

ENG

TECHNICAL INSTRUCTIONS

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



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

PelTec-Compact

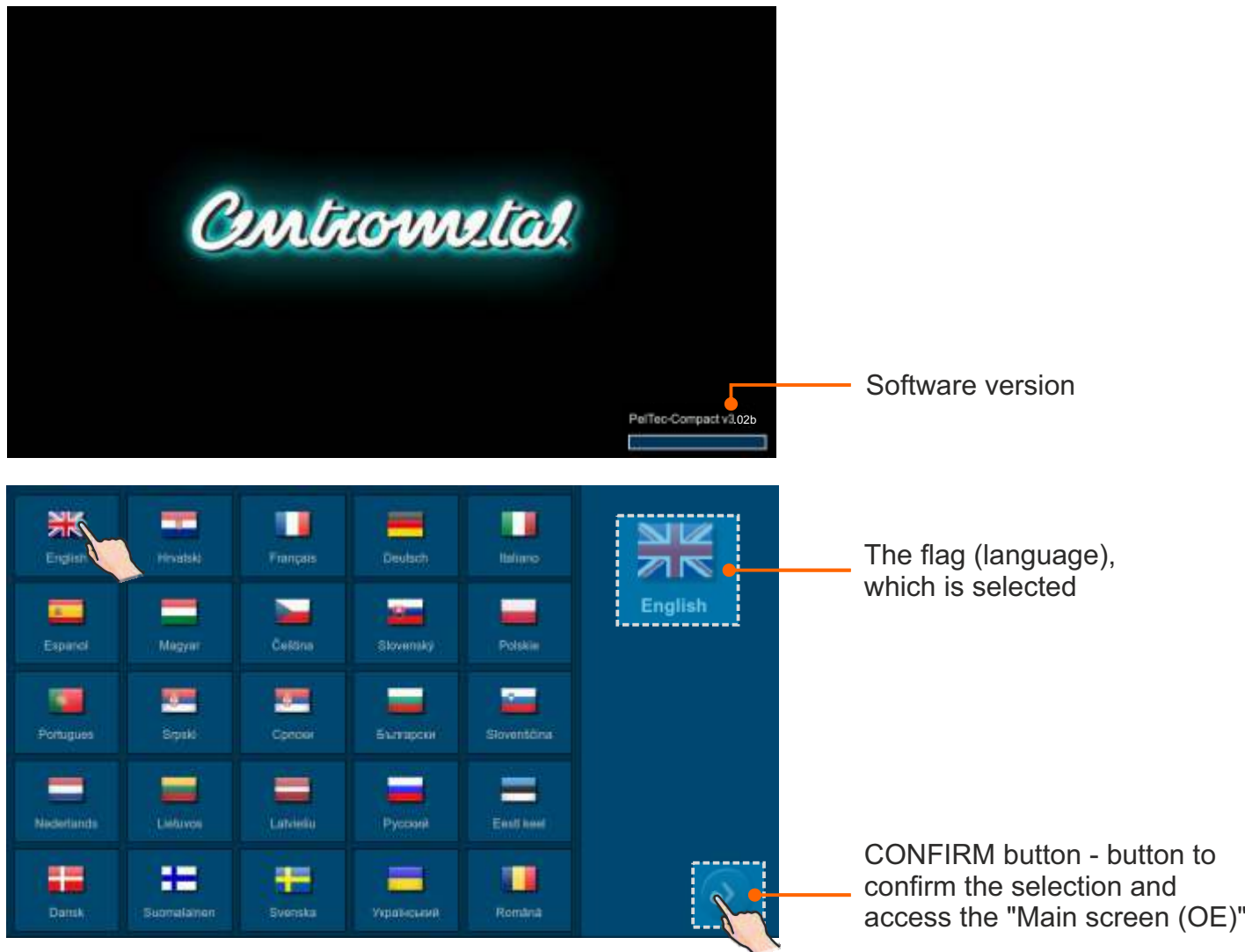
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SWITCHING ON THE CONTROLLER

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 (OE)".

INITIAL MESSAGE



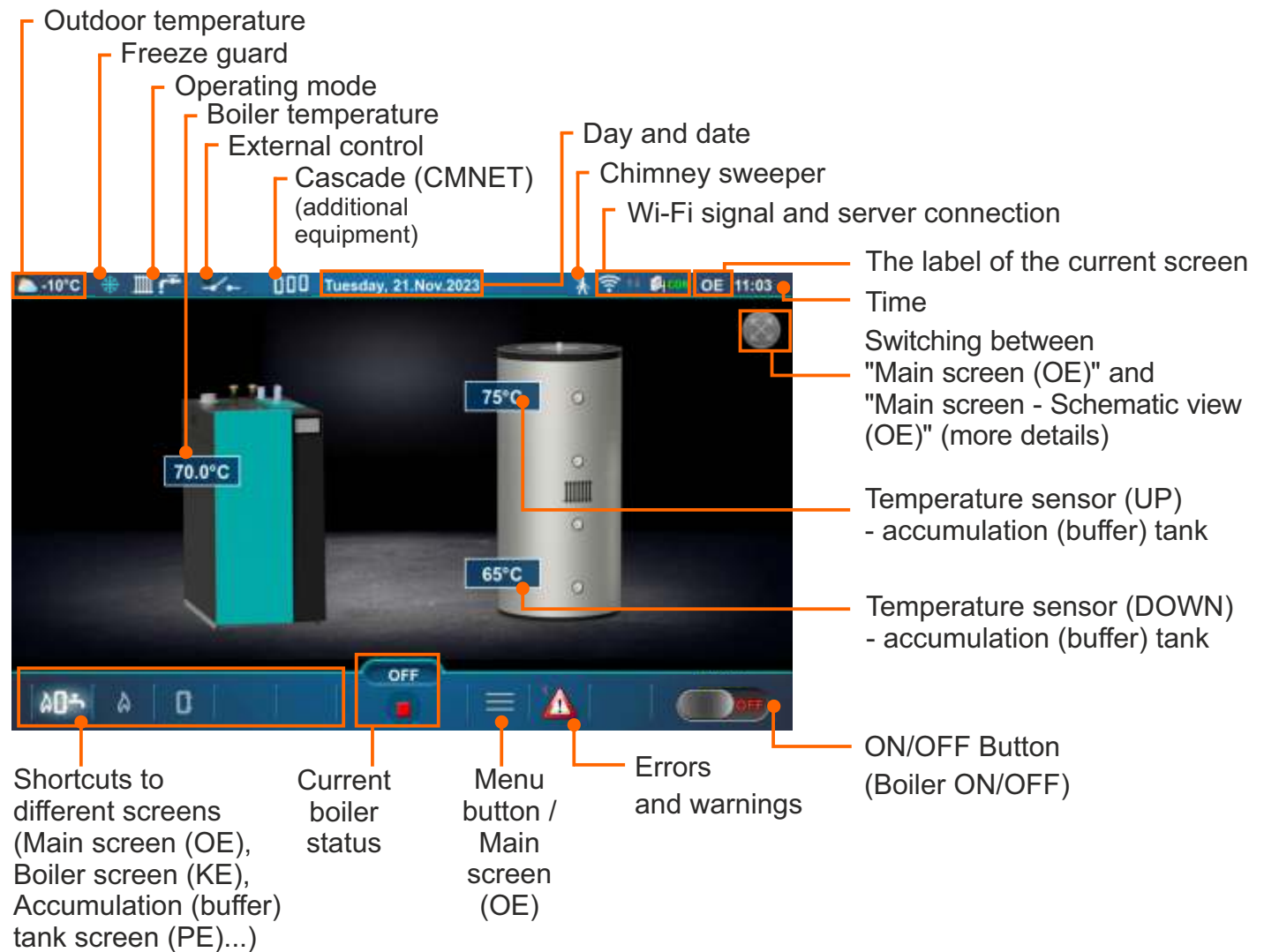
If you touch the screen when you switch on "Main switch (0/1)" ("Firmware update tool" will appear on the screen), the controller is in "Firmware update". This setting should be used only by authorized technician. If this happens, it is necessary to switch off "Main switch (0/1)" and switch it on again 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 (OE) AND MAIN MENU

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



Main screen (OE)



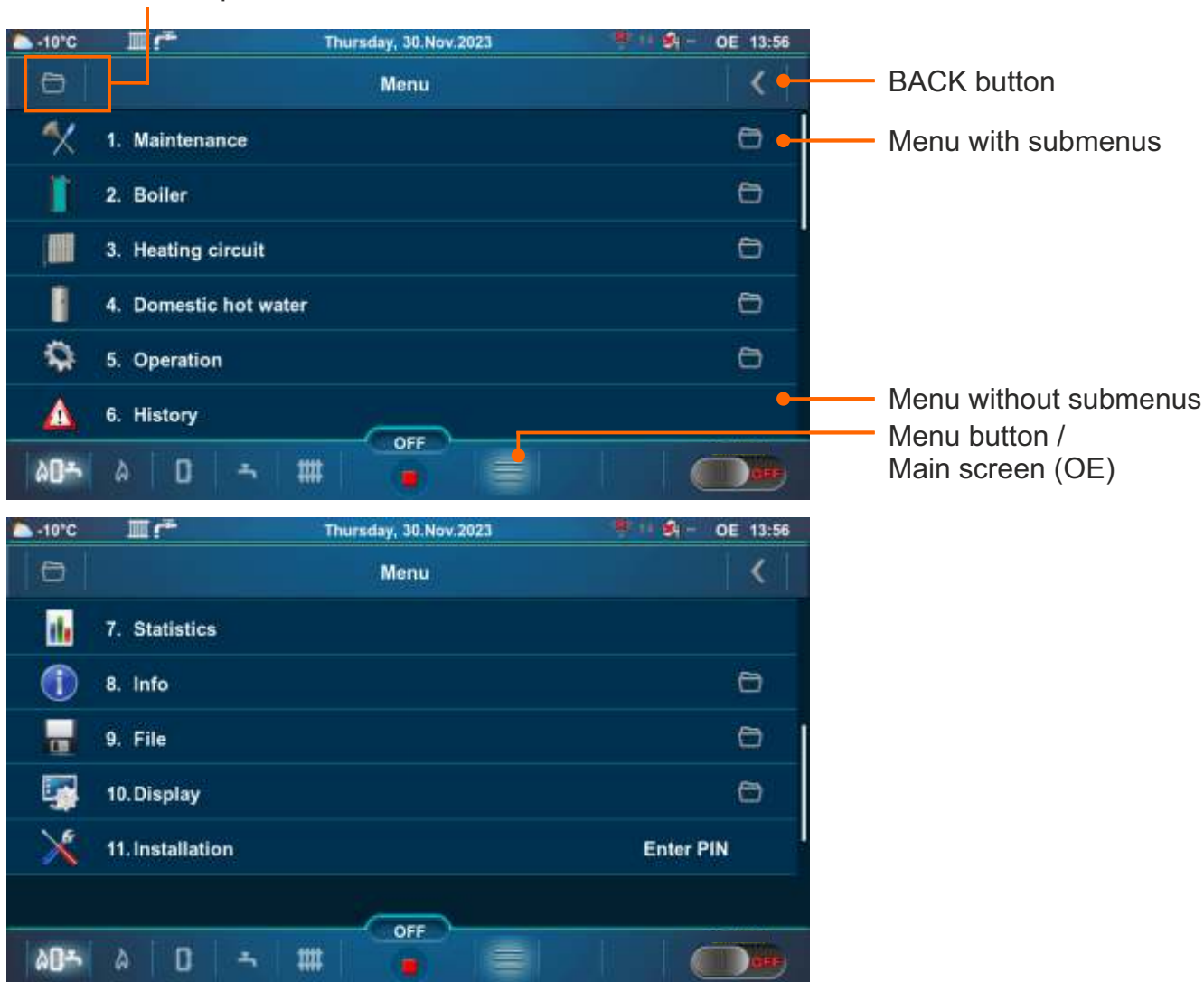
Main screen - Schematic view (OE)

Main screen (OE) and main menu

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 (OE)", press the "Menu button / Main screen (OE)" 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 wish to return.

Shortcut to the previous menu



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

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



Main screen (OE)



Main screen - Schematic view (OE)



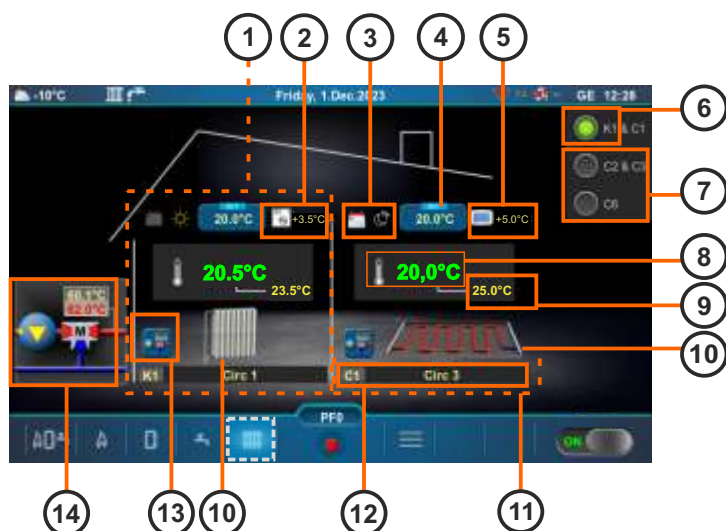
Boiler screen (KE)



Accumulation (buffer) tank screen (PE)



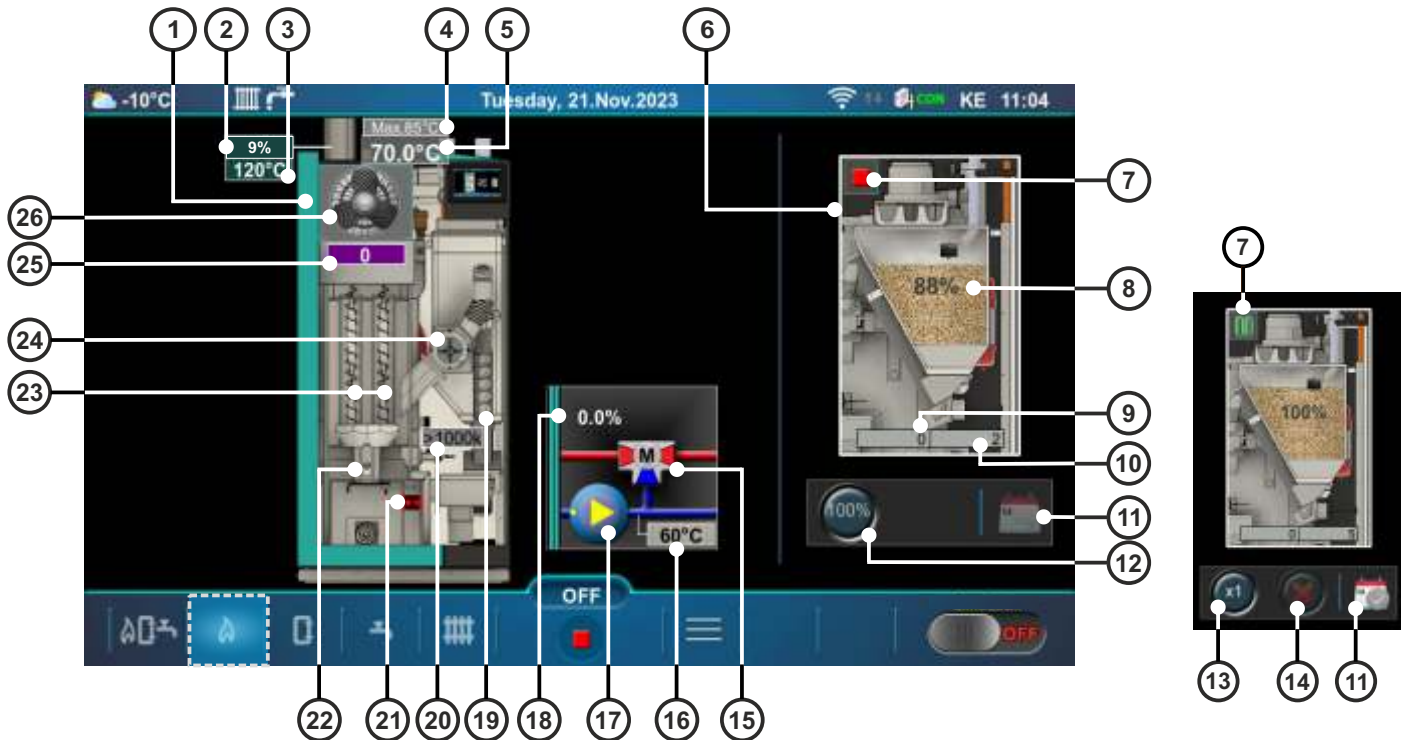
Domestic hot water (DHW) tank screen (SE)



Heating screen (GE)

- 1 - Heating circuit K1
- 2 - Room temperature corrected with room corrector (CSK) (additional equipment)
- 3 - Activated schedule of the day/night operation mode
- 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)
- 6 - Boiler circuit
- 7 - CM2K circuits (CM2K-additional equipment)
- 8 - Measured room temperature
- 9 - Set room temperature + correction
- 10 - Symbol of floor heating / radiator heating
- 11 - Heating circuit C1
- 12 - Heating circuit symbol ((K1, K2 - boiler circuits), (C1...C8 - CM2K circuits)) and custom selected heating circuit name
- 13 - Shortcut button - 3-way mixing valve with pump, main flow set temperature and measured temperature
- 14 - 3-way mixing valve with pump, main flow set temperature and measured temperature

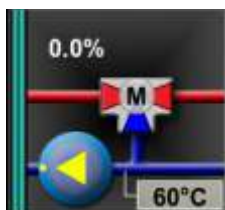
SYMBOLS ON THE BOILER SCREEN (KE)



- 1 - Boiler
- 2 - Measured O₂ (with lambda probe)
- 3 - Flue gas temperature
- 4 - Maximum boiler temperature
- 5 - 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 - Symbol 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 - 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)

SYMBOLS ON THE BOILER SCREEN (KE)

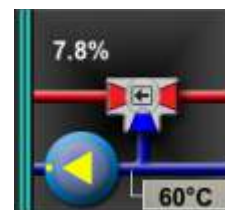
3-way mixing valve with actuator



Actuator does not work

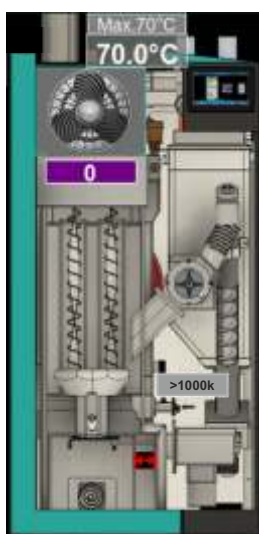


Actuator is opening the valve

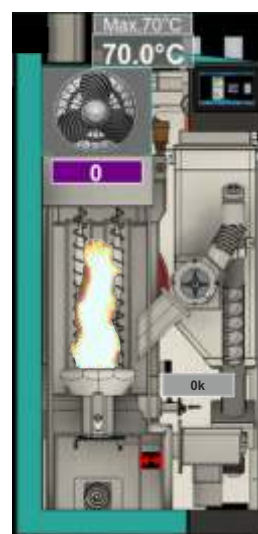


Actuator is closing the valve

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

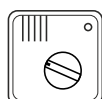
The following symbols are displayed on the controller screen



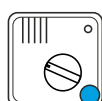
Pump (when the pump is operating, the symbol rotates, otherwise idle)



The pump has a work request (in the middle of 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).



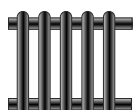
Room thermostat



Blue circle next to the room thermostat symbol (Room thermostat gives the request for the operation of the pump, the pump does not operate if all the conditions necessary for its operation are not met; for example: temperature in the boiler is too low, otherwise operates).



Digital room corrector



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



Two direct heating circuits



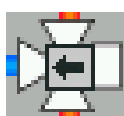
One direct heating circuit and one heating circuit with 3-way mixing valve



Outdoor temperature sensor



Temperature sensor



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



3-way diverter valve (indicates direction of flow)

CHANGING/ENTERING PARAMETERS



Press to increase/decrease the value



Button for multiplication change x1, x10, x100



Keyboard: Value entry

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 ashtray. 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 ashtray 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 "Air purge" 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.

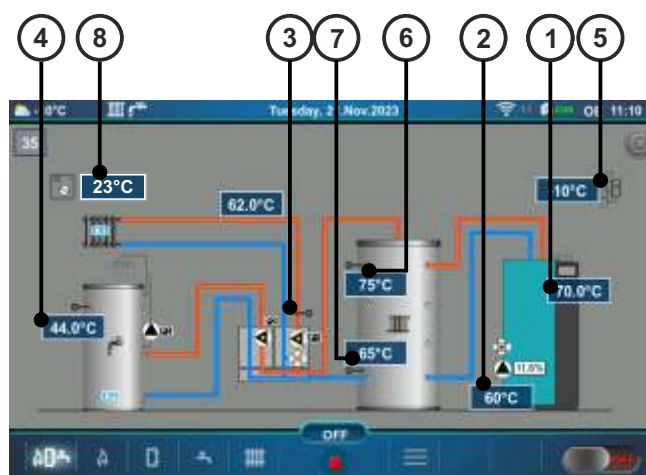
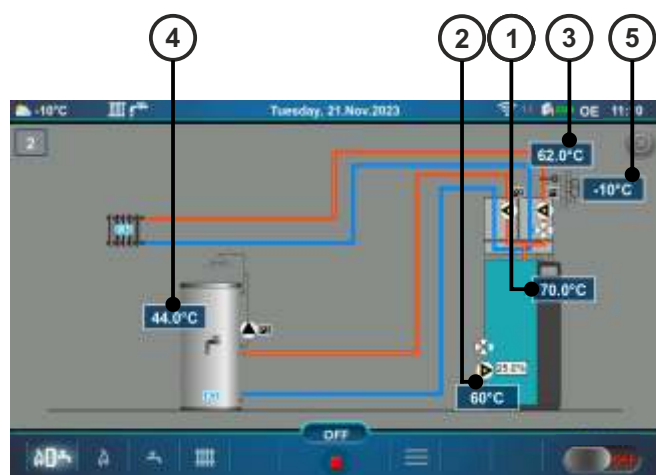


2.0. BOILER

2.1. TEMPERATURE



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

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

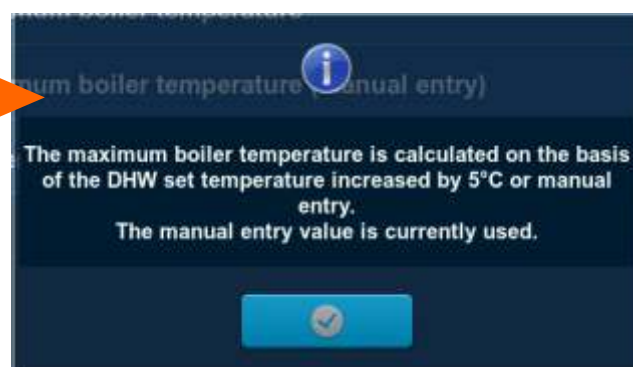
Maximum boiler temperature = The maximum boiler temperature is calculated on the basis of the DHW set temperature increased by 5°C - (calculated automatically) or manual entry. (see *Example of maximum boiler temperature setting: Configuration 2.)

Maximum boiler temperature (manual entry) = Manually selected maximum boiler temperature (see *Example of maximum boiler temperature setting: Configuration 2)

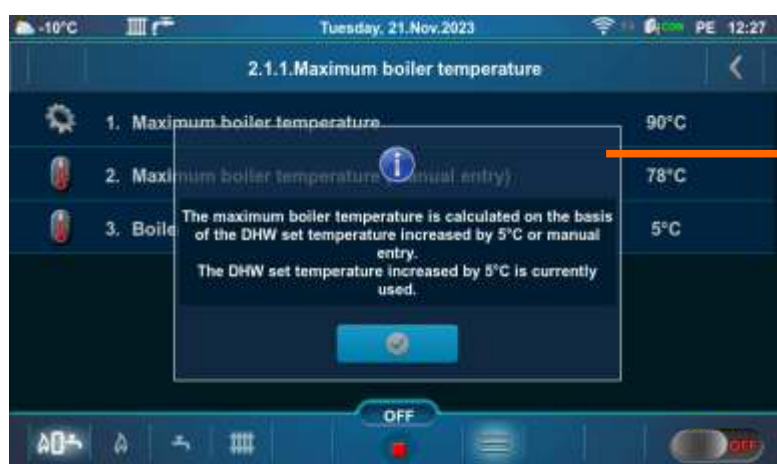
Boiler difference = Boiler temperature difference

*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.

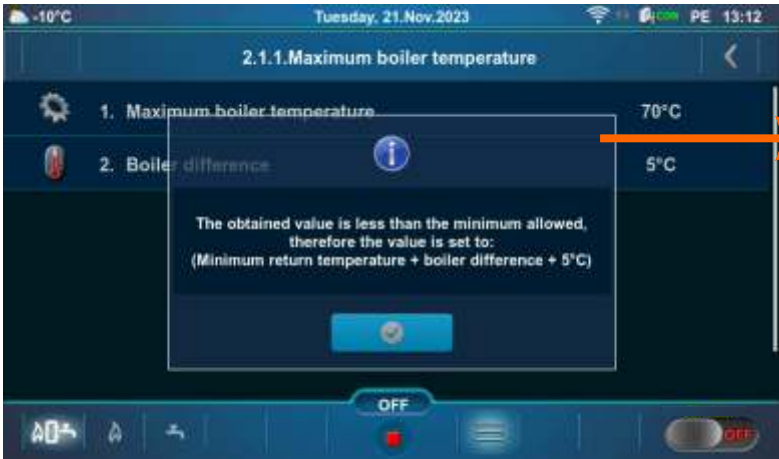
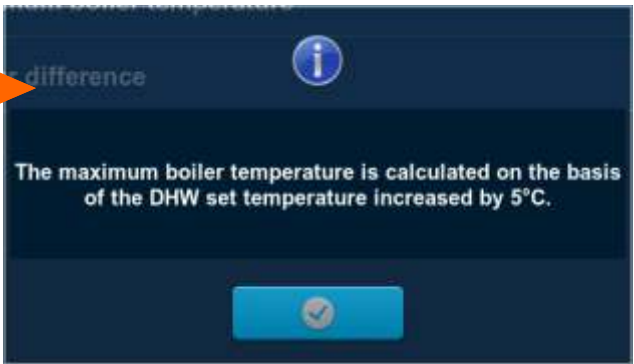
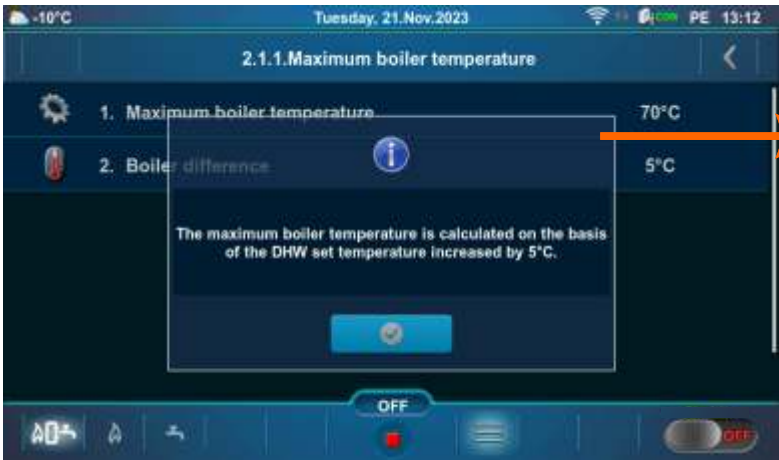
Temperature values (factory, minimum/maximum):

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

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) $\geq 65^{\circ}\text{C}$



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. Minimal buffer tank temperature	20	5 / 75	°C
5. Buffer tank temperature difference	10	5 / 40	°C
6. Stop buffer tank difference	5	3 / 30	°C

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

Minimal buffer tank temperature = The possibility of setting the desired minimum temperature of the buffer tank. When the temperature of the upper sensor in the buffer tank is lower than the set minimum temperature of the buffer tank, all central heating pumps connected to the boiler control are switched off but the DHW pumps can operate.

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)).

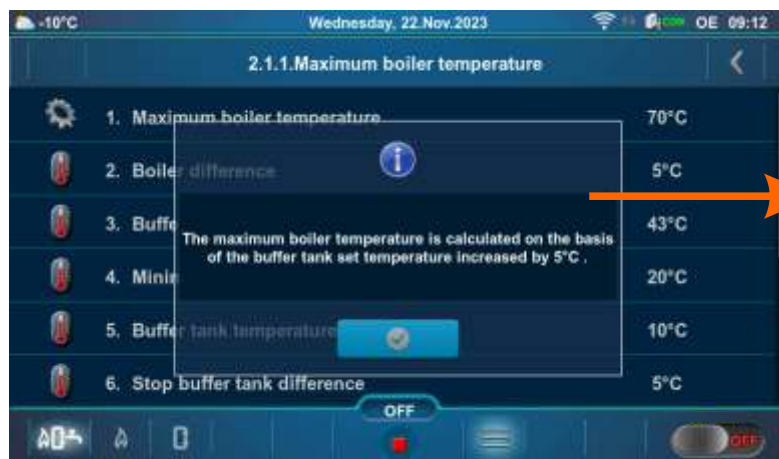
Stop buffer tank difference = Buffer tank shutdown temperature difference. If the difference between the set temperature of the buffer tank and the measured temperature of the buffer tank (measured on the lower (DOWN) sensor) is smaller than the set value "Stop buffer tank difference", the request for 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 $\geq 65^{\circ}\text{C}$:



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. Minimal buffer tank temperature	20	5 / 75	°C
5. Buffer tank temperature difference	10	5 / 40	°C
6. Stop buffer tank difference	5	3 / 30	°C

Maximum boiler temperature = The maximum boiler temperature is calculated on the basis 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

Minimal buffer tank temperature = The possibility of setting the desired minimum temperature of the buffer tank. When the temperature of the upper sensor in the buffer tank is lower than the set minimum temperature of the buffer tank, all central heating pumps connected to the boiler control are switched off but the DHW pumps can operate.

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).

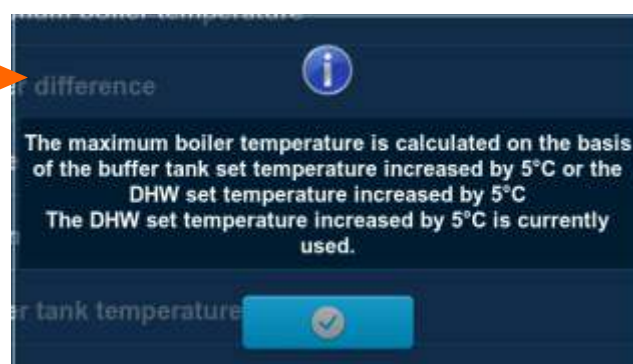
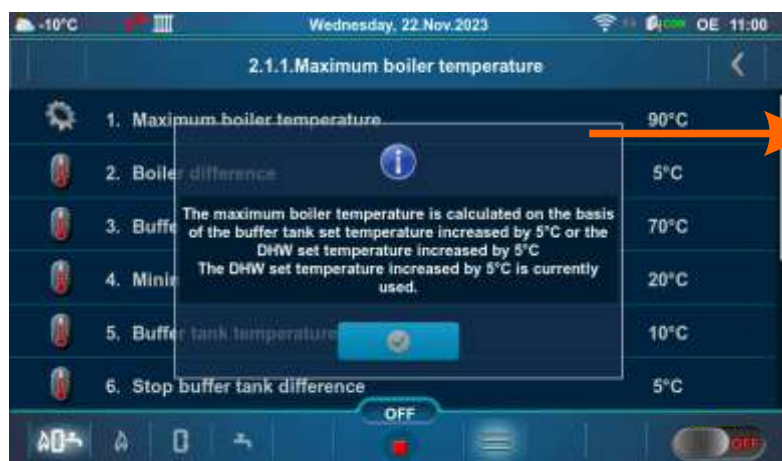
*Example of maximum boiler temperature setting: Configuration 13

1. Buffer tank temperature set to $\geq 65^{\circ}\text{C}$:

1a. Buffer tank temperature set to $\geq$ DHW set temperature

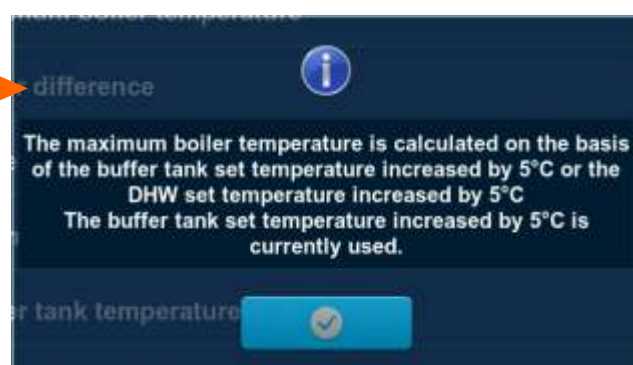


1b. Buffer tank temperature set to < DHW set temperature

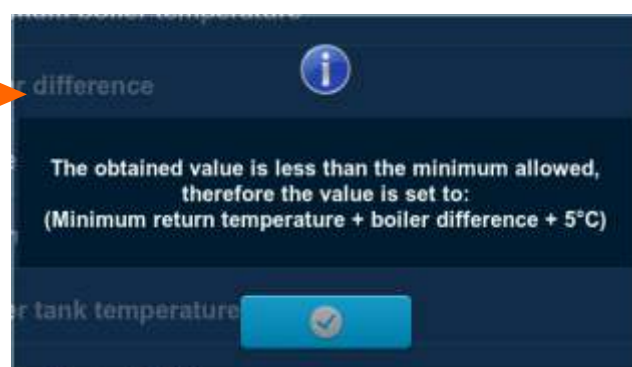
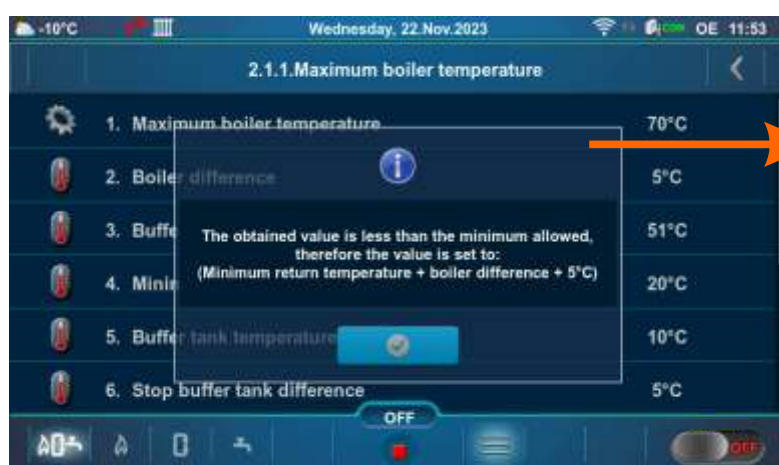
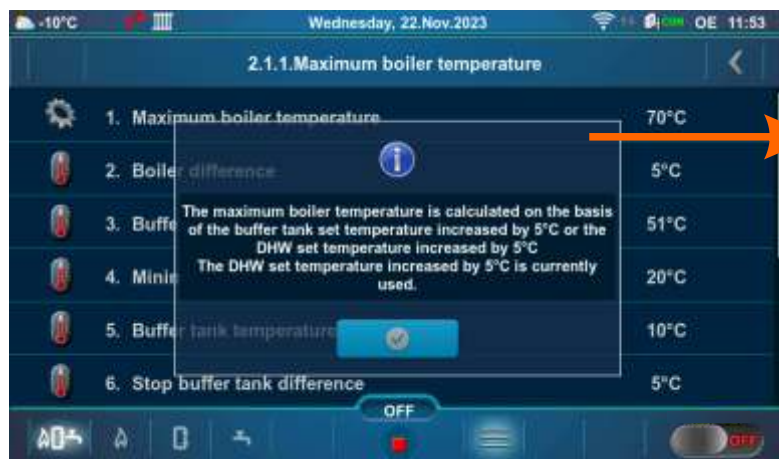


2. Buffer tank temperature set to <65°C:

2a. Buffer tank temperature set to $\geq$ 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. Minimal buffer tank temperature	20	5 / 75	°C
6. Buffer tank temperature difference	10	5 / 40	°C
7. Stop buffer tank difference	5	3 / 30	°C

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

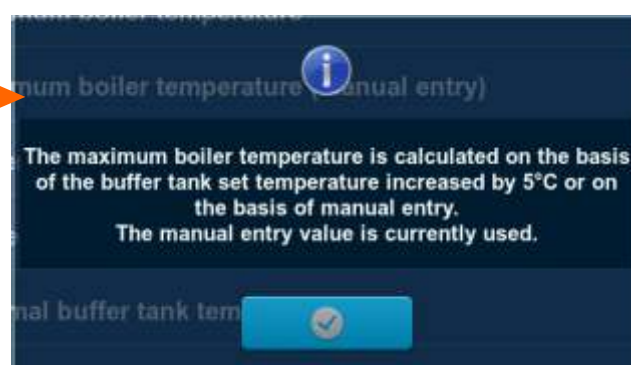
Minimal buffer tank temperature = The possibility of setting the desired minimum temperature of the buffer tank. When the temperature of the upper sensor in the buffer tank is lower than the set minimum temperature of the buffer tank, all central heating pumps connected to the boiler control are switched off but the DHW pumps can operate.

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:

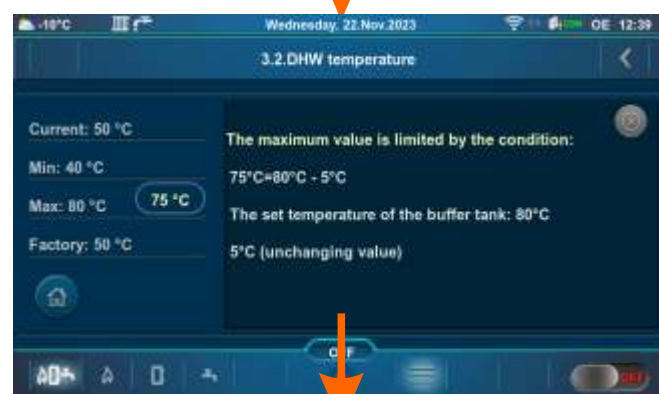
- example of changing the default buffer tank temperature



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

Example: Configuration 20,
Buffer tank temperature

Example: Configuration 43,
DHW temperature



The minimum value is limited by the condition:
 $55^{\circ}\text{C} = 50^{\circ}\text{C} + 5^{\circ}\text{C}$
 The set temperature of DHW(K1): 50°C
 5°C (unchanging value)

The maximum value is limited by the condition:
 $75^{\circ}\text{C} = 80^{\circ}\text{C} - 5^{\circ}\text{C}$
 The set temperature of the buffer tank: 80°C
 5°C (unchanging value)

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

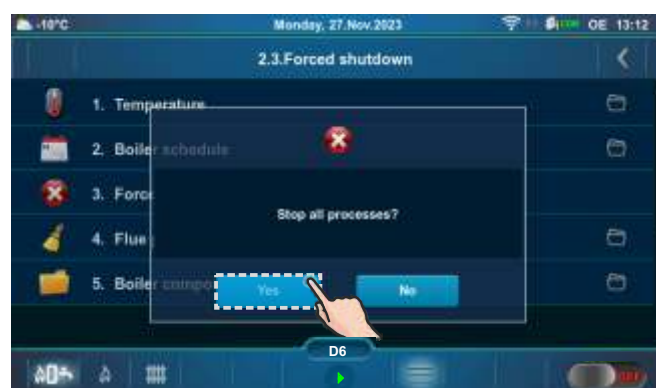


It is possible to set 5 activations and 5 deactivations of the boiler (T1-T5) for each day of the week. In the table, the time when the boiler is operating is marked in green and the time when the boiler is not operating is marked in red. It is possible to set the operating times for one day and copy 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 a.m. to 04:59 a.m., from 09:16 a.m. to 13:59 p.m., from 18:01 p.m. to 18:59 p.m. and from 10:01 p.m. to 23:59 p.m. the boiler will not operate. The schedule for Monday is copied to Tuesday, Wednesday, Thursday and Friday.

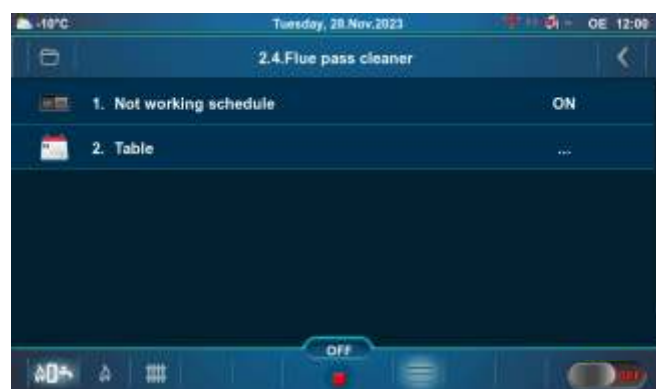
2.3. FORCED SHUTDOWN

"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. FLUE PASS CLEANER



"Flue pass cleaner" option is used to prevent the operation of the flue pass cleaner (for example during the night to avoid noise). During the time period set in the table, cleaning of the flue passages is disabled. Schedules can be set in the same way as in the "Table 1, Table 2, Table 3".

2.4.1. NOT WORKING SCHEDULE

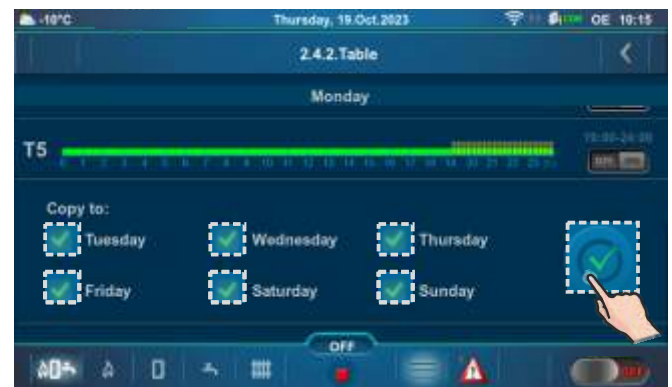
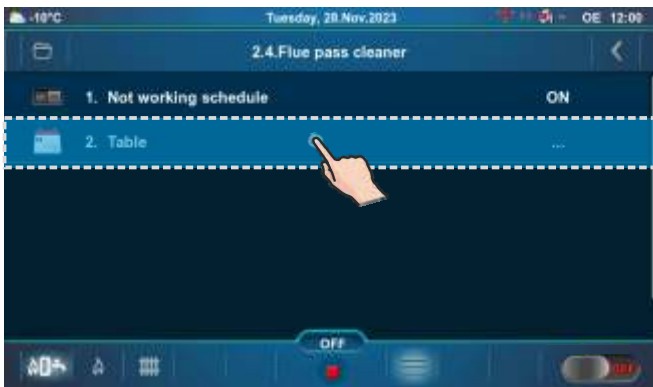
"Not working schedule" option allows activation or deactivation of the boiler operating schedule.

Factory: ON

Possible selection: ON, OFF



2.4.2. TABLE



(yellow)  Cleaning of flue pass is not allowed

 Cleaning of flue pass is allowed

In the table it is possible to set 5 activations and 5 deactivations for cleaning the flue passages (T1-T5) for each day of the week. In the table, the time when cleaning of flue passages will not be carried out is marked in yellow, and the time when cleaning of smoke passages is carried out is marked in green. It is possible to define a Not working schedule table 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 Mondays from 00:00 a.m. to 07:00 a.m. and from 19:00 p.m. to 24:00 flue pass cleaning is not allowed. This means that flue pass cleaning will be carried out only between 7:01 a.m. and 6:59 p.m. The schedule for Monday is copied to Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday.

2.5. BOILER COMPONENTS

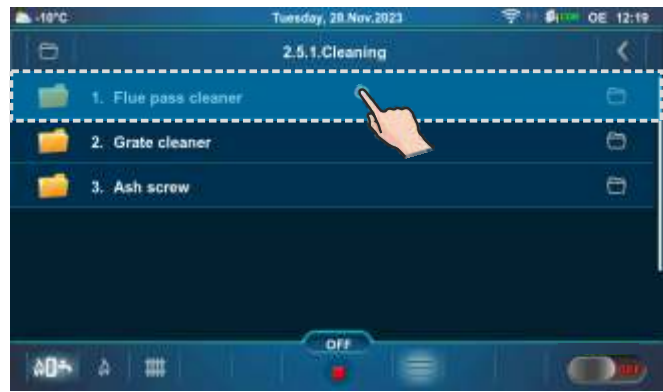
This submenu allows only an overview.



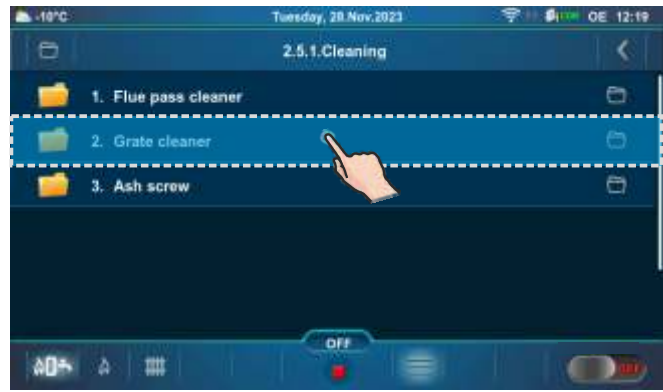
2.5.1. CLEANING



2.5.1.1. FLUE PASS CLEANER



2.5.1.2. GRATE CLEANER



2.5.1.3. ASH SCREW



2.5.1.3.2. 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).

2.5.1.3.3. 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).



Below are the configurations, which have heating circuits.

Values for configuration: 1, 2, 14, 18, 21, 22, 25, 33, 34, 35.

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

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

	Factory:	Min/Max	Unit
1. Day room temperature	20.0	5.0 / 30.0	°C
2. Night room temperature	20.0	5.0 / 30.0	°C
3. Heating curve	1.0	0.1 / 4.0	

Day room temperature - Setting the daily temperature of the room
Night room temperature - Setting the night temperature of the room
Heating curve - Setting the heating curve

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

Values for configuration: 3, 23, 24, 28, 29, 36, 37.

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

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

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

(K1) Circ 1	Factory:	Min/Max	Unit
1. Day room temperature	20.0	5.0 / 30.0	°C
2. Night room temperature	20.0	5.0 / 30.0	°C
3. Heating curve	1.0	0.1 / 4.0	

Day room temperature - Setting the daily temperature of the room

Night room temperature - Setting the night temperature of the room

Heating curve - Setting the heating curve

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

Values for configuration: 4, 5, 6, 15, 19, 26, 27, 32, 38, 39, 40.

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

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

Values for configuration: 7, 30, 31, 41, 42.

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

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

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

3.5.-3.6. TABLE 1, TABLE 2



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 a.m. to 02:15 a.m., 6:00 a.m. to 10:15 a.m., 11:45 a.m. to 01:30 p.m., 03:15 p.m. to 04:15 p.m. and 07:45 p.m. to 12:00 p.m. it is set Day room temperature mode. Night room temperature mode schedule is set from 02:16 a.m to 05:59 a.m., 10:16 a.m. to 11:44 a.m., 01:31 p.m to 15:14 p.m., 04:16 p.m. to 07:44 p.m. The schedule for Monday is copied to Tuesday. Other days have set Night room temperature mode from 00:00 to 05:59 a.m., 10:01 p.m. to 12:00 p.m. and Day room temperature mode from 06:01 a.m. to 10:00 p.m.

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 the 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
DHW schedule	OFF	OFF/Table 1
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)

DHW schedule - Domestic hot water schedule

Recirculation - Hot water circulation option from the hot water source to the point of hot water 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

Domestic hot water (DHW)

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

	Factory:	Possible selection:
(K1) Circ 1	ON	ON / OFF
DHW schedule	OFF	OFF/Table 1
Recirculation	ON	ON / OFF
Recirculation schedule	OFF	ON / OFF

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

DHW schedule - Domestic hot water schedule

Recirculation - Hot water circulation option from the hot water source to the point of hot water consumption

Recirculation schedule - Setting the recirculation schedule

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

DHW temperature - Setting the domestic hot water temperature

DHW difference - Possibility of setting the temperature difference of DHW

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 - Heating circuit 1 (DHW)

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

(K1) Circ 1, (K2) Circ 2	Factory:	Min/Max	Unit
1. DHW temperature	50	40 / 85	°C
2. DHW difference	5	4 / 40	°C

DHW temperature - Setting the domestic hot water temperature

DHW difference - Possibility of setting the temperature difference of DHW

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

DHW schedule - Domestic hot water schedule

Recirculation - Hot water circulation option from the hot water source to the point of hot water consumption

Recirculation schedule - Setting the recirculation schedule

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 - Heating circuit 1 (DHW)

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

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

DHW temperature - Setting the domestic hot water temperature

DHW difference - Possibility of setting the temperature difference of DHW

(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:
DHW schedule	OFF	OFF / Table 1
Recirculation	ON	ON/OFF
Recirculation schedule	OFF	ON/OFF

DHW schedule - Domestic hot water schedule

Recirculation - Hot water circulation option from the hot water source to the point of hot water consumption

Recirculation schedule - Setting the recirculation schedule

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

Recirculation - Hot water circulation option from the hot water source to the point of hot water consumption
Recirculation schedule - Setting the recirculation schedule

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

Recirculation Time On - Operating time of the recirculation pump

Recirculation Time Off - Time when recirculation pump is not operating

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 - Heating circuit 1 (DHW)

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

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

DHW temperature - Setting the domestic hot water temperature

DHW difference - Possibility of setting the temperature difference of DHW

(K1) Circ 1	Factory:	Possible selection:
DHW schedule	OFF	OFF / Table 1
Recirculation	ON	ON / OFF
Recirculation schedule	OFF	ON / OFF

DHW schedule - Domestic hot water schedule

Recirculation - Hot water circulation option from the hot water source to the point of hot water consumption

Recirculation schedule - Setting the recirculation schedule

(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:
DHW schedule	OFF	OFF/Table 1/Table 2

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

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

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

DHW schedule - Domestic hot water schedule

Recirculation - Hot water circulation option from the hot water source to the point of hot water consumption

Recirculation schedule - Setting the recirculation schedule

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

DHW temperature - Setting the domestic hot water temperature

DHW difference - Possibility of setting the temperature difference of DHW

Domestic hot water (DHW)

Selection and possible values for configuration: 43.

	Factory:	Possible selection:
(K1) Circ 1	ON	ON / OFF
DHW schedule	OFF	OFF/ Table 1
Recirculation	ON	ON / OFF
Recirculation schedule	OFF	ON / OFF

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

DHW schedule - Domestic hot water schedule

Recirculation - Hot water circulation option from the hot water source to the point of hot water consumption

Recirculation schedule - Setting the recirculation schedule

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

DHW temperature - Setting the domestic hot water temperature

DHW difference - Possibility of setting the temperature difference of DHW

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 - Heating circuit 1 (DHW)

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

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

DHW temperature - Setting the domestic hot water temperature

DHW difference - Possibility of setting the temperature difference of DHW

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

DHW schedule - Domestic hot water schedule

Recirculation - Hot water circulation option from the hot water source to the point of hot water consumption

Recirculation schedule - Setting the recirculation schedule

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.

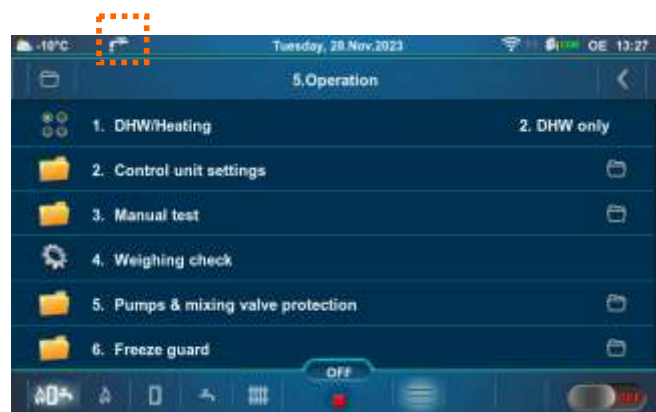
Factory: DHW+Heating

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).



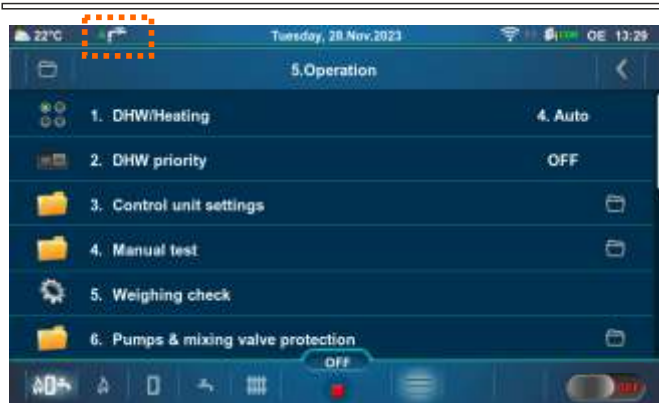
Heating only - boiler operates only when there is demand for heating.



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 $\geq 20^{\circ}\text{C}$ for more than 30 minutes.



If the outdoor temperature is $<(20-3)^{\circ}\text{C}$ for more than 30 minutes.

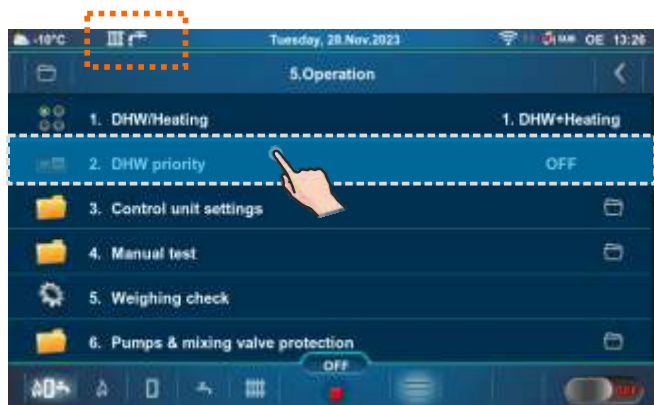
5.2. DHW PRIORITY

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.

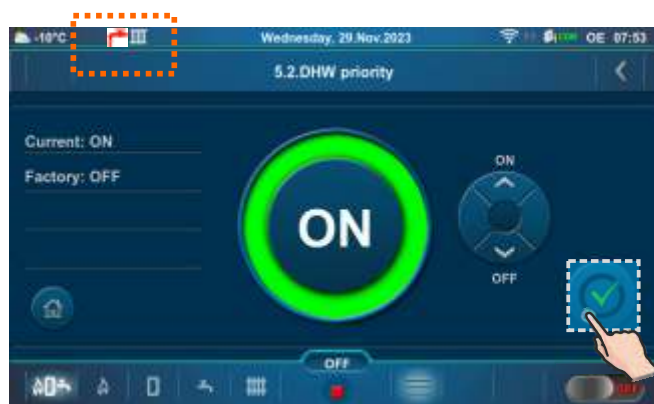


Possible choice: OFF, ON

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 ECS.

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.



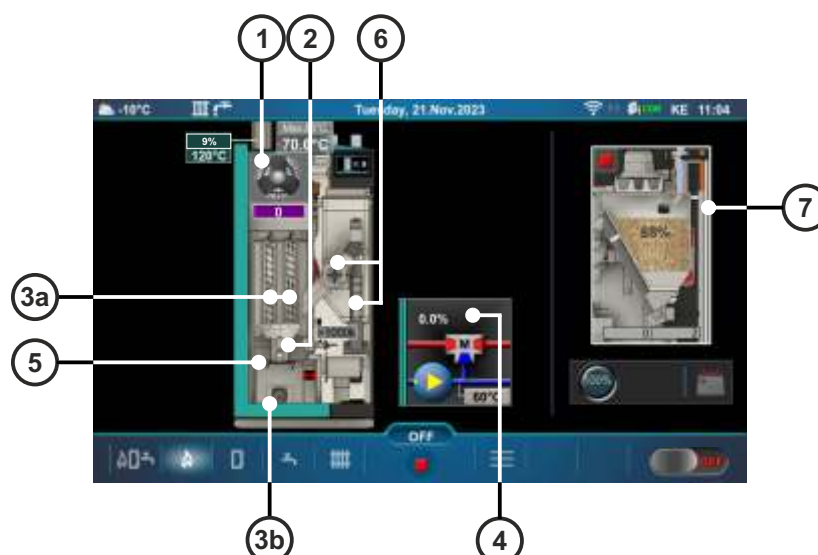
5.4. MANUAL TEST

"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.



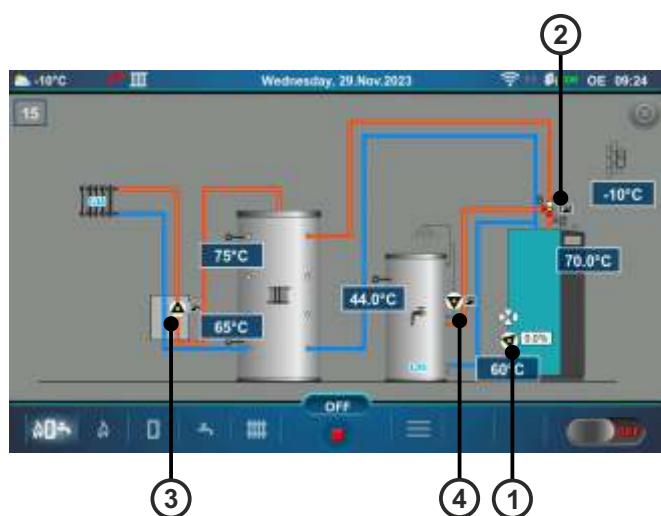
MANUAL TEST IS POSSIBLE ONLY WHEN THE BOILER IS SWITCHED OFF.



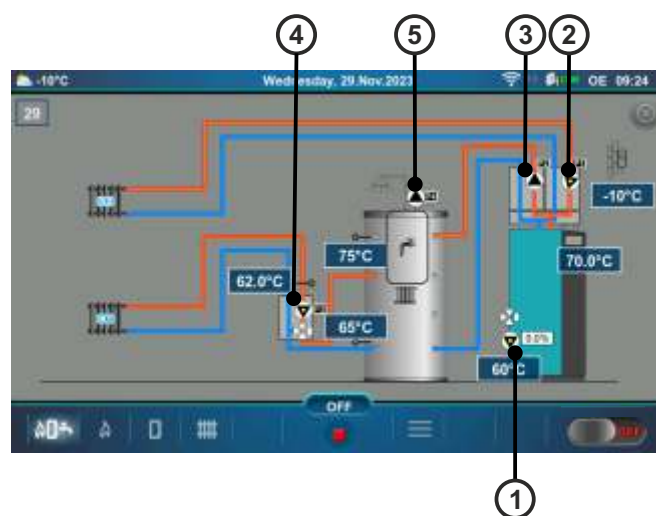
Parts of the boiler that can be tested manually:

- 1 - Fan
- 2 - Electric heater
- 3a - Flue pass 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 (OE)" with pumps and valves, which can be manually tested.



- Left "Main Screen - Schematic View (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 (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)
 - 5 - P4 - Recirculation DHW

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.



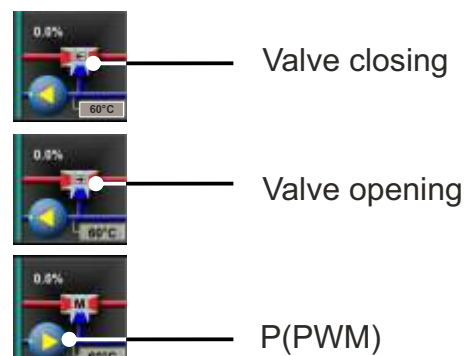
5.4.3. CLEANING

This option allows you to check the operation of the flue pass 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). Press the "ON" button next to the "Grate cleaner" and check if the motor device moves the burner grate. Every time you press the "ON" button, it lights up green. By pressing the "OFF" button the motor will return a burner grate to the working position, the burner grate is closed. When the grate arrives in one of the two final positions, on the screen is displayed  symbol.



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



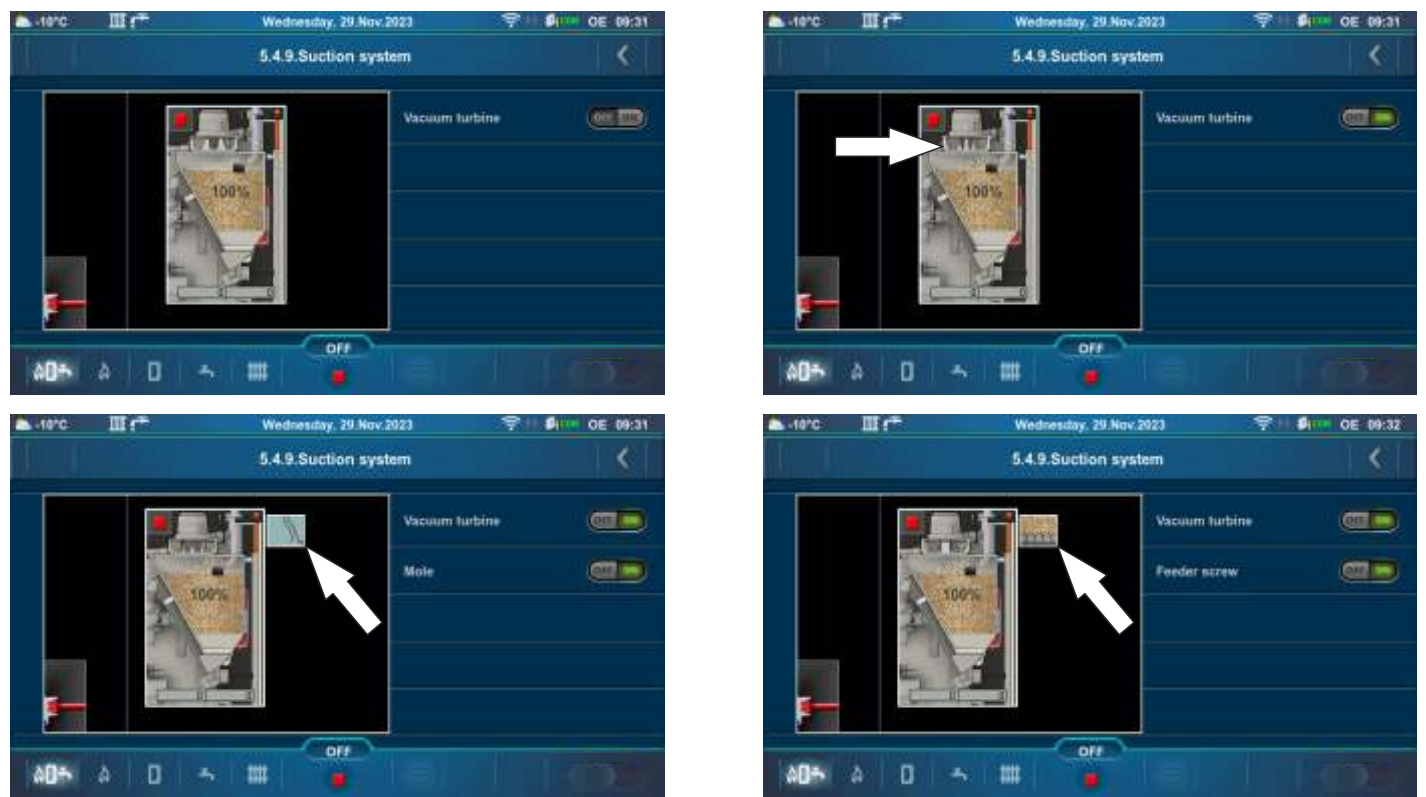
5.4.8. K1 - 3-WAY VALVE (If exists in configuration)

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.



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

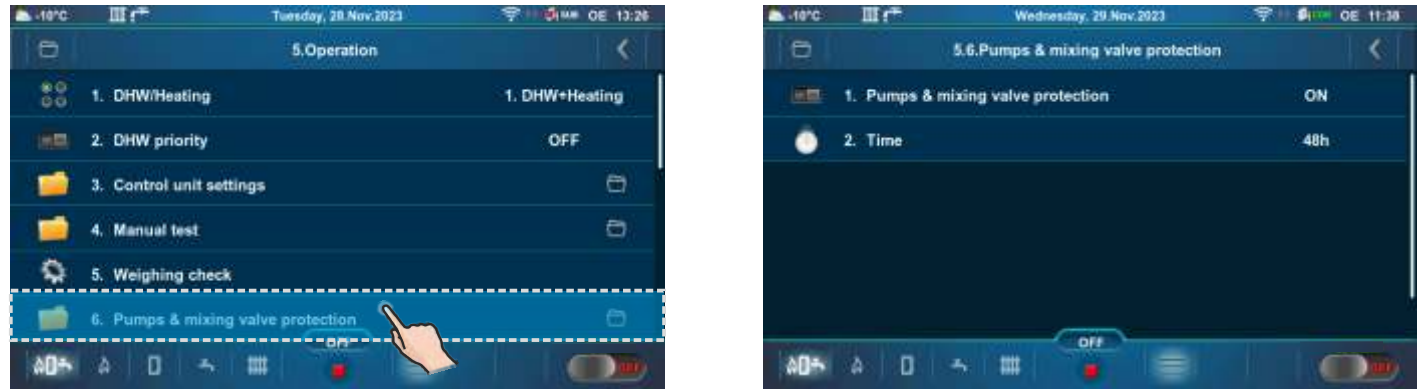


This option allows you to check the quantity of supplied pellets. It is possible to adjust the operating time of the feeder screw after which you want to weigh the pellets. The screen displays the "Factory weighing" and the "Last weighing" which can be carried out by an authorized service technician (if weighing has been carried out, otherwise the "Factory weighing" and the "Last weighing" are the same). In order for the weighing to be as accurate as possible, it is necessary to repeat the weighing at least 3 times.

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.

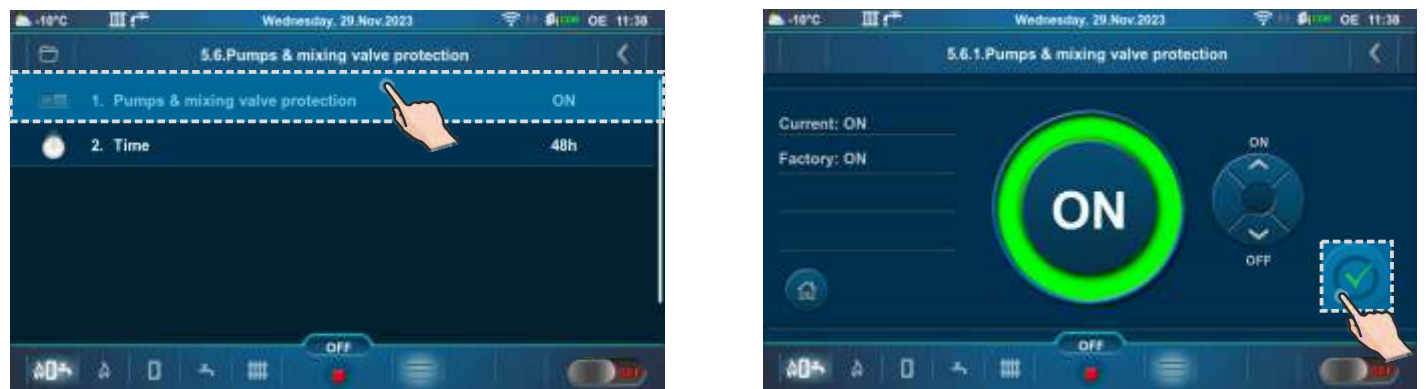


5.6.1. PUMPS & MIXING VALVE PROTECTION

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.

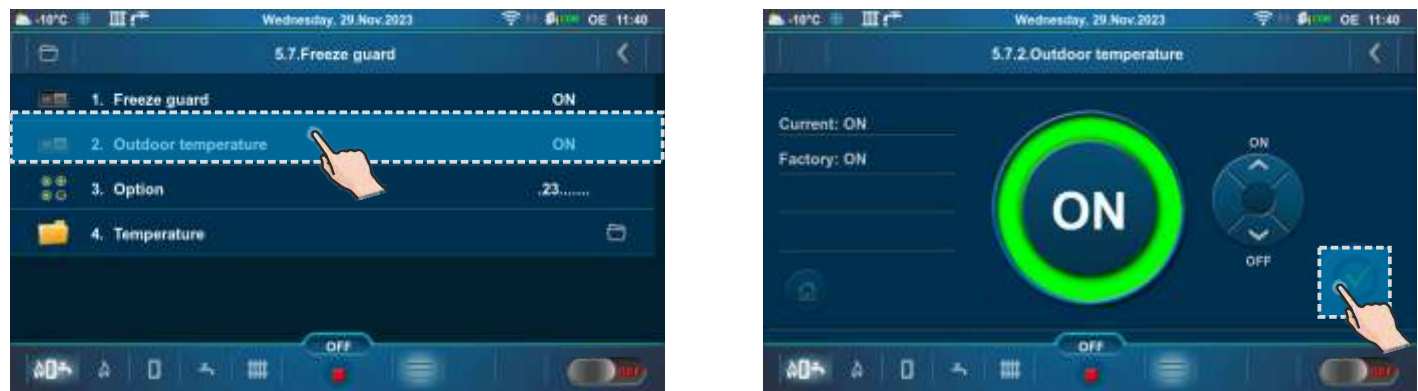
Factory: OFF

Possible selection: ON, OFF



5.7.2. OUTDOOR TEMPERATURE

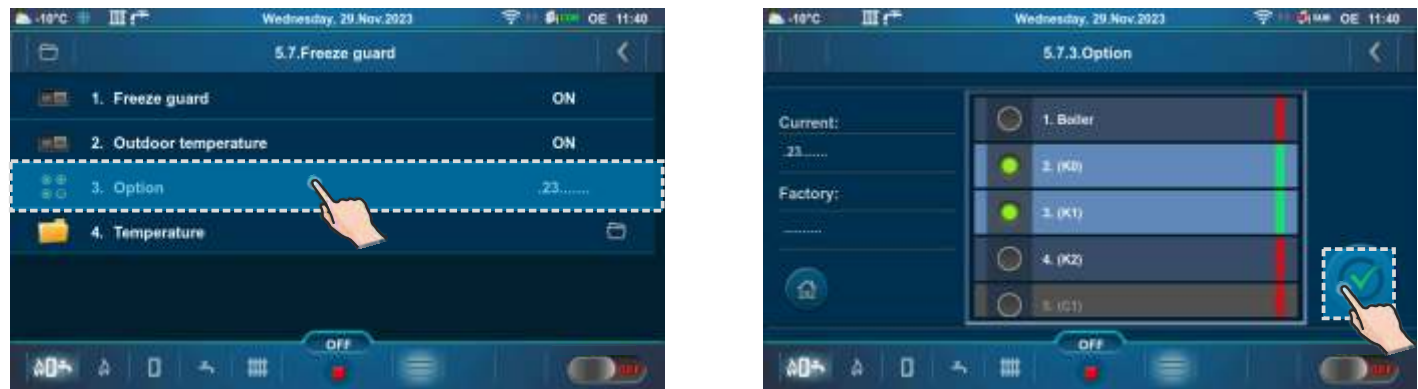
Outdoor temperature option shows if the sensor for freeze guard function is ON or OFF.



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



The control 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.



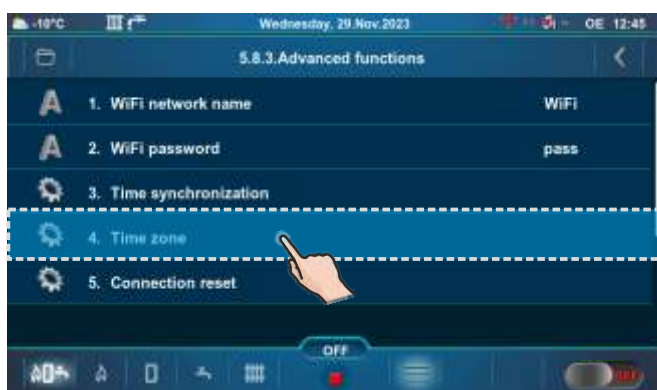
5.8.3.3. TIME SYNCHRONIZATION

Currently not active.



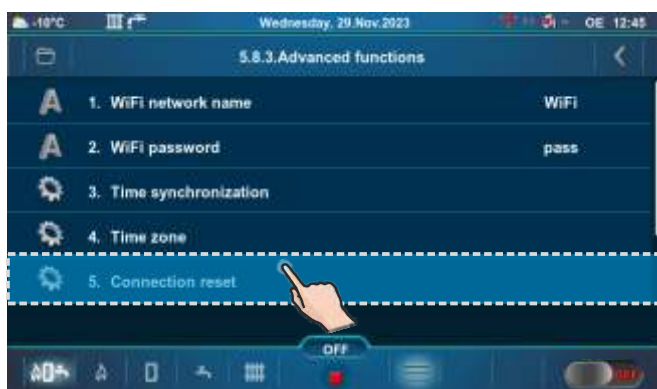
5.8.3.4. TIME ZONE

Currently not active.



5.8.3.5. CONNECTION RESET

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



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 to be installed by an authorized technician) to alert the user when he is not near the boiler. The warning method 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 the 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

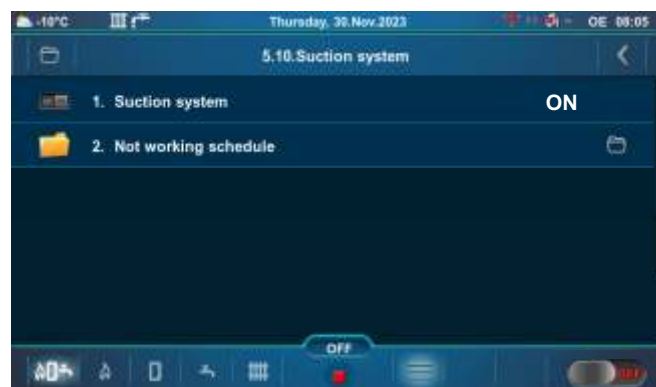
Factory: ON

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

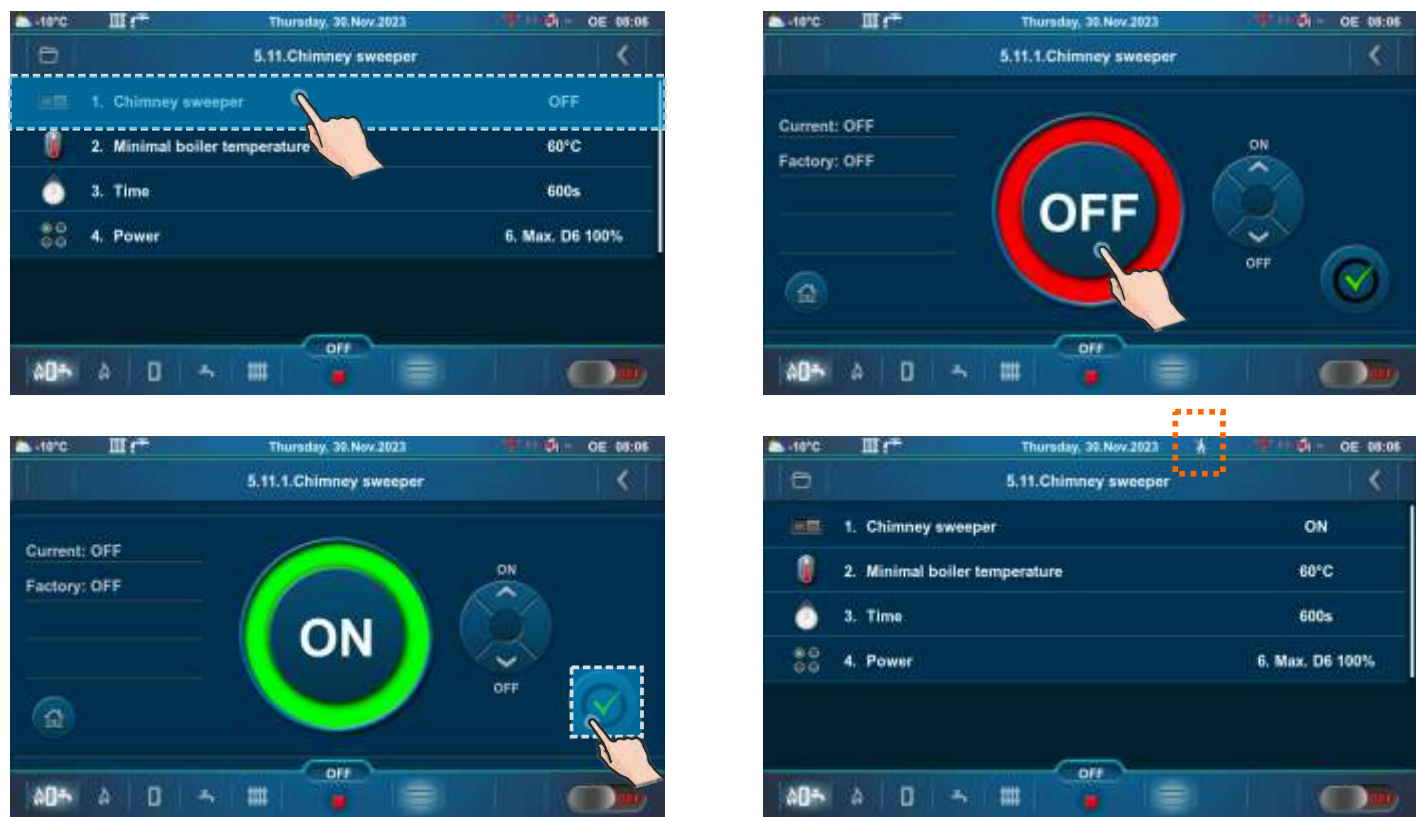
This submenu enables measurement of the combustion flue gases at different boiler powers.

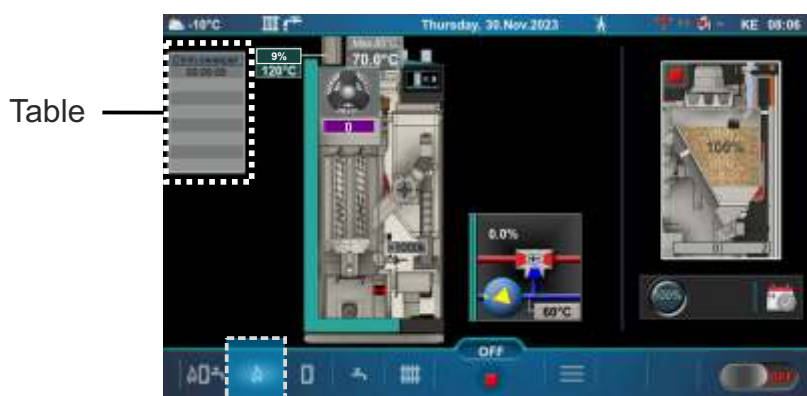


5.X.1. CHIMNEY SWEEPER

Activating this option will display a chimney sweeper icon on the top bar of the screen. By selecting the "Boiler screen (KE)", a table with the schedule 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 minimum time and the minimum boiler temperature condition is met, the counter digits turn green and measurement can be performed.

Factory: OFF
Possible selection: ON, OFF





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 (Dx), after the minimum temperature is reached so that the flame stabilizes and the measurement can begin. After this time, the text on the counter turns green and only then measuring can be started.

Factory: 600s

Possible selection: 600-3600s



5.X.4. POWER

This option enables the boiler to operate at the selected power so that the combustion flue gases can also be measured in the boiler modulation phases. 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 the next boiler starts.

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: Boiler works normally, problem appears on work of CM2K regulator if is installed. Possible causes: Interruption on el. connections between sensor and boiler, cold connection or invalid outside 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: Boiler immediately goes to phase OFF. Possible causes: Key for power loading is not installed or recognized, cold connection or invalid key.
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.
E13	FAN ERROR	Boiler status: Boiler immediately goes to phase OFF.
E14	MEMORY ERROR	Boiler status: Boiler immediately goes to phase OFF.
E15	COMMUNICATION ERROR WITH MOTHERBOARD	Boiler status: Boiler immediately goes to phase OFF.
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.
E19	FLAME DISAPPEARED IN WORKING PHASE	Boiler status: Boiler immediately goes to phase OFF.
E21	ERROR GRATE CLEANER	Boiler status: Boiler immediately goes to phase OFF.

E22	FUEL LEVEL	Possible cause: There is not enough pellets to continue boiler operation. (If the suction system is enabled, E22 always appears after error E32.) Boiler status: Boiler goes to phases S7, C0 and OFF.
E23	FLAME DISAPPEARED IN IGNITION STAGE	Boiler status: Boiler immediately goes to phase OFF.
E24	FLAME DISAPPEARED IN STABILIZATION STAGE	Boiler status: Boiler immediately goes to phase OFF.
E26	FUEL SENSOR	Boiler status: Boiler immediately goes to phase OFF.
E28.1	COMMUNICATION ERROR WITH CM2K-CIRCUIT C1 & C2	
E28.2	COMMUNICATION ERROR WITH CM2K-CIRCUIT C3 & C4	
E28.3	COMMUNICATION ERROR WITH CM2K-CIRCUIT C5 & C6	
E40	SAFETY THERMOSTAT	Possible cause: The water temperature in the boiler is too high (above 104°C). 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. 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	
E48	DATE AND TIME ARE NOT SET	Possible cause: Low charged battery. (The 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) is switched on.) If no switching time (SCHEDULE) is on, this error will not occur, but Warning W9. This boiler failure can not be detected by itself, it can only occur if a switch-on time is triggered in the work while we have a W9 warning, in which case the boiler goes into the S7 (S7-1) shutdown phase. Boiler status: The boiler can not operate. The boiler states under different circumstances are described above "Possible cause". Troubleshooting: It is necessary to replace the battery (CR1220).

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

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

Errors of additional equipment: Pelet suction system

E32	EMPTY PELLET STORAGE CLOGGED PELLET DELIVERY PIPE	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.
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	Check the UTP Ethernet cable and its connections to the boiler controller and the suction system.

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 firebox 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 firebox 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.
W8	PRESSURE SWITCH	
W9	DATE AND TIME ARE NOT SET	Possible cause: Low charged battery. (The 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). Boiler status: Boiler can operate (if the boiler switching times (SCHEDULE) are used the E48 error occurs and the boiler can not operate). What needs to be done: It is necessary to change the battery on the controller screen (CR 1220), set the date and time on the controller.

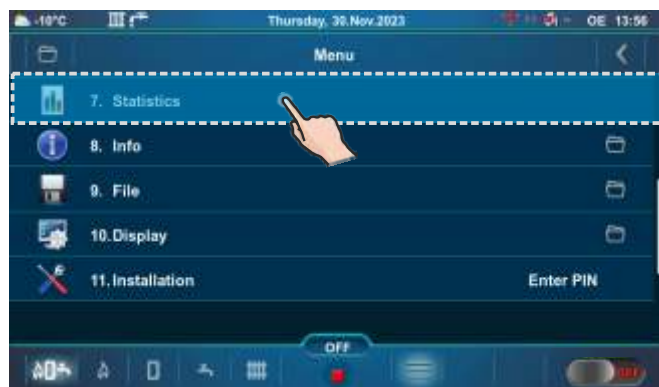
INFO - IW

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	
I19	FLAME DISAPPEARED IN WORKING PHASE	
I19.1	RETRY IGNITION	Re-ignition due to the disappearance of the flame during the phase...

7.0. STATISTICS



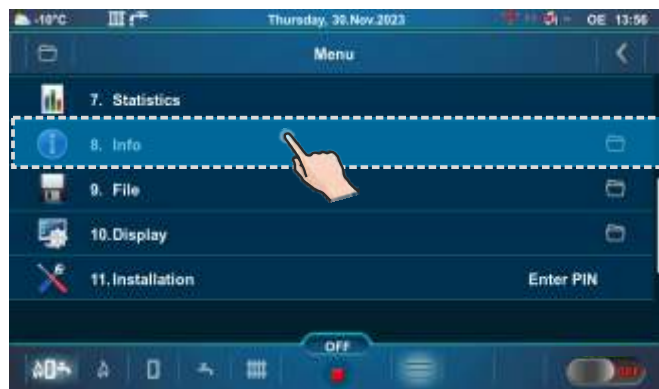
Statistics of boiler operation and certain parts:

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

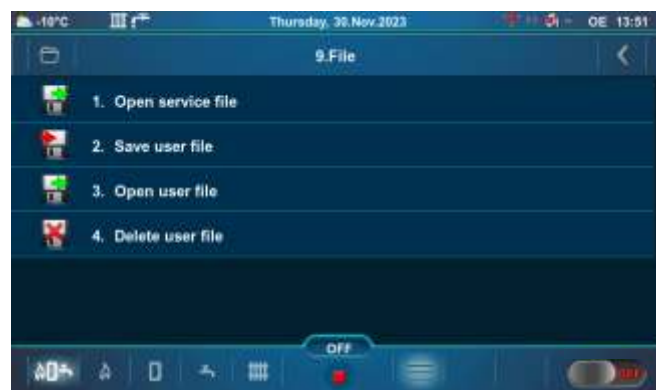


8.2. SERVICEMAN INFORMATION

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

After pressing "Save user file", it is possible to save the user file.

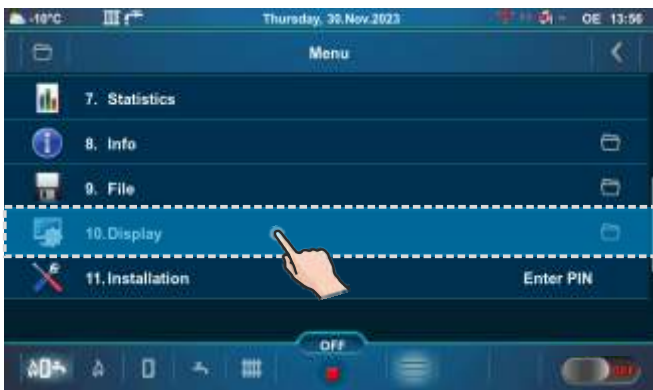
9.3. OPEN USER FILE

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.

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 CR1220). 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

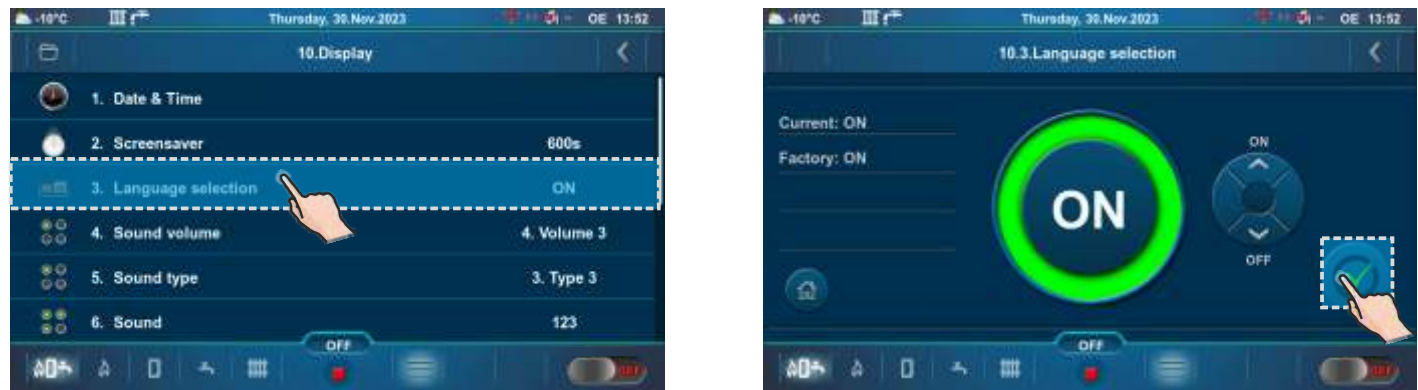


10.3. LANGUAGE SELECTION

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 (OE)" will appear.

Factory: ON

Possible selection: ON, OFF

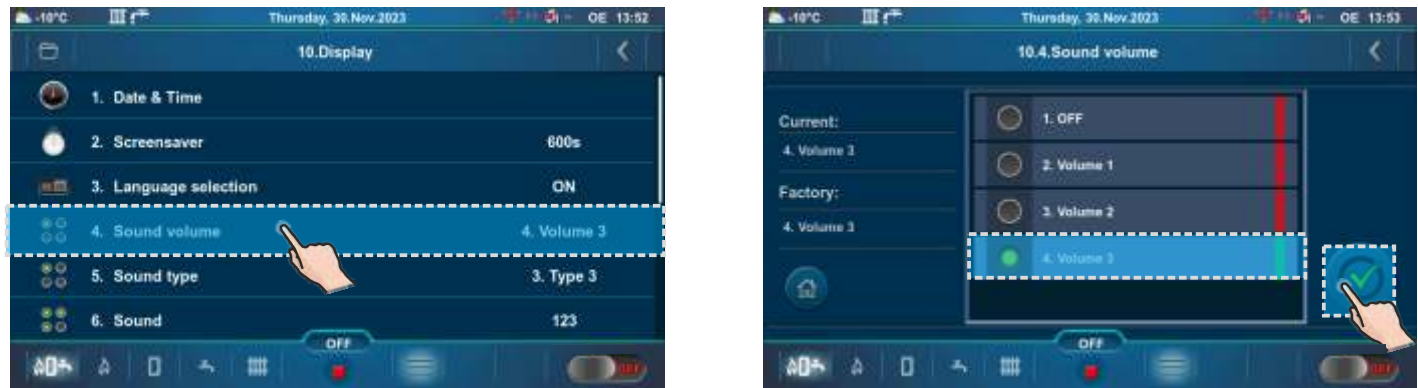


10.4. SOUND VOLUME

This option is used to set the speaker volume.

Factory: Volume 3

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

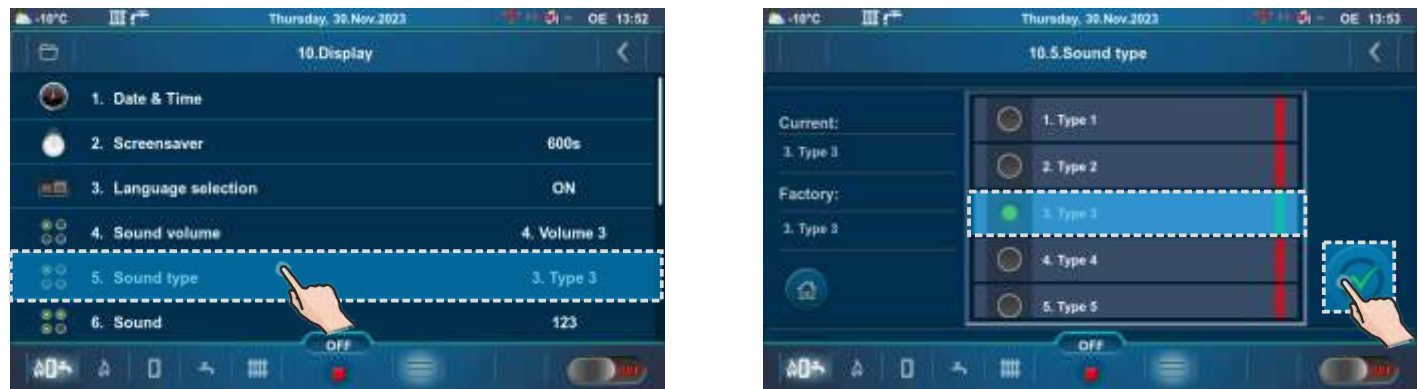


10.5. SOUND TYPE

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

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

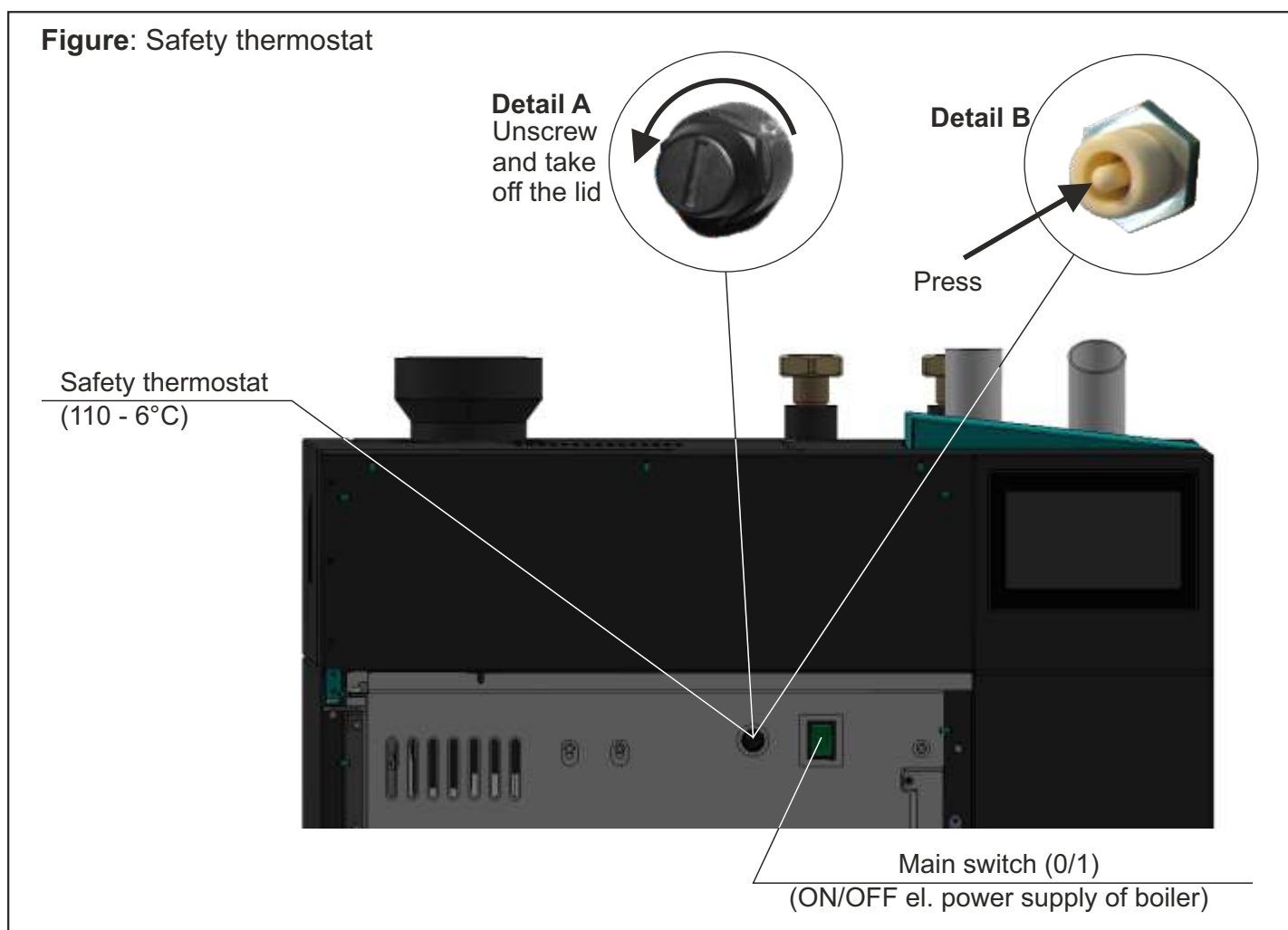
12.1. SAFETY THERMOSTAT - boiler malfunction

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)	Temp (°C)	Resistance (W)
-30	885	190	1.732
-25	904	195	1.751
-20	923	200	1.770
-15	942	205	1.789
-10	962	210	1.809
-5	981	215	1.828
0	1.000	220	1.847
5	1.019	225	1.866
10	1.039	230	1.886
15	1.058	235	1.905
20	1.077	240	1.924
25	1.096	245	1.943
30	1.116	250	1.963
35	1.135	255	1.982
40	1.154	260	2.001
45	1.173	265	2.020
50	1.193	270	2.040
55	1.212	275	2.059
60	1.231	280	2.078
65	1.250	285	2.097
70	1.270	290	2.117
75	1.289	295	2.136
80	1.308	300	2.155
85	1.327	305	2.174
90	1.347	310	2.194
95	1.366	315	2.213
100	1.385	320	2.233
105	1.404	325	2.251
110	1.424	330	2.271
115	1.443	335	2.290
120	1.462	340	2.309
125	1.481	345	2.328
130	1.501	350	2.348
135	1.520	355	2.367
140	1.539	360	2.386
145	1.558	365	2.405
150	1.578	370	2.425
155	1.597	375	2.444
160	1.616	380	2.463
165	1.635	385	2.482
170	1.655	390	2.502
175	1.674	395	2.521
180	1.693	400	2.540
185	1.712		

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".



Operating phase label

OFF	Boiler is switched off.
S0	Initial fan blowing, waiting for grate position check.
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	Stabilisation stage 1.
SP2	Stabilisation stage 2.
SP3	Stabilisation stage 3.
SP4	Stabilisation stage 4.
SP5	Stabilisation stage 5.
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	Shutting down stage.
S7-1	1st stage of shutting down stage, waiting for flame to disappear and additional blowing for set time, after which S7-2 stage starts. Flue gas fan works (rpm) according to stage from which boiler entered S7-1 stage.
S7-2	2nd stage of shutting down stage. Final flue gas fan blowing at max rpm until factory set time passes. After this stage grate cleaning stage starts (C0) and enters S7-3 stage.
S7-3	Burner do not work/standby/pause. Boiler waits demand for start.
PF0	Stage after power supply failure and power supply return, electric heater is turned on and waits for flame to appear (if flame appears -> PF1, if flame do not appear -> PF4).
PF1	Electric heater switches off and enters PF2.
PF2	Flame developing stage, enter PF3.
PF3	Waits for flame disappearing, 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.

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 S7-1, S7-2, C0, (S7-3), (S0) (if there is a need for boiler operation)...



"T" mark is blinking

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

Marks on the screen

"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)...



"G" mark is
blinking

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

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HEATING TECHNIQUE



Company assumes no responsibility for possible inaccuracies in this book originated typographical errors or rewriting, all figures and diagrams are principal and it is necessary to adjust each actual situation on the field, in any case the company reserves the right to enter their own products such modifications as considered necessary.

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