Centrometal
HEATING TECHNIQUE

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CE

ENG

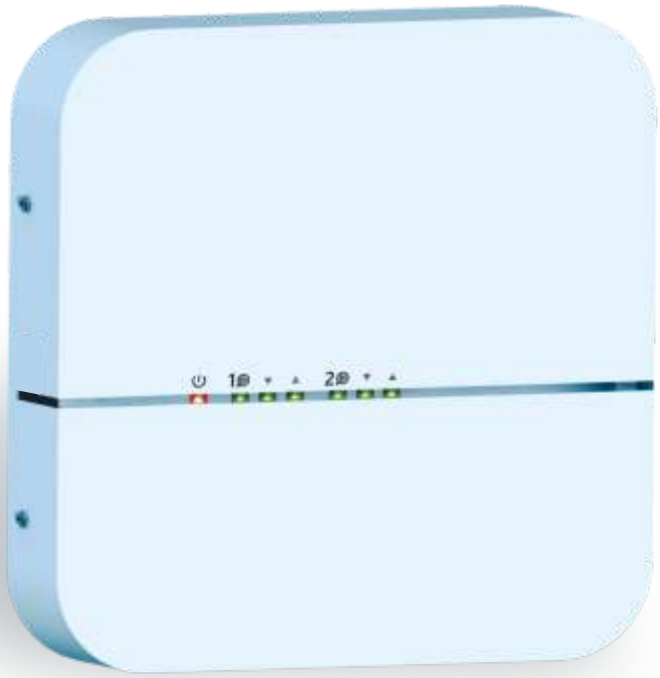
Technical instructions

for installation and using the additional equipment

CM2K module for
mixing circuits / DHW / Recirculation

for connection to: PelTec II Lambda, ZVB II, PelTec-Compact, BIO-SC, PelTec, Cm Pelet-set Touch, BioTec-L, BioTec Plus, EKO-CKS P Unit, EKO-CKS Multi Plus

Wi Fi READY



CM2K

TU-CM2K-06-1-2024-ENG

Thank you for purchasing our product

Please read these technical instructions carefully so that you can use and adjust the CM2K module as easily as possible. After reading the instructions, place them in an appropriate place where you can easily find them if you need further information about the operation and use of the CM2K module.

Please make sure that the CM2K module has been disposed of in order to reduce environmental pollution.

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CM2K TECHNICAL CHARACTERISTICS

Inputs	4x sensor inputs (NTC5K, 2x main flow/DHW, 1x outdoor, 1x reserve)
	2x room corrector inputs CSK
	2x digital inputs (CSK-Touch: wire)
	1x power supply 12VDC

Outputs	4x semi-conductor (triac / 2x pump, 2x mixing valve actuator)

Output power	Triacs (2x) max. 200W (1A)

Power supply	195-265V/50Hz
Max. power	
Electricity consumption	
Conductor cross section	1-1,5 mm2
IP protection	IP20 according EN
Environment temperature	-10 do 40°C
CM2K mass	715 g
Housing material	Flame resistant ABS (UL94V-0)
CM2K dimensions	(WxHxD) 200x40x200

Sensor technical characteristics	
Sensor type	NTC5K
Min. conductor cross section	0,5-0,75 mm2
Max. conductor length	50 m

EC Declaration
The product complies with the requirements of the current rules and is marked CE.
The EC Declaration of Conformity is available on request, contact the manufacturer.

CE

BASIC PARTS

INPUTS:
- 4x sensor input (NTC5K sensor - 2x main flow/DHW, 1x outdoor sensor, 1x reserve)
- 2x room corrector CSK input (possibility of connection with 3 or 2 wires - connection depends of boiler type and boiler firmware)
- 2x digital input (CSK-Touch: wire)
- 1x 12VDC

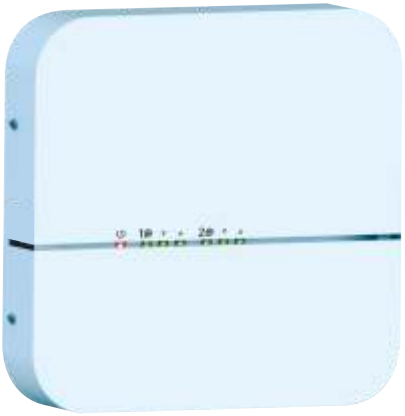
OUTPUTS:
- 2x standard (230V) - pump
- 2x standard (230V) - actuator

- 2x UTP connector for connecting to the boiler and connection more CM2K modules or other additional equipment (WiFi box...)

DELIVERY in cardboard box:
1x CM2K module
2x NTC5K (main flow sensor / DHW sensor)
1x UTP cable 5m
3x dowel+screw
10x cable ties
1x technical instructions

1.0. CM2K DELIVERY CONTENT

CM2K
1X



UTP cable L=5m
1X

Main flow sensor / DHW sensor
2X

Installation set
1x
(3 dowels, 3 screws, 10 cable ties)

1.1. ADDITIONAL EQUIPMENT FOR CM2K

Room corrector **CSK**

Outdoor sensor **OVT**

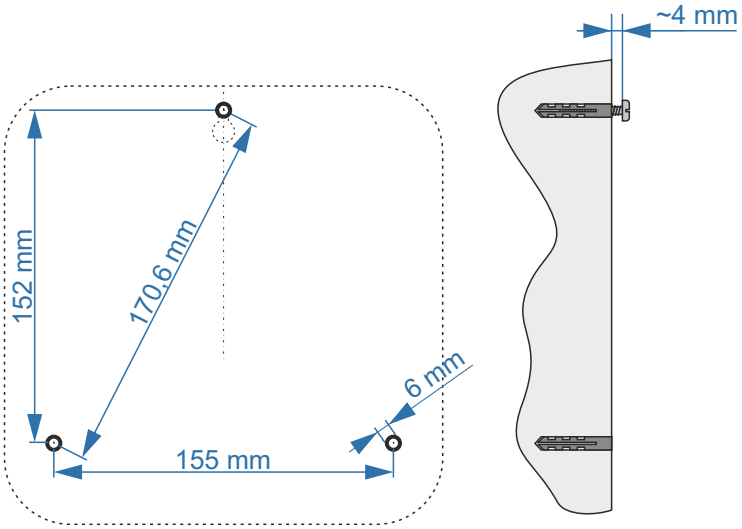
Digital room corrector **CSK-Touch**

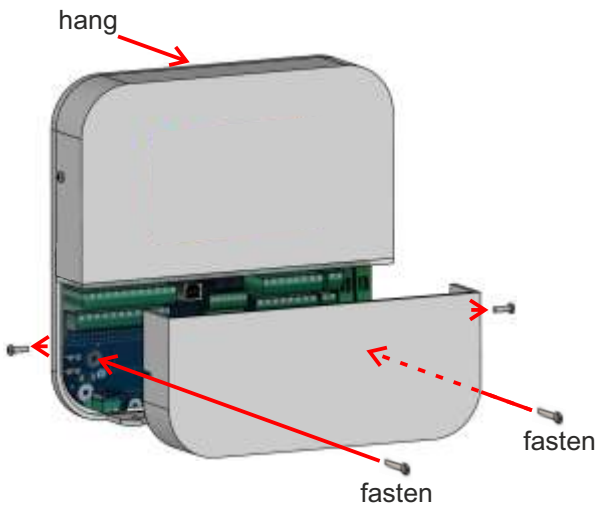
Note:
Room corrector CSK and **digital room corrector CSK-Touch** are **NOT** in delivery package.
With CM2K module is possible to use only **CSK room corrector or digital room corrector CSK-Touch** from producer Centrometal. Maximum of two room correctors can be connected, one for each circuit.

Outdoor sensor OVT is **NOT** in delivery package.
At certain boilers, outdoor sensor is in standard delivery and at some boilers it must be **separately ordered.**

1.2. CM2K MODULE INSTALLATION

CM2K module is installed on the wall or on hard surface in closed dry room.
According the picture below, drill 3 holes 6 mm x 35-45 mm.
Insert 3 dowels into drilled holes and install screw into upper dowel with ca. 4 mm discance from the wall.





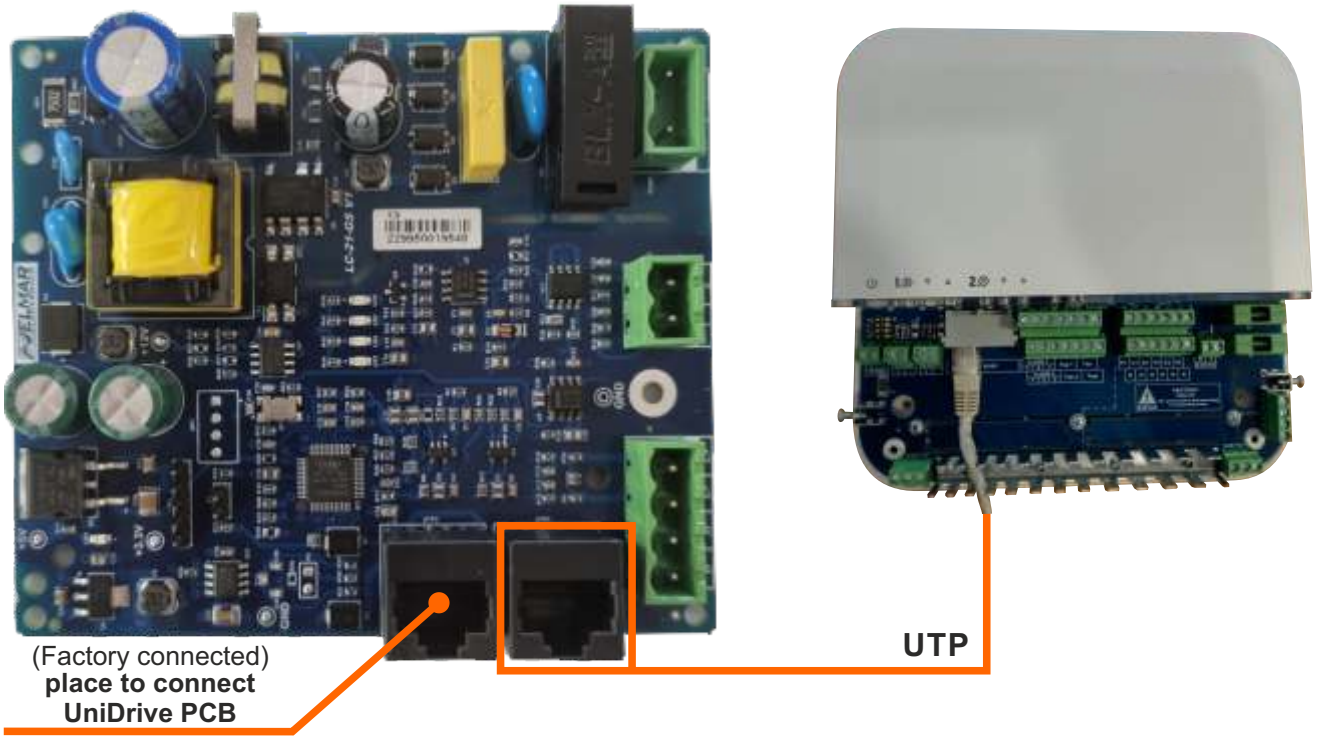
Remove lower cover, hang the module on the upper screw, install lower screws to the mounting holes in the module and in the wall. Fasten the screws to secure the module to the wall.

1.3. CONNECTION TO THE BOILER

Boiler type: PelTec II Lambda / BIO-SC / PelTec II HERMETIC

Lambda board: **LC-21-GS V1 (22995XXXXXXX "G")**

CM2K

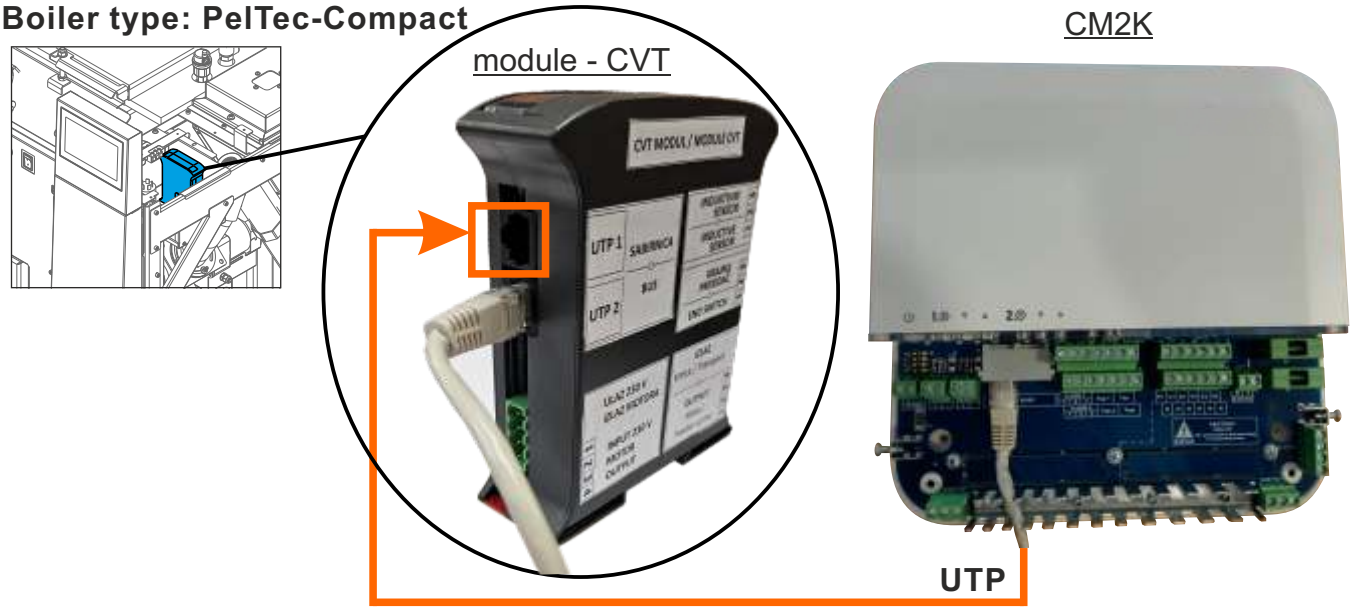


NOTE FOR LAMBDA - BOARD:
Two UTP connectors on the Lambda - board have the same function and are used to connect to the UniDrive PCB or to the additional equipment.

NOTE FOR CM2K:
Two UTP connectors on the CM2K module have the same function and are used to connect to the boiler (Lambda - board) or to the additional equipment.

Boiler type: PelTec-Compact

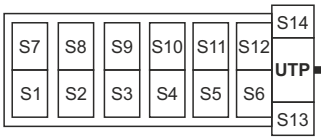
CM2K



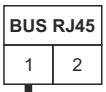
NOTE FOR MODULE - CVT FOR CONTROL OF THE VACUUM SUCTION SYSTEM:
Two UTP connectors on the MODULE-CVT for control of the Vacuum suction system have the same function and are used to connect to the AddOnDrive PCB or to the additional equipment.

NOTE FOR CM2K:
Two UTP connectors on the CM2K module have the same function and are used to connect to the suction system module or to the additional equipment.

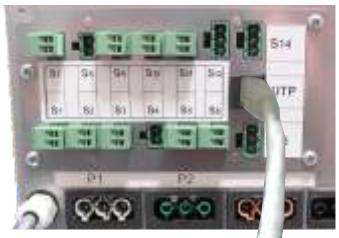
Boiler type:PelTec



CM2K



UTP

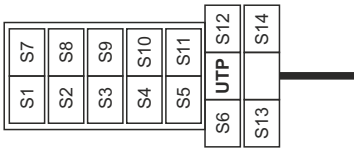


NOTE:
both UTP connectors in CM2K have same function and are used for connection to the boiler or connection of other additional equipment

UTP

Boiler type: BioTec-L

CM2K

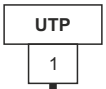


UTP

UTP

Boiler type: Cm Pelet-set Touch

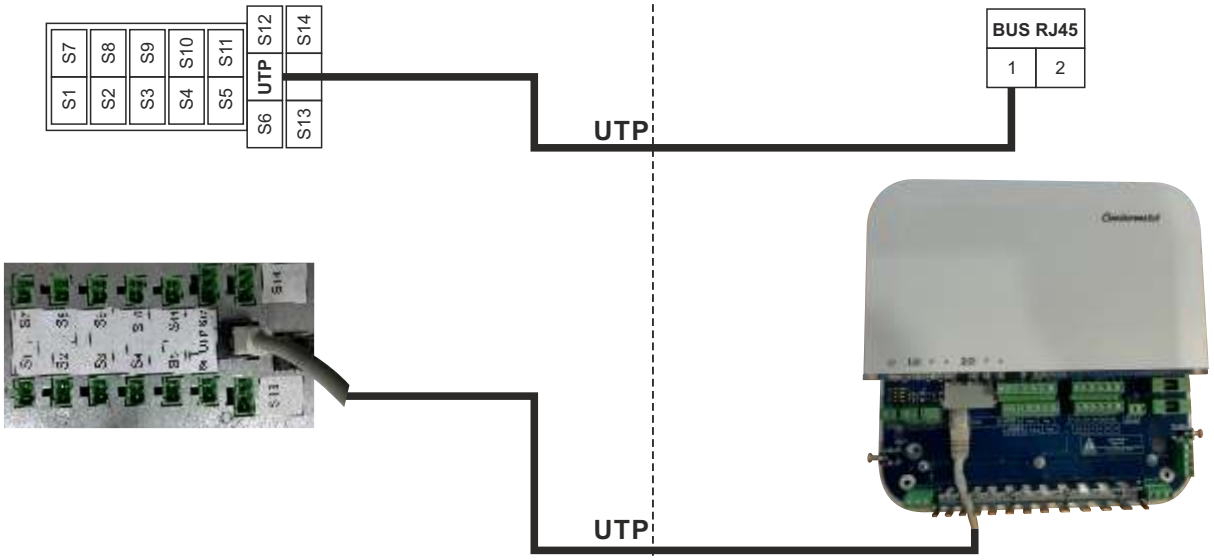
CM2K



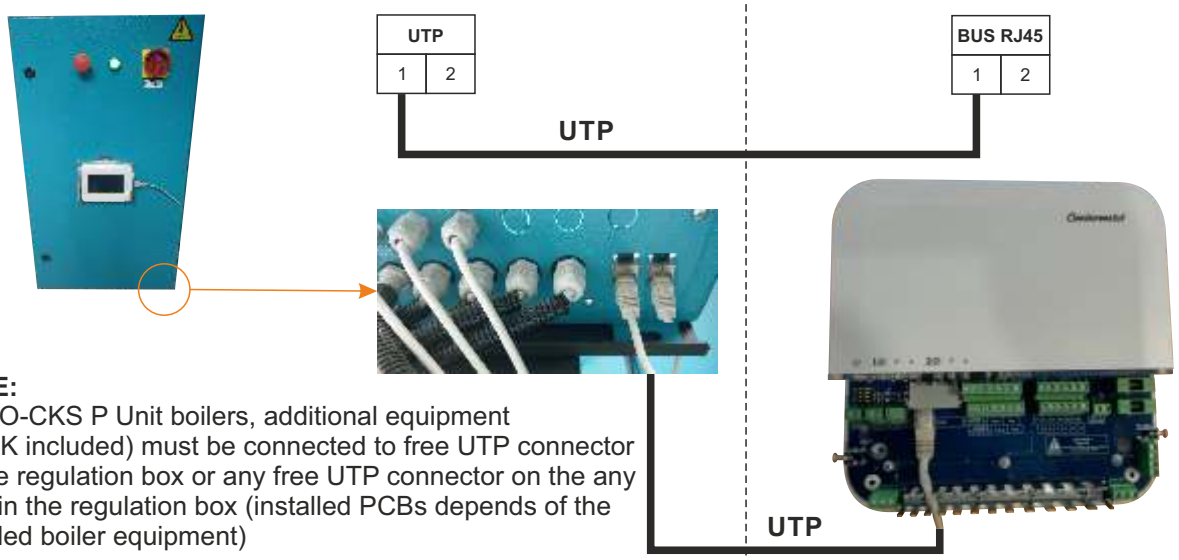
UTP

UTP

Boiler type: BioTec Plus

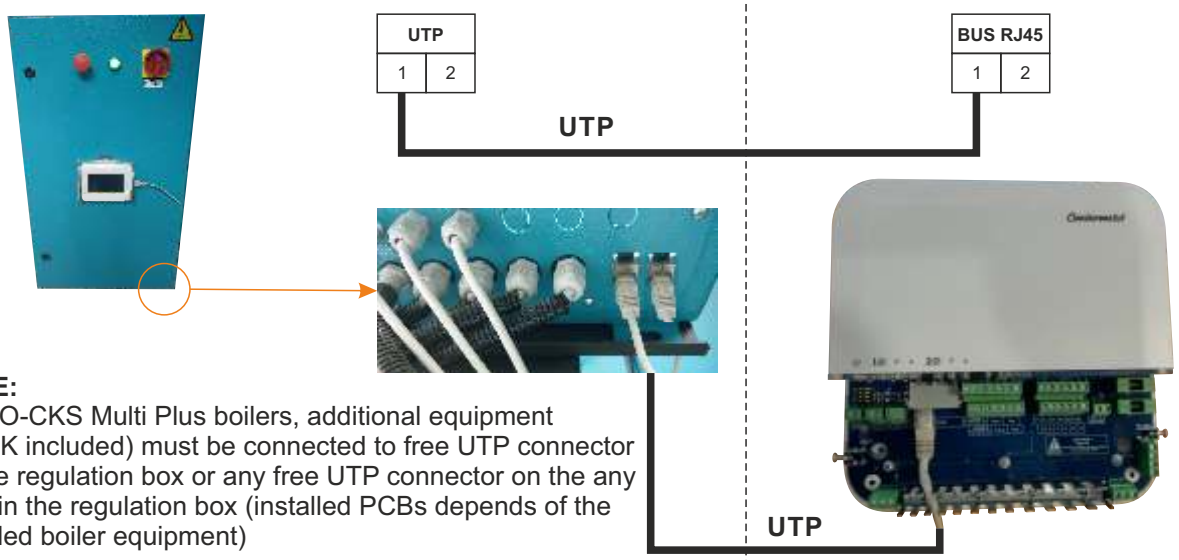


Boiler type: EKO-CKS P Unit



NOTE:
in EKO-CKS P Unit boilers, additional equipment (CM2K included) must be connected to free UTP connector on the regulation box or any free UTP connector on the any PCB in the regulation box (installed PCBs depends of the installed boiler equipment)

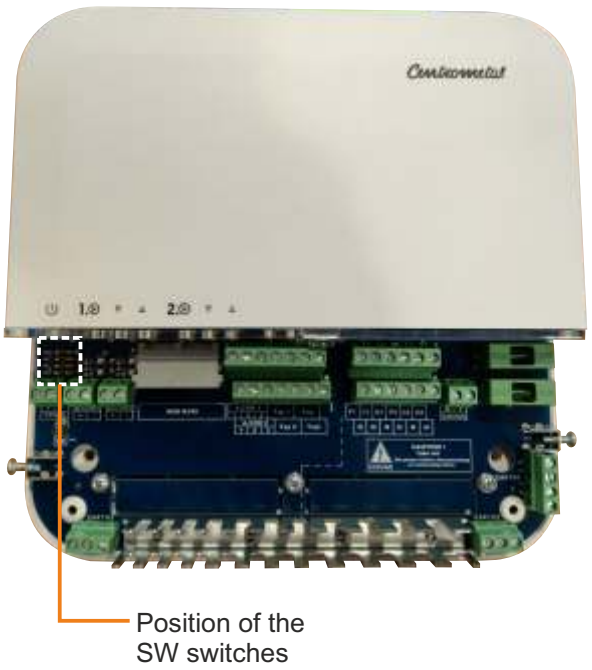
Boiler type: EKO-CKS Multi Plus

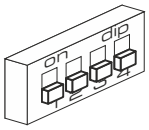
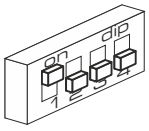
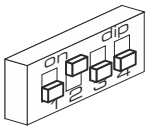
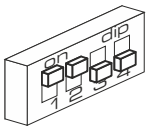


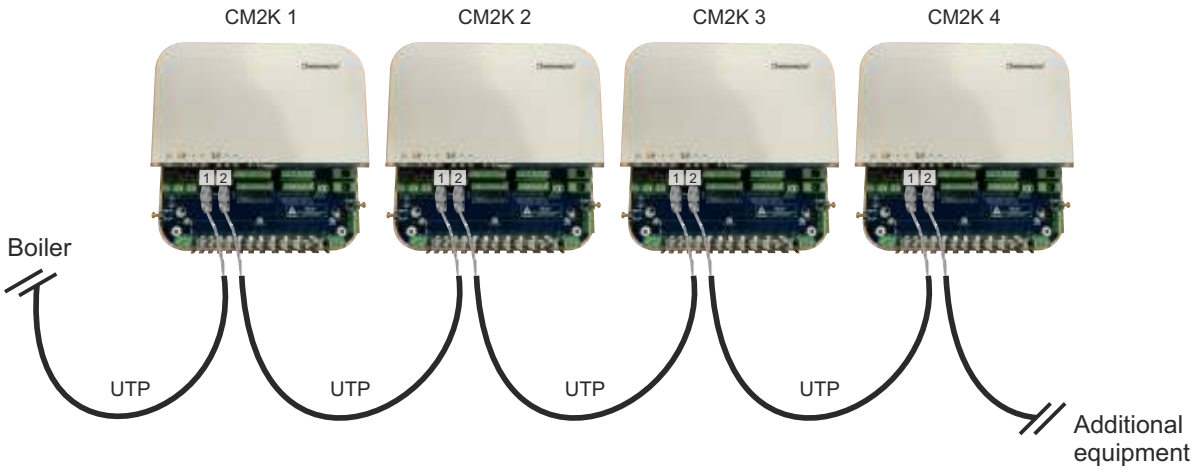
NOTE:
in EKO-CKS Multi Plus boilers, additional equipment (CM2K included) must be connected to free UTP connector on the regulation box or any free UTP connector on the any PCB in the regulation box (installed PCBs depends of the installed boiler equipment)

1.4. CONNECTING MORE CM2K MODULES

Maximum up to 4 modules can be connected. Connection is done by UTP cables. UTP input/output 1 or UTP input/output 2 can be used (they both have same function, free connector is used for connection of next module or for connection of other additional equipment).
If there are more than 1 CM2K installed, in every module is necessary to set device address (0-4). Address is set by SW switches on the PCB of the module (below casing cover of the connection clamps). Order of connection is not important, circuit number is defined by module address with SW switches (every module must have different address, i.e. two devices can't have same address).



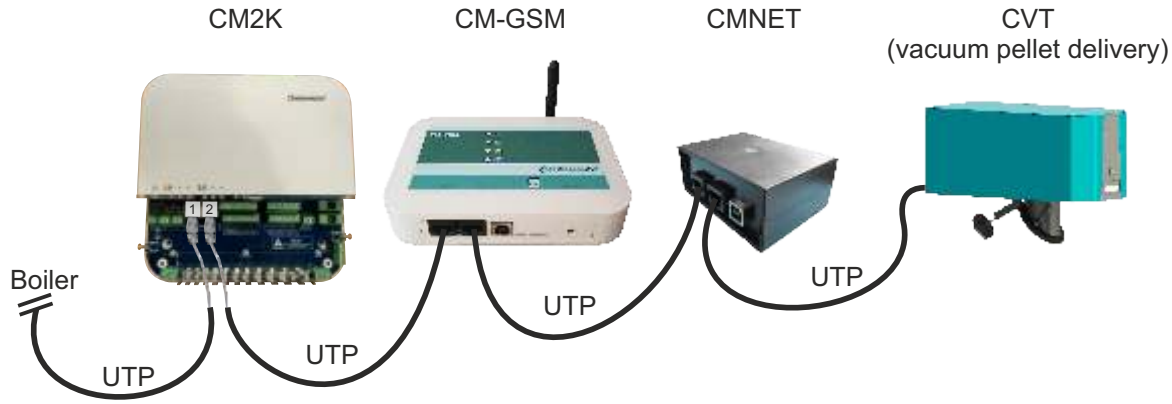
Device 1	1 - off 2 - off 3 - off 4 - off		
Device 2	1 - on 2 - off 3 - off 4 - off		
Device 3	1 - off 2 - on 3 - off 4 - off		
Device 4	1 - on 2 - on 3 - off 4 - off		

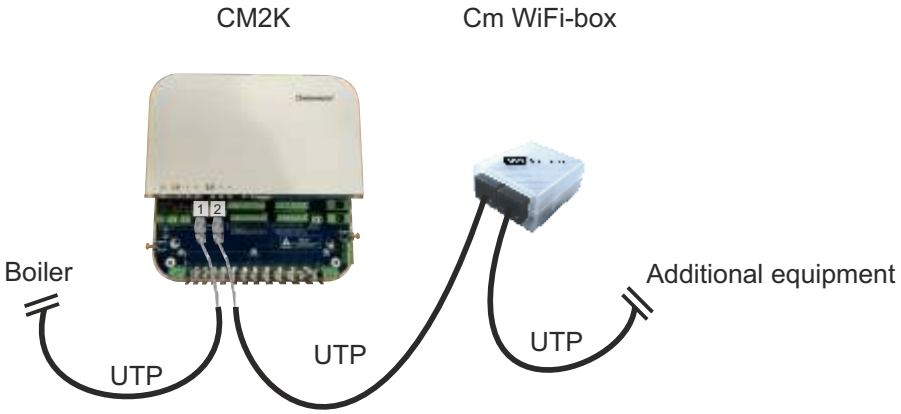


1.5. CONNECTION TO THE OTHER DEVICES (CM WIFI-BOX, CM-GSM, CMNET, CVT)

Connection is done with UTP cables. Every additional equipment device has 2 UTP connectors. Both UTP connector have same function. Devices can be connected in any order.

Example of connection:





1.6. INPUTS AND OUTPUTS CONNECTION

Digital input

①	+	-
	12VDC	

Digital inputs/outputs

1a	D.COR1		D.COR2	
	+	-	+	-

1 - Input (12V DC):
CSK-Touch digital room corrector uses power supply via input / output D.COR when the boiler main switch is ON.
OPTION - input (12V DC): can be used to power CSK-Touch digital room corrector when the boiler main switch is OFF (additional equipment: 12V DC rectifier)

1a - Digital inputs/outputs:
Wired connection of CSK-Touch digital room corrector. It is not important which output each individual corrector is connected to, but pay attention to have the corrector terminal "+" connected to the CM2K terminal "+" and vice versa, to have the corrector terminal "-" connected to the CM2K terminal "-".

UTP inputs/outputs

②	UTP1	UTP2
	BUS RJ45	

Inputs/outputs for UTP cables
- one input/output is for connection to the boiler
- free input/output is used for connecting more CM2K modules or other addititonal equipment

Circuit 1 inputs

③	A.COR 1			Tsp 1		Tos	
	1	2	3				

Circuit 1 inputs
- A.COR 1 - room corrector CSK (3 wires: 1, 2, 3) / (2 wires: 2, 3) - room thermostat/reg. control (1, 2)
- Tsp 1 - main flow sensor
- Tos - outdoor sensor

Circuit 2 inputs

④	A.COR 2			Tsp 2		Tspr	
	1	2	3				

Circuit 2 inputs
- A.COR 2 - room corrector CSK (3 wires: 1, 2, 3) / (2 wires: 2, 3) - room thermostat/reg. control (1, 2)
- Tsp 2 - main flow sensor
- Tspr - reserve (not used)

Triac outputs (230 V)

⑤	P1	C1	O1	P2	C2	O2
	N	N	N	N	N	N

Outputs phase live wire (**L**)*

Outputs common null (**N**)

* P1 - circuit 1 pump
C1 - circuit 1 actuator - close
O1 - circuit 1 actuator - open
P2 - circuit 2 pump
C2 - circuit 2 actuator - close
O2 - circuit 2 actuator - open

NOTE:
The maximum current for each pump output is I max = 1 A
In case of installation of a stronger or three-phase pump, it is necessary to install an additional contactor.

Power supply

⑥	N	F
	230VAC	

CM2K power supply
power supply 230V must be connected to control connected pumps and actuators

Earthning

⑦	EARTH1				EARTH2			EARTH3		
	1	2	3	4	1	2	3	1	2	3

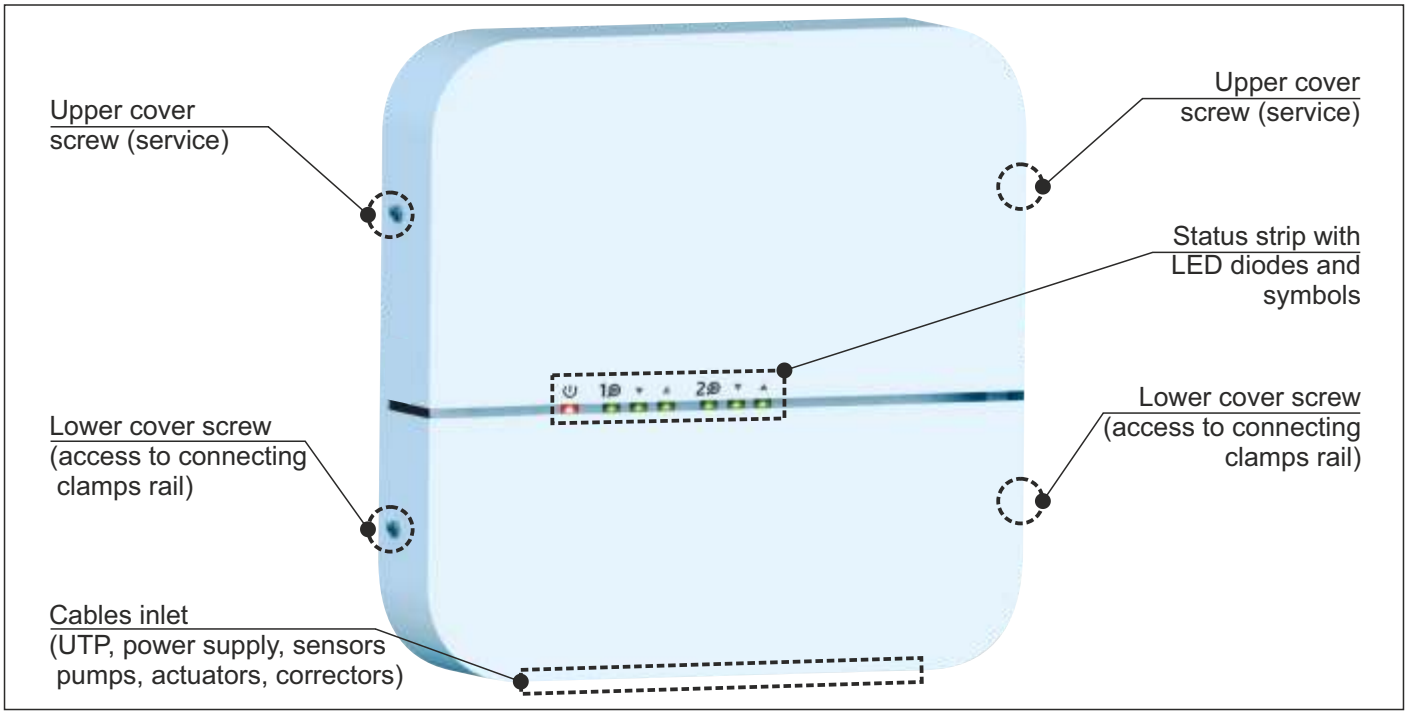
Common earthning
connect earthning of the power supply and connected pumps

⑧ **Cable connectiong rail**
fasten the cables to the rail with cable ties

⑨ F2 - fuse 1,6A - outputs 2. circuit (pump, actuator)

⑩ F1 - fuse 1,6A - outputs 1. circuit (pump, actuator)

2.0. LED INDICATORS



- status - indicates CM2K status; connection with the boiler is ok, boiler is connected to the power supply and main switch is on - doesn't mean that CM2K is connected to the power supply (230V)
- for pumps and actuators working CM2K power supply (230V) must be connected

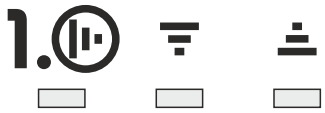
- pump - indicates working of the pump (LED ON = pump works / LED OFF = pump doesn't work)

- actuator - close (LED ON = actuator closes / LED OFF = actuator doesn't work)

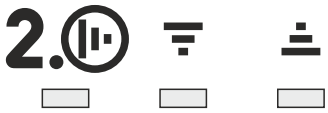
- actuator - open (LED ON = actuator opens / LED OFF = actuator doesn't work)

NOTE: actuator open and actuator close can't work at the same time

EXAMPLES OF LED INDICATORS



1. Circuit
All devices are off



2. Circuit
All devices are off

1. Circuit
Pump works; Mixing valve closes

2. Circuit
Pump works; Mixing valve closes

1. Circuit
Pump works; Mixing valve opens

2. Circuit
Pump works; Mixiong valve opens

3.0. CONFIGURATIONS

PelTec II Lambda, PelTec-Compact, ZVB II:
Configuration schemes you can find in the boiler's technical instructions, and the screen views in the technical instructions for the controller.

Peltec, BioTec-L, Cm Pelet-set Touch, BioTec Plus, EKO-CKS P Unit, EKO-CKS Multi Plus: Configuration schemes and the screen views you can find in the technical instructions for the controller.

Boiler configuration must be set in the **Installation** menu (under PIN) (only authorised technician can use it).

PelTec II Lambda / ZVB II / BIO-SC / PelTec - CM2K can be enabled only in configurations (schemes) that have accumulation (buffer) tank or hydraulic crossover.

BioTec-L - CM2K can be enabled in all configurations (schemes) because all have accumulation (buffer) tank.

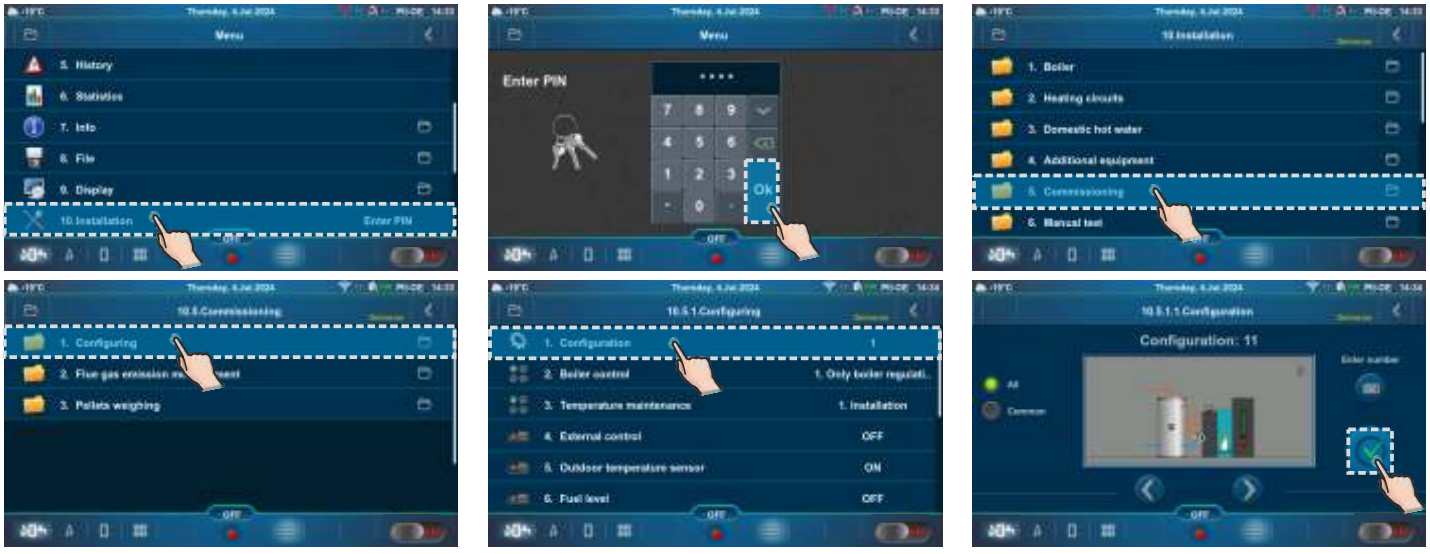
Cm Pelet-set Touch - CM2K can be enabled in all configurations (schemes) because all have accumulation (buffer) tank, hydraulic crossover or 4-way mixing valve.

BioTec Plus - CM2K can be enabled in all configurations (schemes) because all have accumulation (buffer) tank.

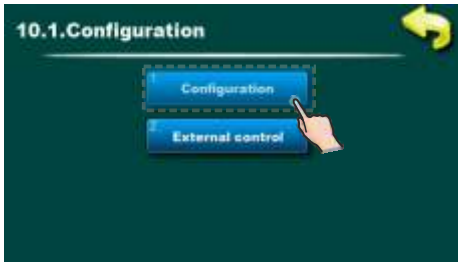
EKO-CKS P Unit - CM2K can be enabled in all configurations (schemes) because all have accumulation (buffer) tank or hydraulic crossover.

EKO-CKS Multi Plus - CM2K can be enabled in all configurations (schemes) because all have accumulation (buffer) tank.

Example of configuration (scheme) selecting: PelTec II Lambda / ZVB II



Example of configuration (scheme) selecting: **PelTec**



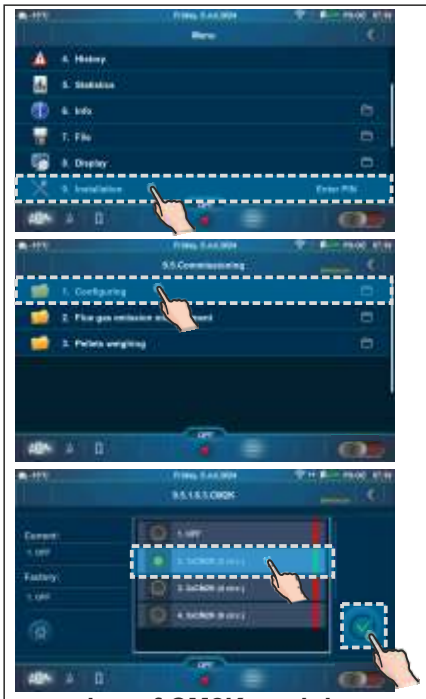
4.0. SELECTING THE NUMBER OF CM2K MODULES

Display order and ordinal numbers in regulation don't have to match exactly to this instructions. They depend of the configuration, firmware version and setting of the regulation.

CM2K can only be enabled on by an authorized service technician in the Installation menu (PIN). CM2K regulator is activated when the number of CM2K modules is selected (every module can control 2 circuits).

NOTE: after enabling any of CM2K modules (2 circuits), it is necessary to select heating type for each circuit. After that, circuit is activated and settings for it will be displayed.

Example of CM2K module selection: **PelTec II Lambda / PelTec-Compact / BIO-SC / ZVB II (1xCM2K - 2 circuits)**



number of CM2K modules is selected

By selecting number of CM2K modules, option REGULATOR / CM2K is enabled (activated) and in the main menu Regulator/CM2K menu icon will be displayed. User can use this menu to monitor and adjust some of the parameters.

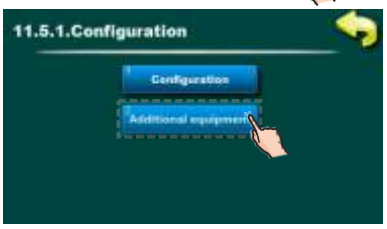
Example of CM2K module selection: **PelTec (1xCM2K - 2 circuits)**

CM2K selected

Example of CM2K module selection: **BioTec-L (2xCM2K - 4 circuits)**

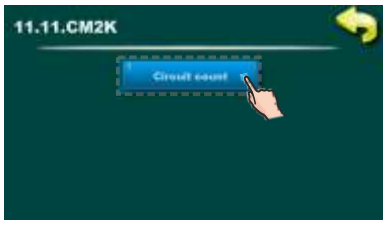

CM2K selected

Example of CM2K module selection: **Cm Pelet-set Touch (1xCM2K - 2 circuits)**

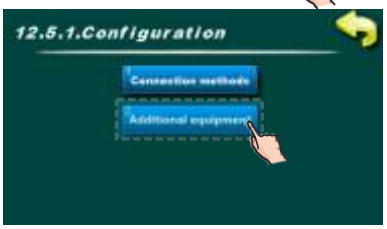
CM2K selected

Example of CM2K module selection: **BioTec Plus (1xCM2K - 2 circuits)**

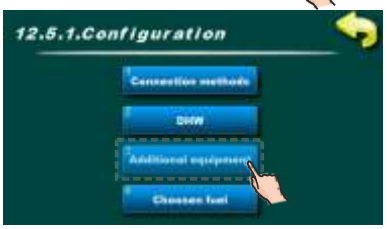
CM2K selected

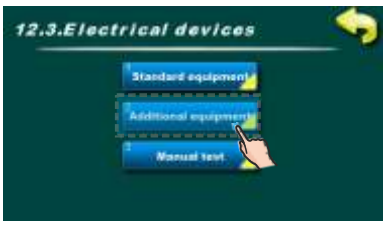
Example of CM2K module selection: **EKO-CKS P Unit (1xCM2K - 2 circuits)**



CM2K selected

Example of CM2K module selection: **EKO-CKS Multi Plus (1xCM2K - 2 circuits)**



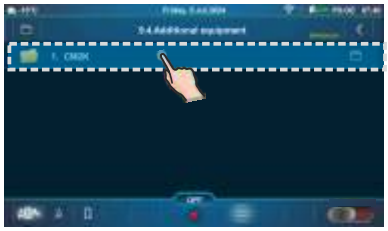


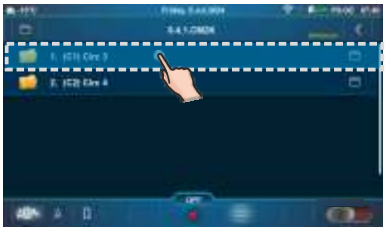
CM2K selected

5.0. CM2K CIRCUITS CONFIGURING

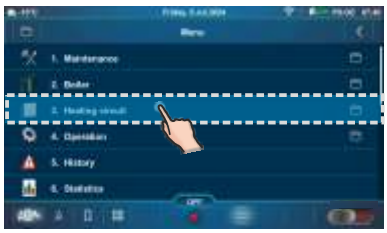
After selecting the number of CM2K module, it is necessary to configure the CM2K circuits, i.e. select the heating type for each circuit (configured by an authorized service technician in the **Installation menu (PIN)**). After that, submenus of Heating circuits (CX) Circ Y will appear in the main menu under "Heating circuits" and/or "Domestic hot water" (in the submenus, the user can activate or deactivate heating circuits and adjust certain parameters).

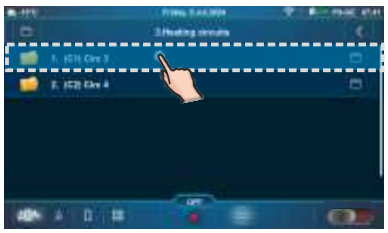
Example of CM2K configuring: **PelTec II Lambda, PelTec-Compact, ZVB II, BIO-SC (1xCM2K - 2 circuits)**
(the same principle applies to other boilers)





heating type is selected





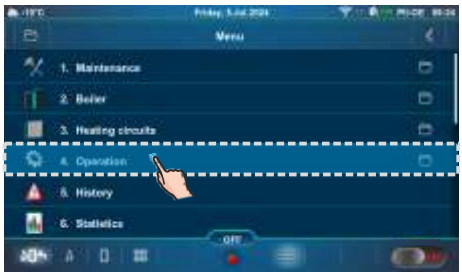
CM2K enabled

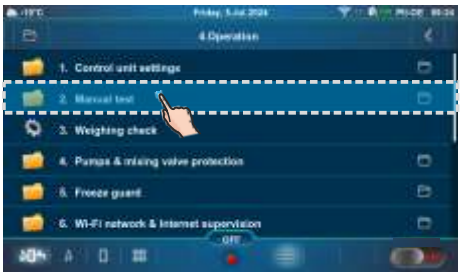
6.0. MANUAL TEST

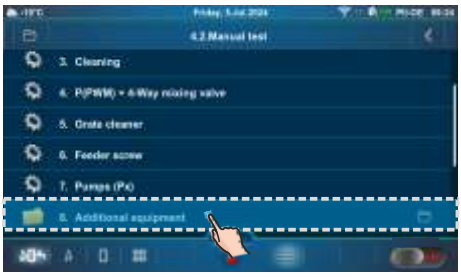
In this menu all outputs to the connected devices (pumps/actuators) can be manually tested. Every circuit can be separately tested.

6.1. PelTec II Lambda / PelTec-Compact / BIO-SC / ZVB II

Example of manual test menu:







Examples:

Radiators/Constant temperature

Floor

DHC

DHW

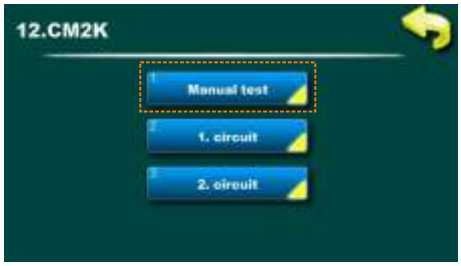
DHW+REC

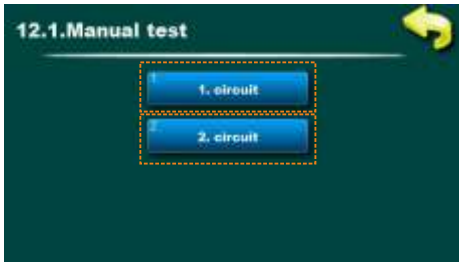
It is necessary to press the "ON" button next to the symbol of the pump/valve for which you want to check whether it is running. The pump symbol will start to rotate and button will light up green. After pressing the "OFF" button, the pump will stop operating.
If you want to check the valve, first it is necessary to turn on the opening of the valve (Open! "ON"), turn off the opening of the valve (Open! "OFF") and then turn on the closing of the valve (Close! "ON") and turn off the closing of the valve (Close! "OFF"). When the option is turned on, the pump symbol will rotate on the screen or an arrow will be displayed.

6.2. PelTec / Cm Pelet-set Touch / BioTec-L / BioTec Plus / EKO-CKS P Unit/ EKO-CKS Multi Plus

Depending of the number of enabled circuits, manual test for each circuit is shown.

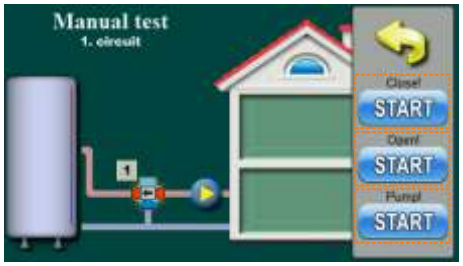
Example of manual test menu:



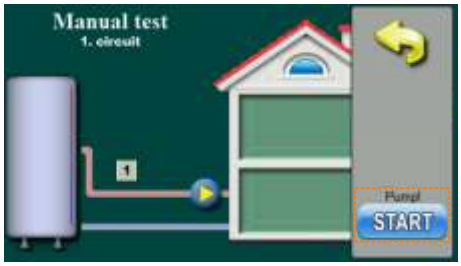


Example:

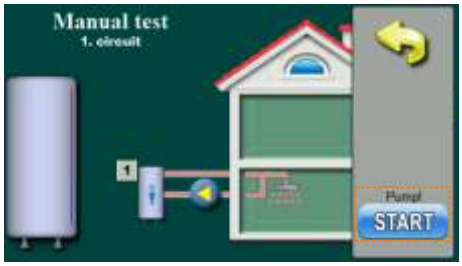
Radiator/Floor/Const. temp.



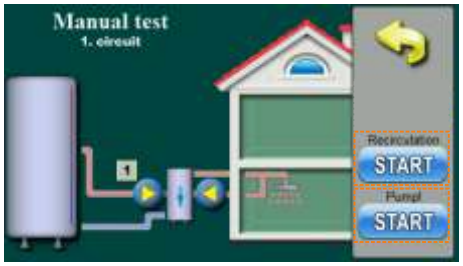
DHW



Recirculation



DHW + Recirculation



NOTE:

- By pressing the button START, pump or valve actuator opening/closing is started and this button becomes STOP
- by pressing the button STOP, pump or valve actuator opening/closing is stoped and this button becomes START

- with this options, demand for work of output/connected device is manually started, but is neccesary to check if outputs is actualy activated and device is actualy working.

7.0. CM2K VIEW

On the boiler screen, it is possible to monitor the operation of the activated and adjusted (set) options of the CM2K module (type of circuit: Radiators / Floor heating / Constant temperature / DHW / Recirculation / DHW+Recirculation; set temperature, measured temperature, pump operation, actuator operation, switching time (schedule), operating regime...).

7.1. PelTec II Lambda / PelTec-Compact / BIO-SC / ZVB II

7.1.1. CM2K VIEW SELECTION

To access CM2K options overview, it is necessary to press the icon which is located on the bar "Shortcuts to different screens" (a new screen with CM2K view will appear). If several CM2K are enabled, it is possible to change the view of CM2K modules (circuits) on the "Heating screen (PII-GE) (PC-GE)..." if you press the button (one screen corresponds to one CM2K, i.e. to two circuits). To return to the "Main screen (PII-OE), (PC-OE)..." it is necessary to press the icon or swipe right to the "Main screen (PII-OE), (PC-OE)..."

7.1.2. CIRCUIT TYPES

Changing the view of circuit

Boiler heating circuit K1

CM2K heating circuit C1
- Radiators (heating type)
- Room corrector
- Day temperature (operating regime)

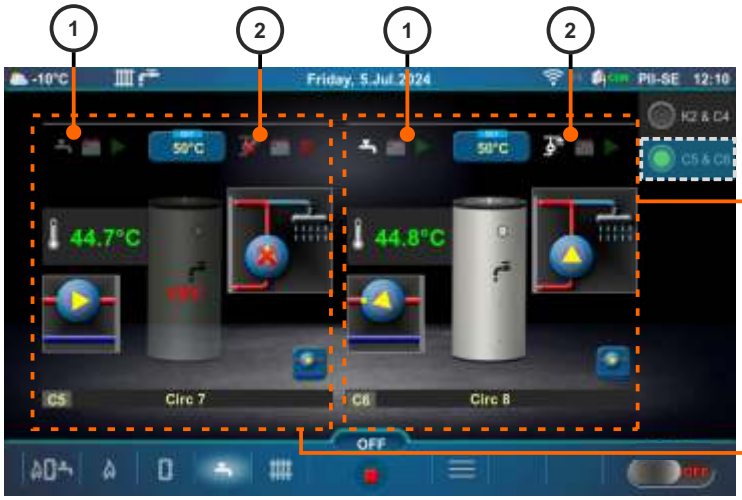
CM2K heating circuit C2
- Floor (heating type)
- Room corrector
- Night temperature (operating regime)

CM2K heating circuit C3
- Constant temperature (heating type)
- Room corrector
- Day temperature (operating regime)

CM2K heating circuit C4
- DHC
- Room corrector
- Activated schedule of the Day/Night temperature

Boiler heating circuit K2

CM2K heating circuit C5 - DHW



CM2K heating circuit C6 - DHW+REC
- DHW ON
- Recirculation ON
- Domestic hot water schedule (DHW) ON
- Recirculation schedule OFF

CM2K heating circuit C5 - DHW+REC
- DHW OFF
- Recirculation OFF

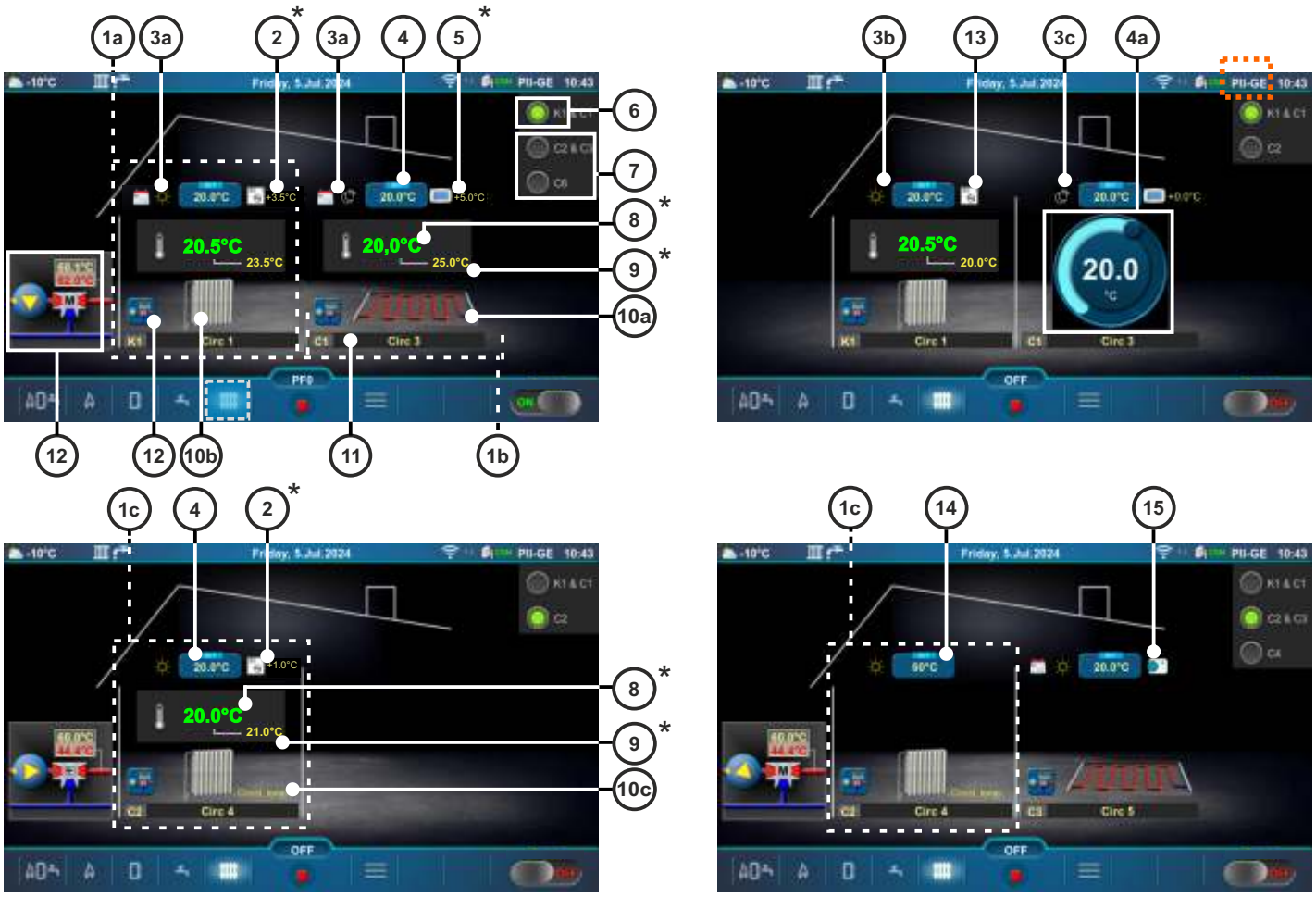
1 - DHW:

- DHW circuit switched OFF
- DHW circuit switched ON, domestic hot water schedule (DHW) OFF
- domestic hot water schedule (DHW) ON within the time
- domestic hot water schedule (DHW) ON out of the time

2 - Recirculation:

- switched OFF
- switched ON
- recirculation schedule ON within the time
- recirculation schedule ON out of the time

7.1.3. SYMBOLS ON THE "HEATING SCREEN"



Heating screen (PII-GE), (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...C8 - 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)

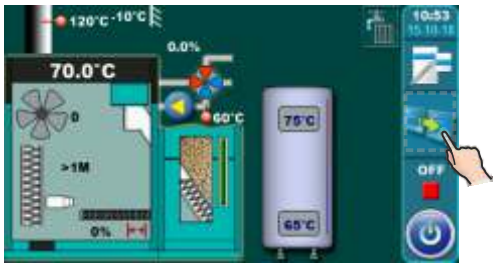
*The symbols will be shown only if corrector is selected in the heating circuit.

7.2. PelTec / Cm Pelet-set Touch / BioTec-L / BioTec Plus / EKO-CKS P Unit/ EKO-CKS Multi Plus

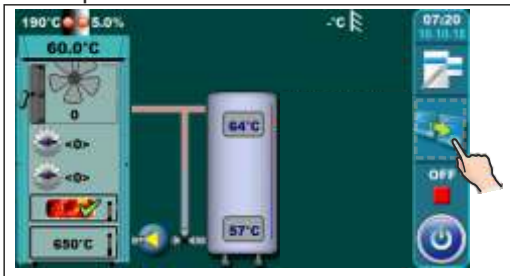
7.2.1. CM2K VIEW SELECTION

To access CM2K options view press button or on main screen (there will be new window with CM2K view or tools menu with additional button for CM2K view and other additional equipment buttons). To go back to main menu press button or to cycle between views press . If there is more than one CM2K installed, in CM2K view, views between CM2K modules (circles) can be changed by pressing buittons (in one view is one CM2K, i.e. two circuits).

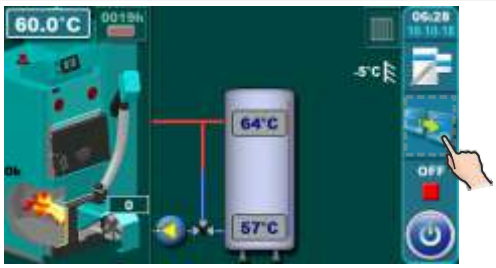
Example: **PelTec**



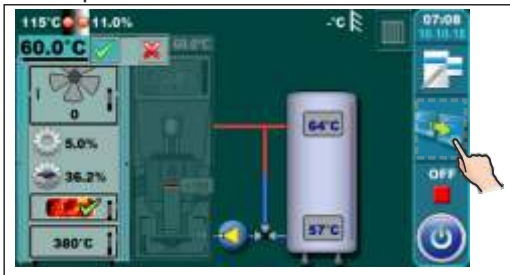
Example: **BioTec-L**



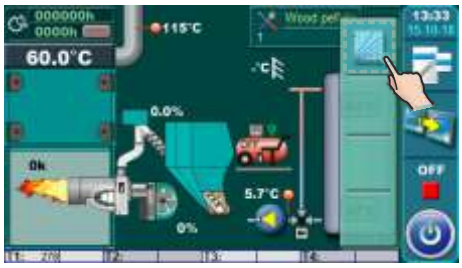
Example: **Cm Pelet-set Touch**



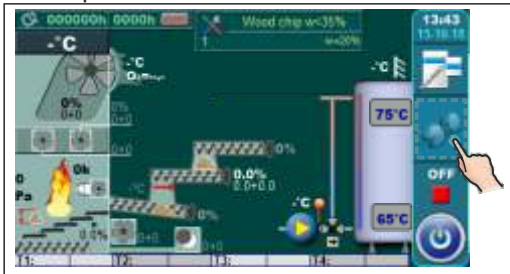
Example: **BioTec Plus**



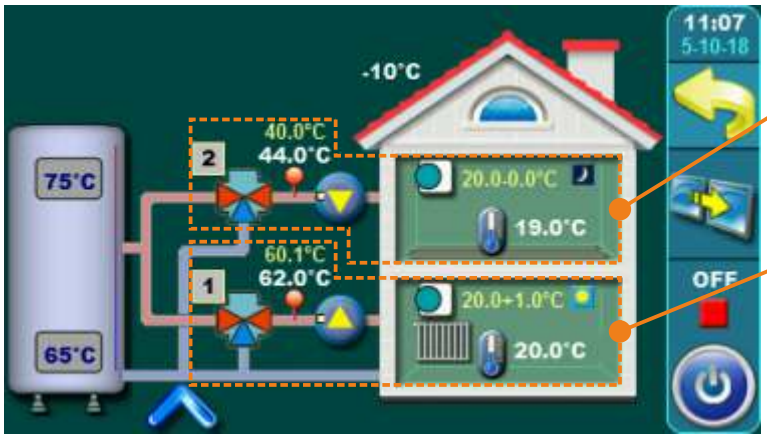
Example: **EKO-CKS P Unit**



Example: **EKO-CKS Multi Plus**

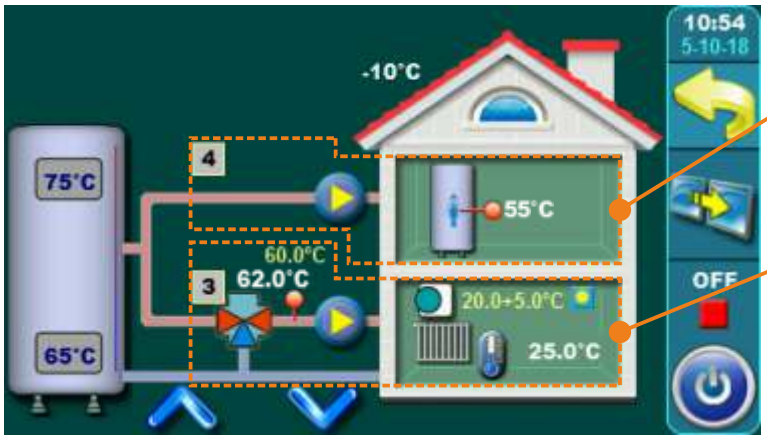


7.2.2. CIRCUIT TYPES



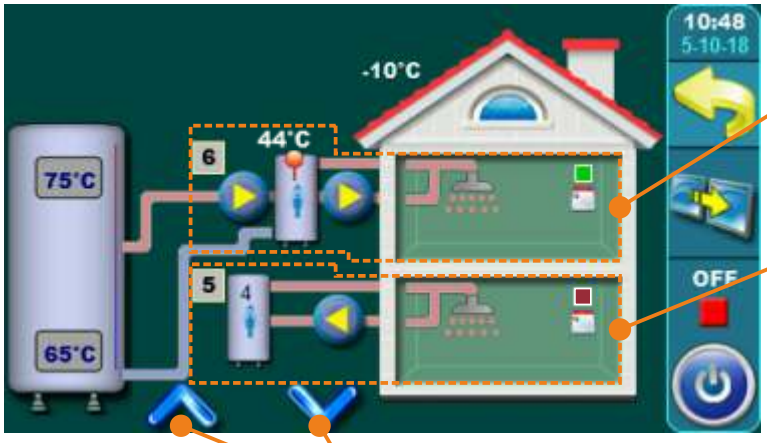
Circuit 2 - Floor heating
room corrector
night mode

Circuit 1 - Radiator heating
room corrector
day mode



Circuit 4 - DHW

Circuit 3 - Constant temp.
room corrector
day mode



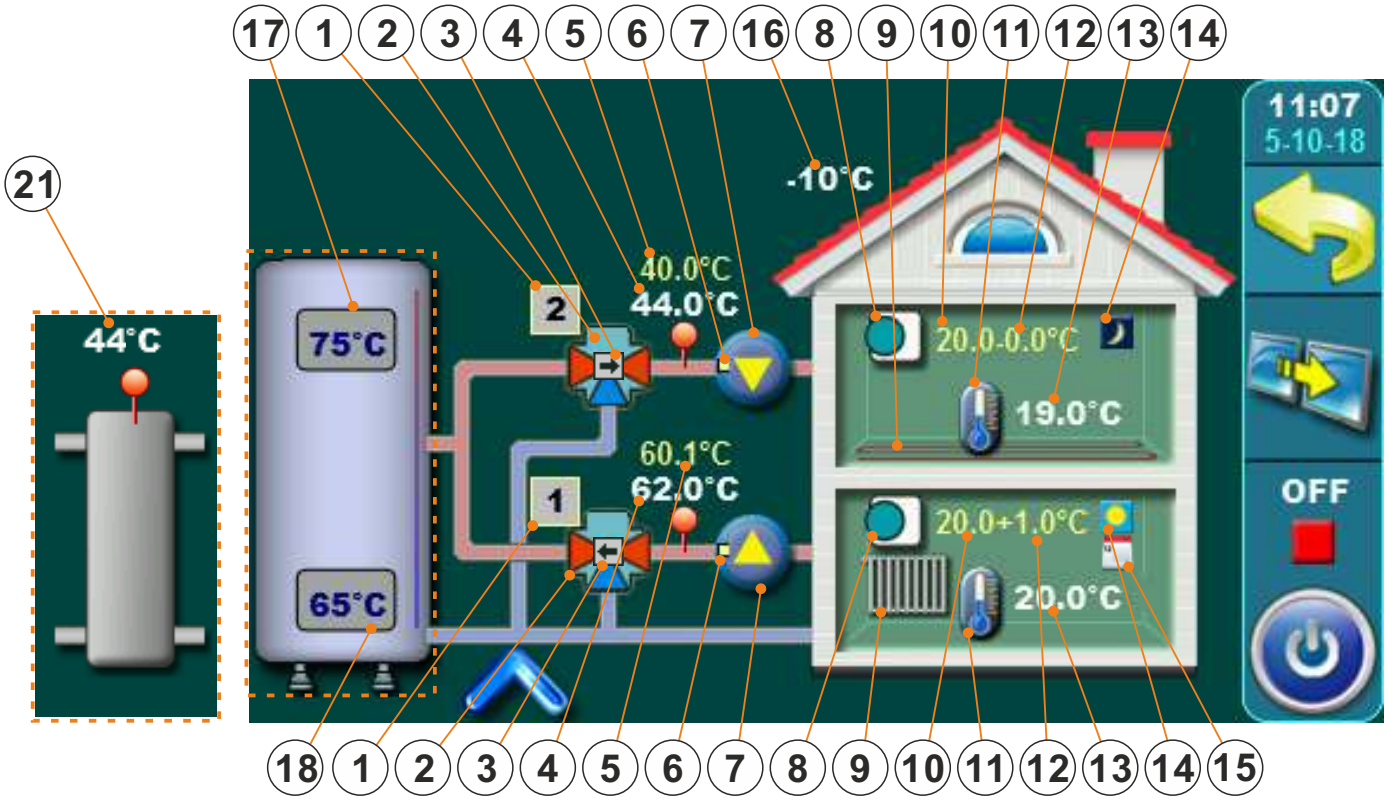
Circuit 6 - DHW + Recirculation
recirculation schedule
(work enabled)

Circuit 5 - Recirculation
recirculation schedule
(work disabled)

Circuits view change

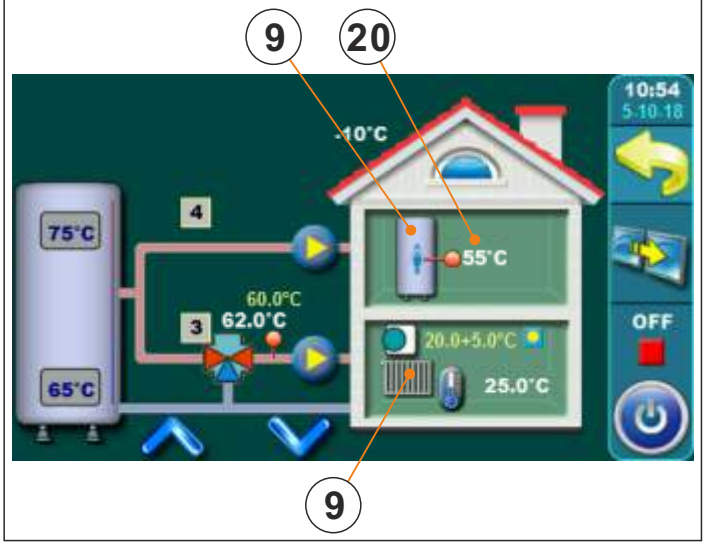
7.2.3. CM2K VIEW EXAMPLES

1. circuit - radiator heating / room corrector / day mode (with schedule)
2. circuit - floor heating / room corrector / night mode

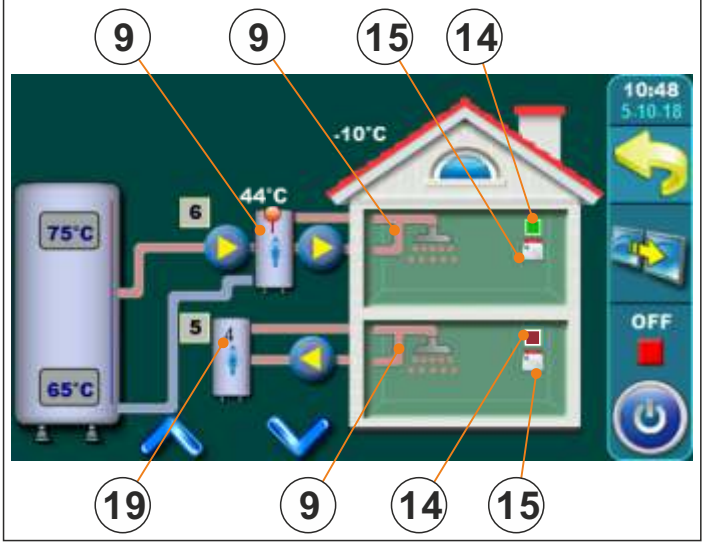


1 - circuit number
2 - mixing valve with actuator
3 - actuator working indication
4 - measured main flow temp.
5 - calculated main flow temp.
6 - pump working demand indication
7 - pump
8 - room corrector
9 - circle heating type
10 - set room temp.
11 - room temp. indication
12 - corrector correction setting
13 - measured rooom temp.
14 - work mode indication
15 - schedule/work enabled/disabled indication
16 - measured outdoor temp.
17 - measured accumulation tank upper temp.
18 - measured accumulation tank lower temp.
19 - indication of DWH tank with enabled recirculation
20 - measured DHW (domestic hot water) tank temp.
21 - measured CRO (hydraulic cross over) temp.

3. circuit - constant temp. / room corrector / day mode
4. circuit - DHW



5. circuit - Recirculation / Recirculation enabled (by schedule)
6. circuit - DHW + Recirculation / Recirculation disabled (by schedule)

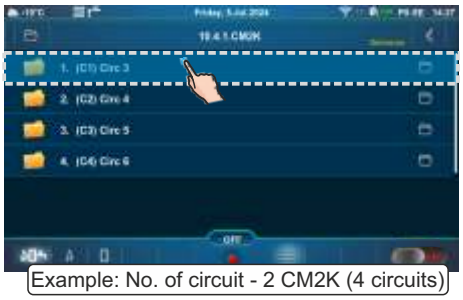


8.0. SETTING CM2K MODULE

Initial settings of operating parameters for CM2K module must be performed by an authorized service technician because module activation (enabling) and certain setting parameters are under **Installation** menu (PIN).
NOTE: next to each parameter it will be marked whether it can be changed by the service technician and the user (S/K) or only by the service technician (S).

8.1. PelTec II Lambda / PelTec-Compact / BIO-SC / ZVB II

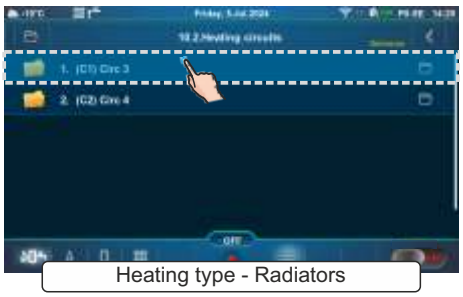
EXAMPLE: view of the **CM2K** menu under **Installation** menu (PIN) - parameters marked (S/K) will also be displayed in the main menu under "Heating circuits" or/and "Domestic hot water" and available for setting by the user.



Example: No. of circuit - 2 CM2K (4 circuits)

Heating type - Disabled

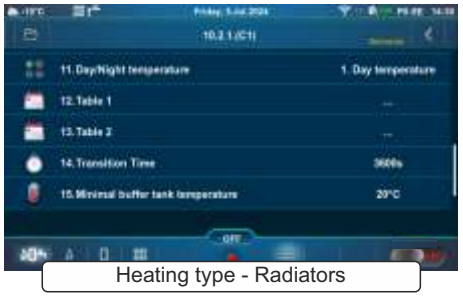
Heating type - Radiators



Heating type - Radiators

Heating type - Radiators

Heating type - Radiators

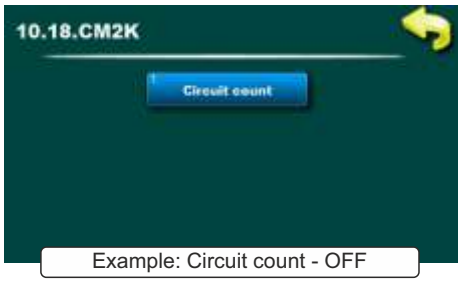


Heating type - Radiators

8.2. PelTec / Cm Pelet-set Touch / BioTec-L / BioTec Plus / EKO-CKS P Unit/ EKO-CKS Multi Plus

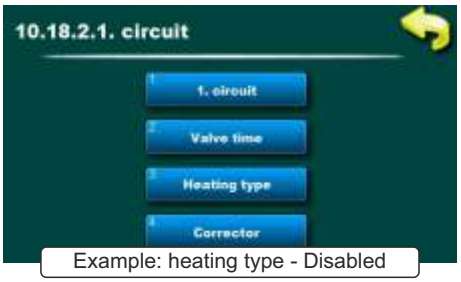
After enabling the CM2K module in main menu new icon (menu) **Regulation/CM2K** will appear. Under this menu user can adjust certain parameters of heating circuits.

EXAMPLE: view of the **CM2K** menu under **Installation** menu (PIN) - parameters with **(S/K)** mark will be displayed also under **CM2K** menu in the main menu so user can adjust them.

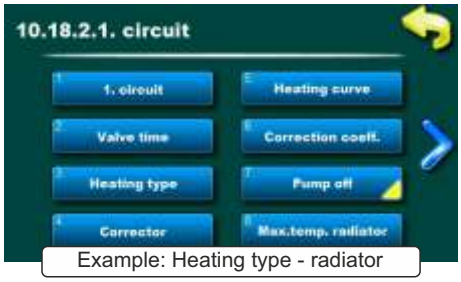


Example: Circuit count - OFF

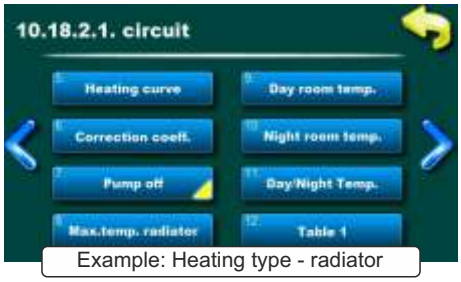
Example: Circuit count - 2 CM2K (4 circuits)



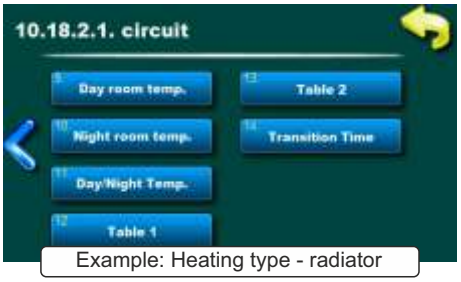
Example: heating type - Disabled



Example: Heating type - radiator



Example: Heating type - radiator



Example: Heating type - radiator

9.0. DESCRIPTION AND VALUES OF THE PARAMETERS BY HEATING CIRCUIT TYPE

9.1. PelTec II Lambda / PelTec-Compact / BIO-SC / ZVB II

NOTE:
- the display of certain parameters in the heating circuit depends on: the corrector (if exist in the heating circuit) and selected type of corrector

(CX) Circ Y (S/K) (in this example - (C1) Circ 3)
Enable and disable heating circuit (in this example (C1) circuit 3).
This parameter is used to enable or disable heating circuit (set parameters of the circuit remain saved).

	Factory	Possible selection
(C1) Circ 3	ON	ON / OFF

Valve time (S)
This parameter defines the time (seconds), which is necessary for the mixing valve to fully open or close.
THIS VALUE MUST BE IN ACCORDANCE TO THE TIME NEEDED FOR THE ACTUATOR TO FULLY OPEN THE VALVE (DEPENDS ON THE ACTUATOR TYPE).

	Factory	Possible selection
Valve time	120 s	10-300 s

Corrector (S)
With this parameter, we adjust whether there is room corrector (thermostat), the type of corrector and external control (control).

	Factory	Possible selection
Corrector	OFF	OFF / CSK (3 wires) / CSK (2 wires) / CSK-Touch / Room thermostat/Reg. control

OFF: The corrector is not used to measure the room temperature and control the operation of the pump.

CSK (3 wires): standard connection of the corrector CSK (Centrometal) with 3 wires, the corrector measures the room temperature and the set room temperature can be corrected from -5 °C to +4.6 °C and the heating circuit can be turned OFF/ON via the corrector. The corrector is connected to pins 1, 2 and 3.

CSK (2 wires): aif there are only 2 wires for connection the corrector CSK (Centrometal), the corrector only gives information about the room temperature, the set room temperature cannot be corrected via the corrector, the heating circuit cannot be be switched ON/OFF via the corrector. The corrector is connected to pins 2 and 3.

CSK-Touch: the CSK-Touch (Centrometal) corrector can be connected wired (2 wires, to Digital inputs) or wirelessly, via the CM WiFi-box. The corrector measures the room temperature, it is possible to correct the set temperature of the room, turn OFF/ON the heating circuit, set the schedule of the heating circuit, switch ON/OFF the boiler, set the temperatures of the boiler, the accumulation (buffer) tank and the DHW tank, set the schedule of the boiler and the DHW circuit, there are messages about errors and warnings on the boiler and heating, if there is a connection to the Internet, the display of the weather forecast...

Room thermostat/Reg. control: control of the heating circuit pump by external regulation such as a voltage-free room thermostat or a floor heating control terminal block. The room temperature cannot be read on the boiler screen. External regulation (control terminal block, room thermostat...) is connected to pins 1 and 2.

Note:
The CSK and CSK-Touch room correctors impact to the set circuit heating curve (i.e. to the calculated main flow temperature) by room temperature correction.

CSK-Touch

The number of the "Installation" menu depends and changes depending on the selected configuration.

1. Enable CSK-Touch in the menu "Additional equipment"
   (Installation -> Commissioning -> Configuring -> Additional equipment -> CSK-Touch)
2. Select the CSK-Touch corrector in the menu "Heating circuits"
   (Heating circuits -> (CX) Circ Y -> Corrector -> CSK-Touch)
3. Select the address of the digital corrector
   (Digital corrector address)
4. To adjust CSK-Touch, use "Info". For a detailed description see "Technical instruction CSK-Touch."
   (Additional equipment -> CSK-Touch -> Info)

Heating curve (S/K)
Setting of the heating curve.
Heating curve is one of the parameters for main flow temperature calculation.

	Factory	Possible selection
Heating curve	1.0	0.1 - 4.0

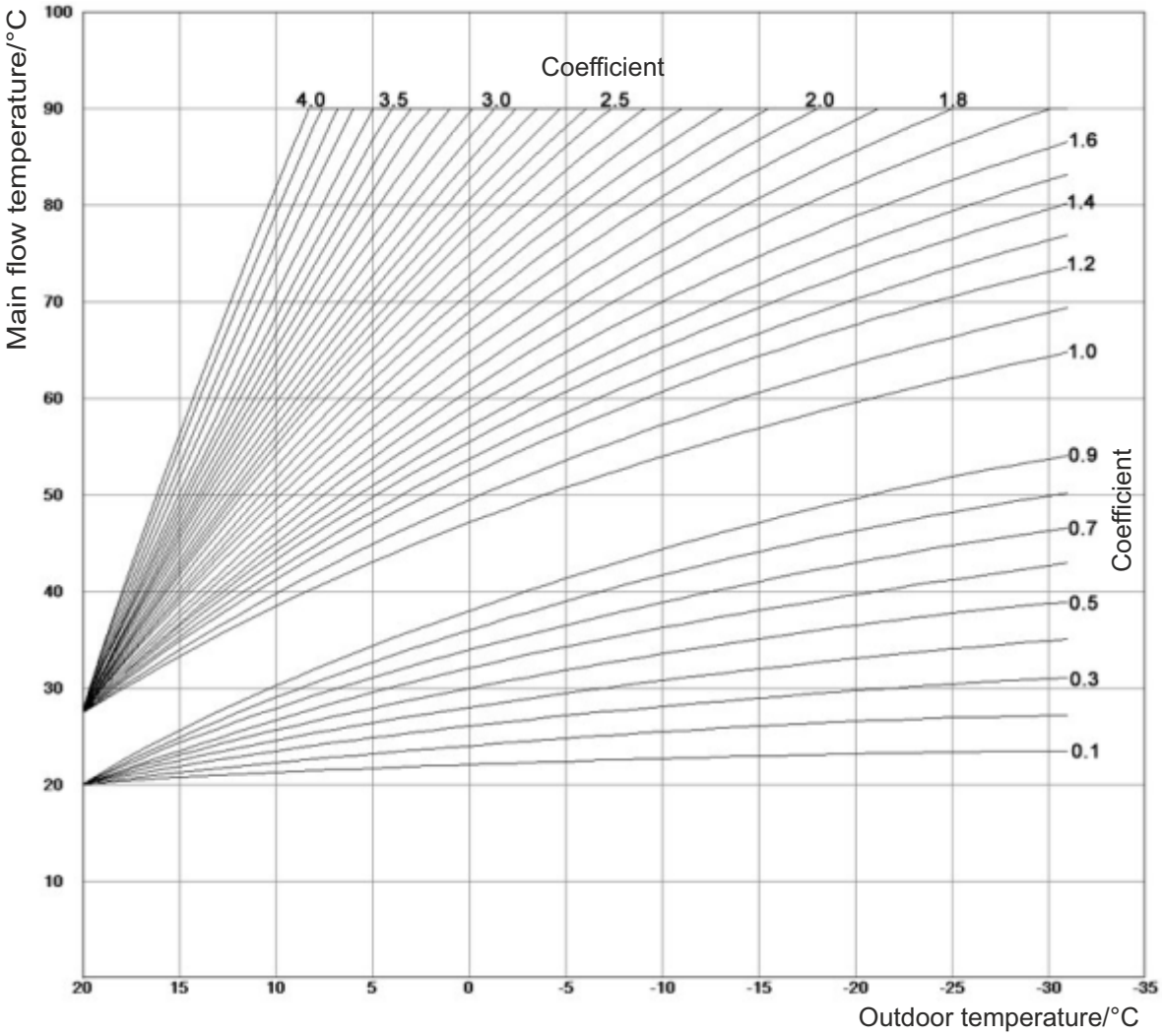


Figure 1: Heating curve

Correction coefficient (S)
Setting the correction coefficient for room corrector.
This parameter is used for setting the correction coefficient of the room corrector which will be used for main flow temperature calculation. Higher value of this parameter, higher effect it will have on main flow temp. calculation. This parameter is used only if room corrector is installed.

	Factory	Possible selection
Correction coefficient	1.0	0.1 - 5.0

Pump OFF (S/K)
This menu is used for setting the parameters for switching off circuit pump according outdoor temperature and settings in this menu (does not affect DHW and Recirculation).
It consists of 3 options: Outdoor temperature / Outdoor temperature difference / Time

Pump OFF - Outdoor temperature (S/K)
Setting the outdoor temperature.
This parameter determines the outdoor temperature at which the heating pump will be switched off.

	Factory	Possible selection
Outdoor temperature	22 °C	0 - 40 °C

Pump OFF - Outdoor temperature difference (S/K)
Setting the outdoor temperature difference.
This parameter is used to set difference on which heating pump will start again and delay time will be reset.

	Factory	Possible selection
Outdoor temperature difference	2 °C	0 - 5 °C

Pump OFF - Time (S/K)
Setting the time.
This parameter is used to set time delay for switching off the pump when temperature for pump switching off is reached.

	Factory	Possible selection
Time	30 min	0 - 10080 min

Day room temperature (S/K)
Setting the day room temperature. This parameter determines the desired daily room temperature of the heating circuit.

	Factory	Possible selection
Day room temp.	20 °C	5.0 - 30.0 °C

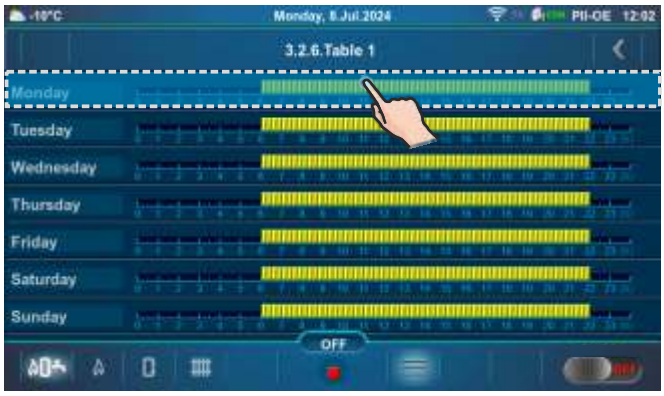
Night room temperature (S/K)
Setting the night room temperature. This parameter determines the desired night room temperature of the heating circuit.

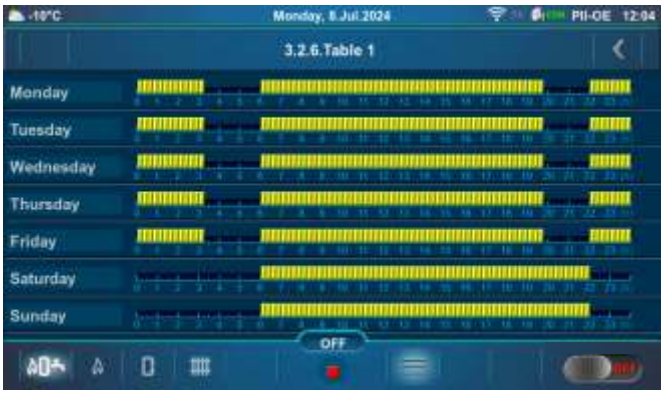
	Factory	Possible selection
Night room temp.	20 °C	5.0 - 30.0 °C

Day/Night temperature (S/K)
Setting the operating mode of heating circuit.
This parameter is used to set the operating mode of heating circuit. Selecting the Day temperature heating circuit always works according to the set day temperature, selecting the Night temperature heating circuit always works according to the set night temperature and by selecting the Table 1/2 heating circuit automatically switches operation mode between set day and set night temperature according to the time set in the Table 1/2.

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

Table 1 / Table 2 (S/K)
Setting the schedule tables with switching the heating circuit operation mode between day and night temperature. For each day, 5 operating mode changes can be set. In the table Day room temperatures are marked in yellow and night room temperatures in black. It is possible to set 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. Two tables can be set, but only one can be active.





"CONFIRM" button

(yellow) **Day room temperature set**

Night room temperature set

Transition time (S)

This parameter is used only when there is no room corrector in the heating circuit, because the controller has no information about the room temperature. This is presumed time in which system will achieve set room temperature between switching from day to night mode and vice versa, i.e. in which time main flow temperature will be optimized for quick transition.

	Factory	Possible selection
Transition time	3600 sec	0 - 18000 sec

Note:

If the "CSK" room corrector (additiona equipment) is connected to the CM2K module, the "Transition time" parameter is not used (it is not functional).

dT pump Off (S)

Setting the room corrector difference.

This parameter is used to set how many °C measured room temperature must be higher than set room temperature to switch off the heating circuit pump (it is used only if a room corrector is installed).

	Factory	Possible selection
dT pump Off	0.5 °C	0.0 - 3.0 °C

dT pump On (S)

Setting the room corrector difference.

This parameter is used to set how many °C measured room temperature must be lower than set room temperature to switch on the heating circuit pump (it is used only if a room corrector is installed).

	Factory	Possible selection
dT pump On	0.5 °C	0.0 - 3.0 °C

Measurement correction - Corrector (S/K)

This parameter is used to adjust the 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).

	Factory	Possible selection
Measurement correction - Corrector	0.0 °C	-5.0 / 5.0 °C

Digital corrector address (S)

This parameter is used to select the unique address of the digital corrector for connecting to the controller.

	Factory	Possible selection
Digital corrector address	Not defined	Not defined, ADDR 1, ADDR 2, ADDR 3, ADDR 4, ADDR 5, ADDR 6, ADDR 7, ADDR 8

Minimal buffer tank temperature (S/K)

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.

	Factory	Possible selection
Minimal buffer tank temperature	20 °C	5 - 75 °C

DHW temperature (S/K)

Setting the DHW tank temperature. This parameter is used to set desired temperature of the DHW (domestic hot water) tank.

	Factory	Possible selection
DHW temperature	50 °C	40 - 80 °C

DHW difference (S/K)

Setting the DHW difference. This parameter is used to set desired difference of the DHW (domestic hot water) tank.

	Factory	Possible selection
DHW difference	5 °C	4 - 40 °C

9.1.1. RADIATORS / FLOOR

(CX) Circ Y (S/K) - see page 28
Valve time (S) - see page 28
Corrector (S) - see page 28
Heating curve (S/K) - see page 29
Correction coefficient (S) - see page 29
Pump OFF (S/K) - see page 29
Pump OFF - Outdoor temperature (S/K) - see page 29
Pump OFF - Outdoor temperature difference (S/K) - see page 29
Pump OFF - Time (S/K) - see page 30
Day room temperature (S/K) - see page 30
Night room temperature (S/K) - see page 30
Day/Night temperature (S/K) - see page 30
Table 1 / Table 2 (S/K) - see page 30
Transition time (S) - see page 31
dT pump Off (S) - see page 31
dT pump On (S) - see page 31
Measurement correction - Corrector (S/K) - see page 31
Digital corrector address (S) - see page 31
Minimal buffer tank temperature (S/K) - see page 31

Radiator maximal temperature / Floor heating maximal temperature (S)
Setting the main flow maximum temperature. This parameter is used to set mixing circuit main flow maximum temperature.

	Factory	Possible selection
Radiator maximal temperature	90 °C	20 - 90 °C
Floor heating maximal temperature	40 °C	20 - 55 °C

9.1.2. CONSTANT TEMPERATURE

(CX) Circ Y (S/K) - see page 28
Valve time (S) - see page 28
Corrector (S)- see page 28
Heating curve (S/K) - see page 29
Correction coefficient (S) - see page 29
Pump OFF (S/K) - see page 29
Pump OFF - Outdoor temperature (S/K) - see page 29
Pump OFF - Outdoor temperature difference (S/K) - see page 29
Pump OFF - Time (S/K) - see page 30
Day room temperature (S/K) - see page 30
Night room temperature (S/K) - see page 30
Day/Night temperature (S/K) - see page 30
Table 1 / Table 2 (S/K) - see page 30
Transition time (S) - see page 31
dT pump Off (S) - see page 31
dT pump On (S) - see page 31
Measurement correction - Corrector (S/K) - see page 31
Digital corrector address (S) - see page 31
Minimal buffer tank temperature (S/K) - see page 31

Day constant temperature (S/K)
Setting the constant temperature of the circuit's main flow for the daily operation mode. This parameter determines the desired temperature of the main flow for the daily operation mode.

	Factory	Possible selection
Day constant temperature	60 °C	20 - 90 °C

Night constant temperature (S/K)
Setting the constant temperature of the circuit's main flow for the night operation mode. This parameter determines the desired temperature of the main flow for the night operation mode.

	Factory	Possible selection
Night constant temperature	40 °C	20 - 90 °C

9.1.3. DHC

(CX) Circ Y (S/K) - see page 28
Corrector (S) - see page 28
Pump OFF (S/K) - see page 29
Pump OFF - Outdoor temperature (S/K) - see page 29
Pump OFF - Outdoor temperature difference (S/K) - see page 29
Pump OFF - Time (S/K) - see page 30
Day room temperature (S) - see page 30
Night room temperature (S) - see page 30
Day/Night temperature (S) - see page 30
Table 1 / Table 2 (S) - see page 30
Measurement correction - Corrector (S/K) - see page 31
Digital corrector address (S) - see page 31
Minimal buffer tank temperature (S/K) - see page 31

9.1.4. DHW

(CX) Circ Y (S/K) - see page 28
DHW temperature (S/K) - see page 31
DHW difference (S/K) - see page 31

Domestic hot water schedule (DHW) (S/K)
Setting the schedule for DHW. With this parameter, switching times can be activated or deactivated, and the active table can be selected according to which, the switching times will work.

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

Table 1 / Table 2 (S/K)
Setting the DHW schedule tables. This parameter is used to set the tables according to which the switching times will work. Only one table can be active.

9.1.5. DHW + REC

(CX) Circ Y (S/K) - see page 28
DHW temperature (S/K) - see page 31
DHW difference (S/K) - see page 31

Domestic hot water schedule (DHW) (S/K)
Setting the schedule for DHW. With this parameter, switching times can be activated or deactivated, and the active table can be selected according to which, the switching times will work.

	Factory	Possible selection
Domestic hot water schedule (DHW)	OFF	OFF / Table 1

Table 1 (S/K)
Setting the schedule table with switching the heating circuit operation mode between day and night temperature. For each day, 5 operating mode changes can be set. In the table Day room temperatures are marked in yellow and night room temperatures in black. It is possible to set 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.

Recirculation (S/K)
Activation of recirculation: it is possible to enable or disable recirculation without changing other parameters.

	Factory	Possible selection
Recirculation	ON	ON / OFF

Recirculation Time On (S)
Recirculation pump operation time. Setting the recirculation pump operation time when recirculation is active.

	Factory	Possible selection
Recirculation Time On	5 min	0 - 1440 min

Recirculation Time Off (S)
Recirculation pump stop time.
Setting the recirculation pump stop time when recirculation is active.

	Factory	Possible selection
Recirculation Time Off	5 min	0 - 1440 min

Recirculation schedule (S/K)
The possibility of activating and deactivating recirculation switching times..

	Factory	Possible selection
Recirculation schedule	OFF	ON / OFF

Recirculation table (S/K)

Setting the table of recirculation operation.

For each day of the week, it is possible to set 5 time intervals during which recirculation will operate and 5 time intervals during which it will not operate (T1-T5). Time intervals in which recirculation will operate are marked in yellow, while the intervals in which recirculation will not operate are marked in black. It is possible to set 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 recirculation schedule and confirm by pressing the "CONFIRM" button.

"CONFIRM" button

(yellow) **Recirculation operation enabled**

Recirculation operation disabled

9.2. PelTec / Cm Pelet-set Touch / BioTec-L /BioTec Plus / EKO-CKS P Unit/ EKO-CKS Multi Plus

NOTES:
- at initial circle view (before adjusting) are only certain parameters shown (X. circuit / Valve time / Heating type / Corrector). After adjusting the circuit heating type, in main menu of heating circuit, other parameters will be shown according the set heating type.
- certain parameters depends of the boiler type to which CM2K is installed and view is set according to this. Because of this, certain parameters are shown or not shown depending of the boiler type.

Circuit count (S)
This parameter is used to set number of CM2K modules i.e. number of circuits (1 CM2K = 2 circuits)
By selecting and confirmation of CM2K modules this parameter is enabled.

Factory setting		*setting*
Circuit count	OFF	OFF / 1xCM2K... 4xCM2K

X. circuit (S/K) (in this example - 1. circuit)
Enable and disable heating circuit.
This parameter is used to enable or disable heating circuit (set parameters are stored).

Factory setting		*setting*
1. circuit	ON	OFF/ON

Valve time (S/K)
Setting the mixing valve actuator speed.
This parameter is used for setting the speed of the mixing valve actuator speed for work of 90° (open/close). It must be set according the installed mixing valve actuator speed.

Factory setting		*setting*
Valve time	120 sec	10-300 sec

Heating type (S)
Setting the heating circuit type.
This parameter is used to set heating circuit type. After setting the heating circuit type, in main menu of the circuit, other setting parameters will be shown according the heating circuit type.

Factory setting		*setting*
Heating type	*Disabled*	Disabled/Radiator/Floor/Constant temp./DHW/*Pool/Recirculation/DHW+Recirculation

* NOT USED

Corrector (S)
With this parameter, we adjust does if exist a room corrector (thermostat) or not, the type of corrector, and external control.

Factory setting		*setting*
Corrector	OFF	OFF / CSK (3 wires) / CSK (2 wires) / CSK-Touch / Reg. control

OFF: The corrector is not used to measure the room temperature and control the operation of the pump.

CSK (3 wires): standard connection of the corrector CSK (Centrometal) with 3 wires, the corrector measures the room temperature and the set room temperature can be corrected from -5°C to +4.6°C and the heating circuit can be turned OFF/ON via the corrector. The corrector is connected to pins 1, 2 and 3.

CSK (2 wires): if there are only 2 wires for connecting the corrector CSK (Centrometal), the corrector only gives information about the room temperature, the set room temperature cannot be corrected via the corrector, not can the heating circuit be switched ON/OFF via the corrector. The corrector is connected to pins 2 and 3.

CSK-Touch: the CSK-Touch (Centrometal) corrector can be connected wired (2 wires, to Digital inputs) or wirelessly, via the CM WiFi-box. The corrector measures the room temperature, it is possible to correct the set temperature of the room, turn OFF/ON the heating circuit, set the schedule of the heating circuit, switch ON/OFF the boiler, set the temperatures of the boiler, the accumulation tank and the DHW tank, set the schedule of the boiler and the DHW circuit, there are messages about errors and warnings on the boiler and heating, if there is a connection to the Internet, the display of the weather forecast...

Reg. control: control of the heating circuit pump by external regulation such as a floor heating control terminal block or a voltage-free room thermostat. The room temperature cannot be read on the boiler screen. External regulation (control terminal block, room thermostat...) is connected to pins 1 and 2.

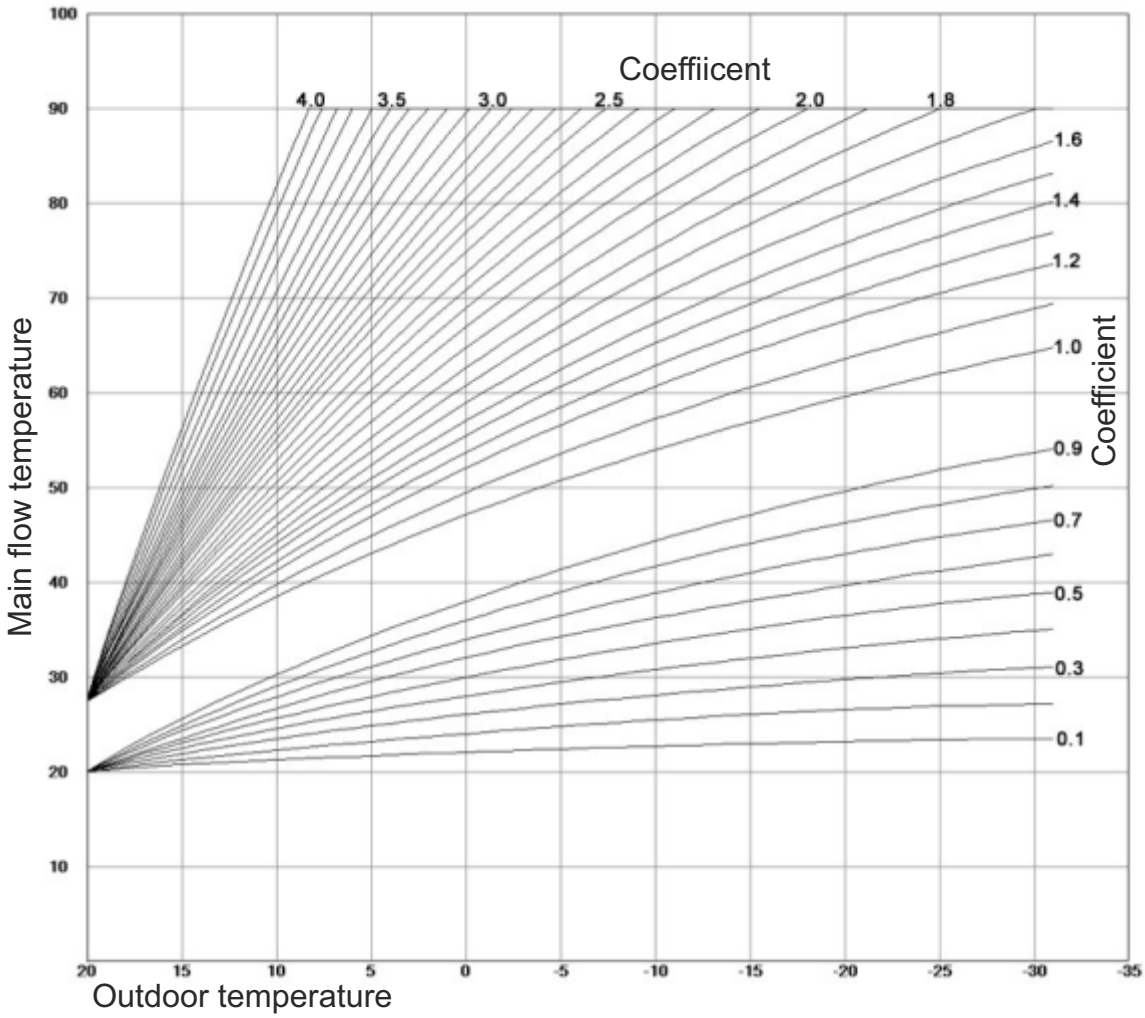
Note:
The CSK and CSK-Touch room correctors are related to the set circuit heating curve (ie to the calculated main flow temperature) by room temperature correction.

9.2.1. RADIATOR / FLOOR

X. circuit (S/K) - see page35
Valve time (S) - see page 35
Heating type (S) - see page 35
Corrector (S) - see page 35

Heating curve (S/K)
Setting of the heating curve.
Heating curve is one of the parameters for main flow temp. calculation.

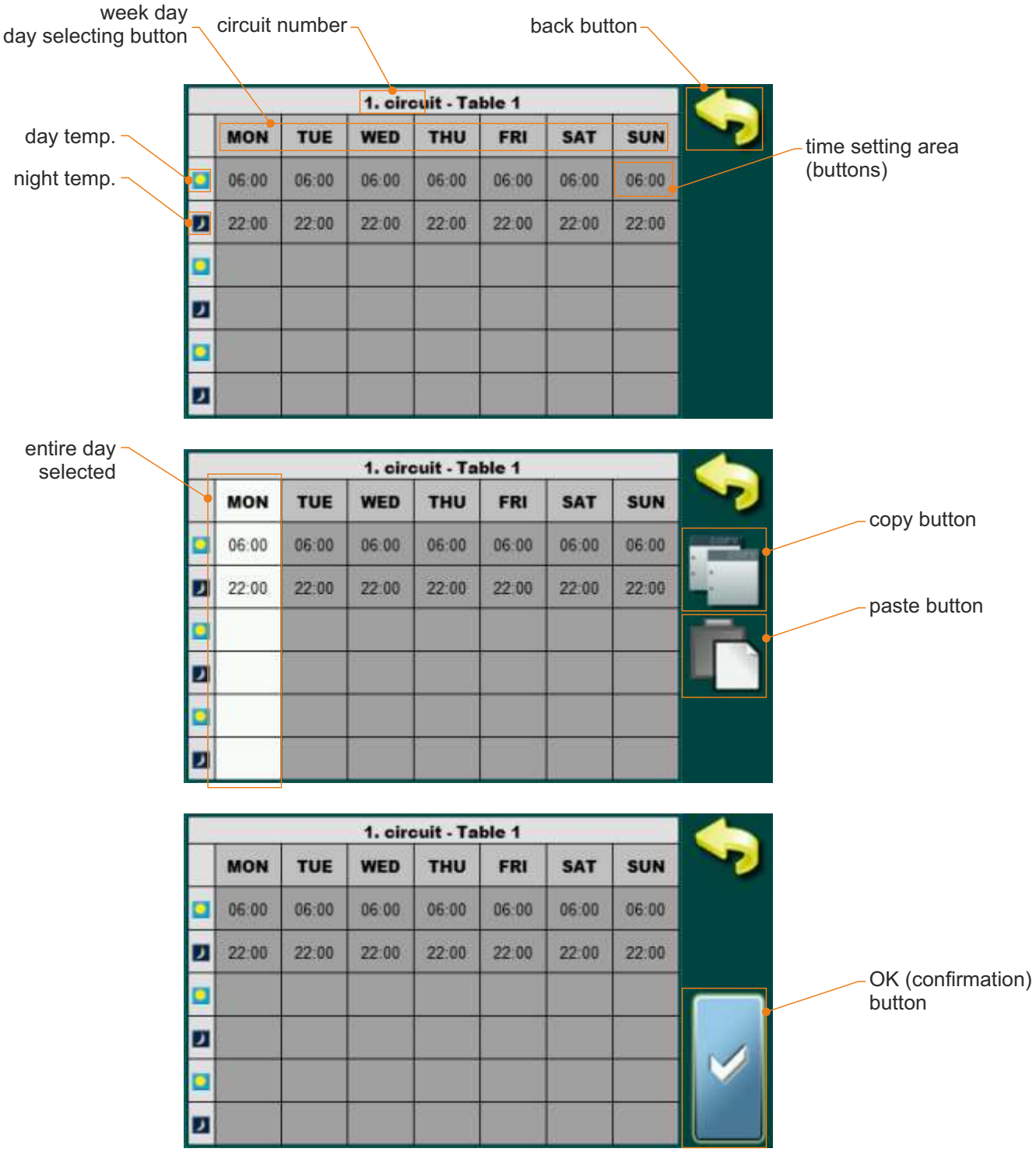
Factory setting		*setting*
Heating curve	1.0	0.1-4.0



Day / Night temp. (S/K)
Setting the heating circuit mode.
This parameter is used to set heating circuit mode. Selecting the Day temp. heating cirucuit always works according set day temp., selecting the Night temp. heating circuit always works accroding set night temp. and by selecting the Table 1/2, heating circuit automaticaly switches mode between set day and set night temp. according the time set in the Table 1/2.

Factory setting		*setting*
Day/night temp.	Day temp.	Day temp. / Night temp. / Table 1 / Table 2

Table 1 / Table 2 (S/K)
Setting the schedule tables with heating circuit mode switching between day and night temp.. For each day 3 mode switching can be set. All settings from one day can be selected and copy/paste to any another day of the week. After any adjustment they must be confirmed by pressing OK button to save the settings. Two tables can be set but only one can be active.



Correction coefficient (S/K)
Setting the correction coefficient for room corrector.
This parameter is used for setting the correction coefficient of the room corrector which will be used for main flow temp. calculation. Higher value of this parameter, higher effect it will have on main flow temp. calculation. This parameter is used only if room corrector is installed.

Factory setting		*setting*
Correction coeff.	1.0	0.1 - 5.0

Pump off (S/K)
This menu is used for setting the parameters for switching off circuit pump according outdoor temperature and settings in this menu (doesn't affect DHW and Recirculation).
It has 3 options: **Outside temp.** / **Difference** / **Time**

Toutside (S/K)
Setting outside temperature.
This parameter is used to set according which outside temp. circuit pump will stop.

Factory setting		*setting*
Toutside	20°C	0 - 40°C

Out temp. difference (S/K)
Setting the difference.
This parameter is used to set difference on which circuit pump will start again and delay time will be reset.

Factory setting		*setting*
Out. temp. difference	2°C	0 - 5°C

Time (S/K)
Setting the time.
This parameter is used to set time delay for switching off the circuit pump when temperature for pump switching off is reached.

Factory setting		*setting*
Time	30 min	0 - 600 min

Min. temperature radiator / floor / constant temp. (S)
Setting the main flow min. temp.
This parameter is used to set mixing circuit main flow min. temp..

Factory setting		*setting*
Min. temp. radiator/floor/constant temp.	20°C	20 - 90°C

Max. temperature radiator / floor / constant temp. (S)
Setting the main flow max. temp.
This parameter is used to set mixing circuit main flow max. temp..

Factory setting		*setting*
Max. temp. radiator/floor/constant temp.	90°C	20 - 90°C

Day room temperature (S/K)
Setting the day room temp.
This parameter is used to set desired heating circuit day room temperature.

Factory setting		*setting*
Day room temp.	20°C	5.0. - 30.0°C

Night room temperature (S/K)
Setting the night room temp.
This parameter is used to set desired heating circuit night room temperature.

Factory setting		*setting*
Night room temp.	20°C	5.0. - 30.0°C

dT pump off (S)
Setting the room corrector difference.
This parameter is used to set how many °C measured room temp. must be higher than set room temp. to switch off the circuit pump (only if room coreector is installed).

Factory setting		*setting*
dT pump Off	0.5°C	0.0. - 3.0°C

dT pump on (S)
Setting the room corrector difference.
This parameter is used to set how many °C measured room temp. must be lower than set room temp. to switch on the circuit pump (only if room coreector is installed).

Factory setting		*setting*
dT pump On	0.5°C	0.0. - 3.0°C

Transition time (S/K)
This parameter is used only when there isn't room corrector installed because regulation doesn't have info regarding measured room temp. This is presumed time in which system will achieve set room temp. between switching from day to night mode and vice versa, i.e. in which time main flow temp. will be optimized for quick transition.

Factory setting		setting
Transition time	3600 sec	0 - 18000 sec

Note:
If room corrector CSK (additional equipment) is connected to the CM2K, this parameter is not used.

9.2.2. CONSTANT TEMPERATURE

X. circuit (S/K) - see page 35
Valve time (S) - see page 35
Heating type (S) - see page 35
Corrector (S) - see page 35
Pump off (S/K) - see page 38
Day room temp. (S/K) - see page 38
Night temp. (S/K) - see page 38
Day / Night temp. (S/K) - see page 36
Table 1/2 (S/K) - see page 37
dT pump off (S) - see page 38
dT pump on (S) - see page 38
Transition time (S/K) - see page 39

Day constant temp. (S/K)
Setting the circuit main flow constant temp. for day mode.
This parameter is used to set desired circuit main flow constant temp. for day mode.

Factory setting		setting
Day constant temp.	60°C	20 - 90°C

Night constant temp. (S/K)
Setting the circuit main flow constant temp. for night mode.
This parameter is used to set desired circuit main flow constant temp. for night mode.

Factory setting		setting
Night constant temp.	60°C	20 - 90°C

9.2.3. DHW

X. circuit (S/K) - see page 35
Heating type (S) - see page 35

DHW Temperature (S/K)
Setting the DHW tank temperature.
This parameter is used to set desired DHW tank domestic hot water) temp.

Factory setting		setting
DHW temp.	50°C	40 - 80°C

DHW difference (S/K)
Setting the DHW difference.
This parameter is used to set desired DHW tank (domestic hot water) difference.

Factory setting		setting
DHW difference	5°C	4 - 40°C

DHW schedule (S/K)
Setting the schedule for DHW.
this parameter is used to set if DHW schedule is active or not and select active Table 1/2 according to which schedule will work.

Factory setting		setting
DHW schedule	OFF	OFF / Table 1 / Table 2

Table1 / Table 2 (S/K)
Setting the DHW schedule tables.
This parameter is used for setting the tables according DHW schedule will work. Only one table can be active.

9.2.4. RECIRCULATION

X. circuit (S/K) - see page 35
Heating type (S) - see page 35

DHW circuit (S)
Setting the DHW circuit for which recirculation will be enabled.

DHW circuit which has circulation installed must be selected. Selecting the DHW circuit must be done according how this circuit is regulated (boiler or one of CM2K circuits).

Sensor installed (S)
NOT USED

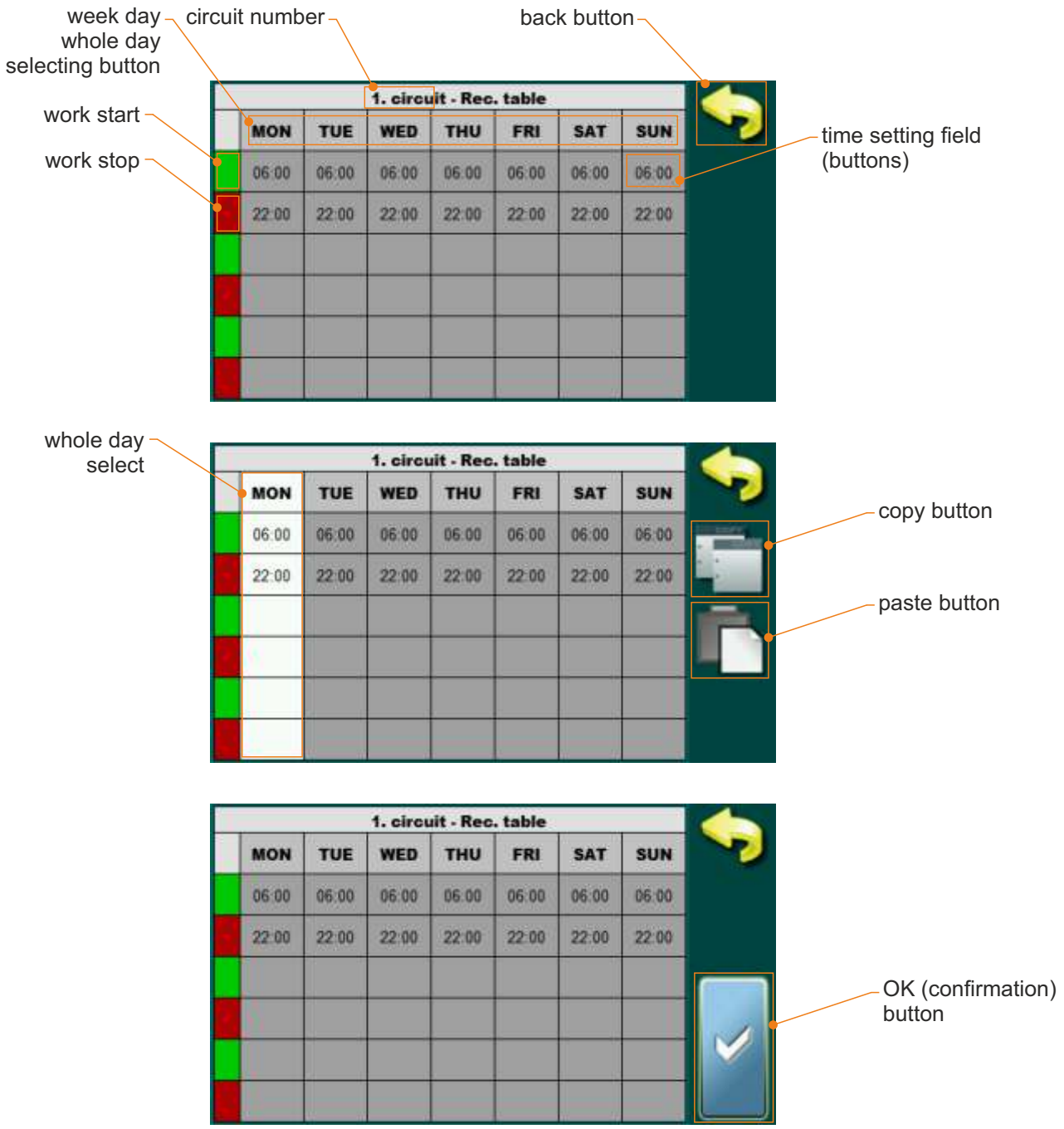
Time On rec. (S/K)
Recirculation pump work time.
Setting the recirculation pump work time when recirculation is active.

Factory setting		*setting*
Time On rec.	5 min	0 - 1440 min

Time Off rec. (S/K)
Recirculation pump stop time.
Setting the recirculation pump stop time when recirculation is active.

Factory setting		*setting*
Time Off rec.	5 min	0 - 1440 min

Recirculation table (S/K)
Recirculation work and stop table.



9.2.5. DHW + RECIRCULATION

X. circuit (S/K) - see page 35
Heating type (S) - see page 35
DHW temp. (S/K) - see page 39
DHW difference (S/K) - see page 39
Time On rec. (S/K) - see page 40
Time Off rec. (S/K) - see page 40
DHW schedule (S/K) - see page 39
Table 1 (S/K) - see page 37
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