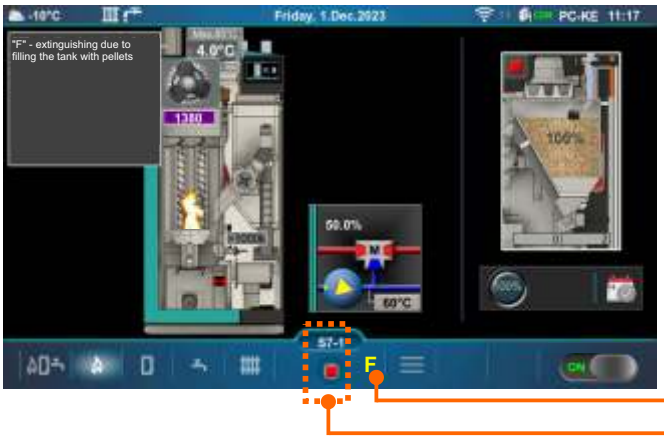
"R" - shutting down the boiler due to loss of flame during operation; going into phases S7-1, S7-2, C0, (S7-3), S0 (if there is a need to operate the boiler)...



"R" mark is blinking

Operating phases: S7-1, S7-2, C0, (S7-3).

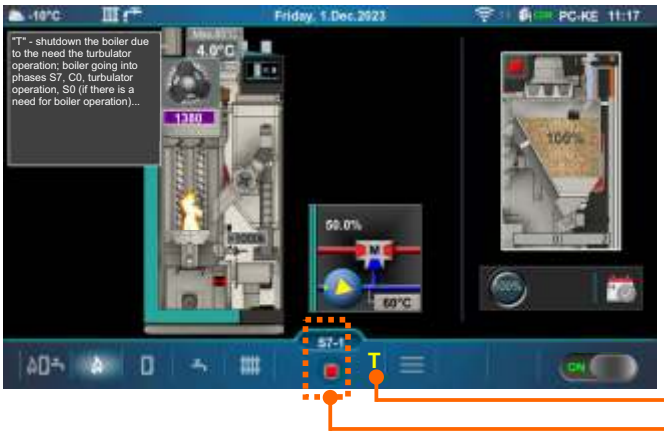
"F" - extinguishing due to filling the tank with pellets; boiler entering phases S7-1, S7-2, C0, (S7-3), (S0) (if there is a need to operate the boiler)...



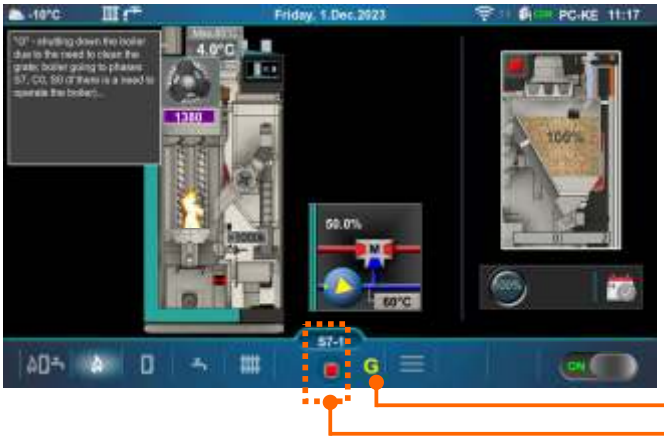
"F" mark is blinking

Operating phases: S7-1, S7-2, C0, (S7-3).

"T" - shutdown the boiler due to the need the turbulator operation; boiler going into phases S7, C0, turbulator operation, S0 (if there is a need for boiler operation)...



"G" - shutting down the boiler due to the need to clean the grate; boiler going to phases S7-1, S7-2, C0, (S7-3), (S0) (if there is a need to operate the boiler)...



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