Owner’s Manual

for heat pumps water-water, brine-water and air-water

The instructions for use have to be handed over to the end user.

ENG

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KRONOTERM

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Content

1 Instructions for the use of the documentation

Before first use, read the instructions for use thoroughly and learn its content. You will learn the purpose, functions and the handling procedures for the device.

In case of malfunctions of the heating system first consult section 10 and consult your installer who will find the reason for the malfunction and resolve it. In case the malfunction cannot be resolved, he will contact the customer service of the manufacturer who will resolve the malfunction.

1.1 To the buyer

We thank you for the trust you have shown by buying our heat pump. With the purchase of the heat pump KRONOTERM you have become the owner of a modern, high-quality and highly efficient device for heating and cooling which saves energy, uses renewable sources and thus maintains the environment clean. Future generations will be grateful for your decision.

1.2 Important information

The instructions are written to give you information on all the needed activities before the first and further use. The manual describes the process of setting up and use of the device.

NOTE
In case the product shall be given to a third person for use, the manual has to be handed over to them as well.

Incorrectly set parameters of the control unit can lead to stoppage or incorrect operation of the device. To reduce risk the manual points out important information with the use of symbols. Follow all general safety instructions and warnings connected with the operation.

1.3 Symbols

This symbol marks important information for the user.

A **NOTE** is a notification which holds important information regarding requirements of the manufacturer and the device.

1.4 Attached documentation

Attached to the device you can find the following documentation which you are required to read before the first use of the device:

- **Owner's manual** intended to familiarise the user how to operate the device.
- **The Installation manual** intended to familiarise the installer end user with the guidelines, requirements and warnings for correct installation and maintenance of the device.
- **Instructions for installing the control unit** intended to familiarise the electrician and user with the correct electrical connection, requirements and warnings as well as maintenance of the device.
- **Warranty** is intended for the user to prove eligibility for free repair of the device in the warranty period in case of malfunction.

1.5 Glossary of used terms and conceptions

In case of unfamiliar terms in the document, you can find the explanation here.

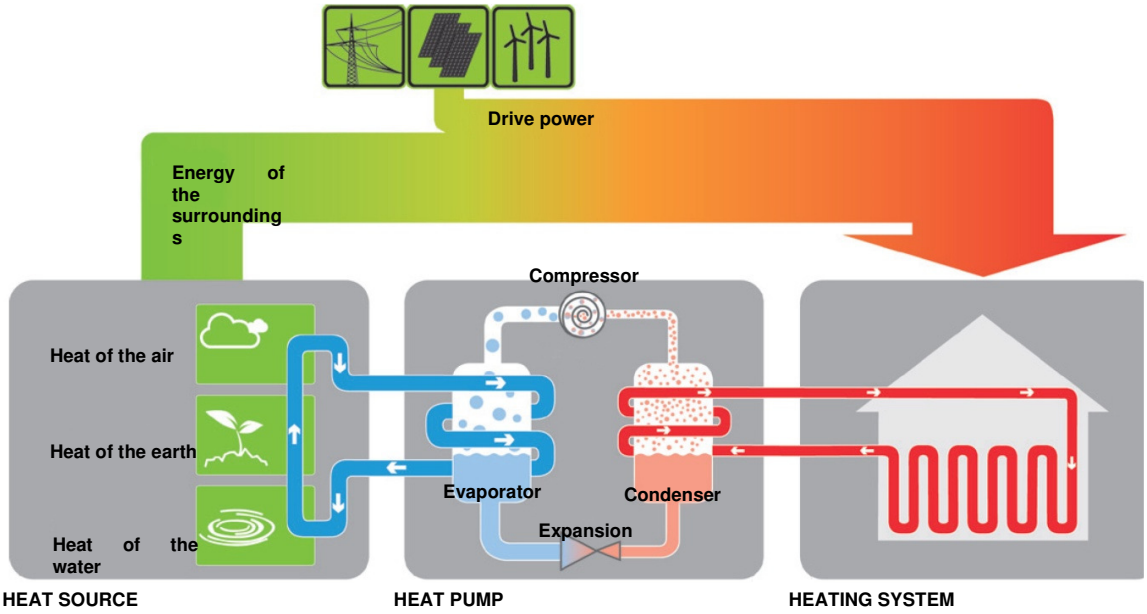
- ALTERNATIVE SOURCE: The heat source is used for systems with solar collectors, fireplaces and wood stoves when we either do not have a heat source on hand at any moment or an automatic switch through the signal from the controller of the device (i.e. in a wood stove) is not possible.
- ADDITIONAL SOURCE: The external heat source found alongside the device (i.e. oil/gas/pellet/external heater furnace) or internal heat source (electrical flow heater) which is factory integrated in certain types of devices. The spare or additional source can be used as “assistance” to the device under the so-called bivalent point when the capacity of the device does not suffice for maintaining the desired temperature. It can be used alongside the device alternatively (the either-or system) – the switch is automatic.
- BACKUP SOURCE: A function, which turns on the selected additional source in the event of an error or a remote shutdown. The device operates in antifreeze mode. The device will turn off following the confirmation of an error or interrupt signal from the remote off.

- The flow heater which is installed in the device and turns on in the case of device malfunction (in the so-called antifreeze programme). This ensures temporary operation for bridging the time until an authorised person from the service company arrives and corrects the error.
- HEATING WATER: The liquid which flows inside the heating system (pipelines, floor, wall and radiator heating).
- DHW: The water intended for sanitary use (cleaning, showering, washing ...).
- HEAT PUMP (HP): The device which takes energy from the environment, uses electric energy to drive the device and releases heat from space heating and DHW. In the text below the term ‘device’ will be used for the heat pump.
- HW: The device takes heat from the earth.
- AW: The device takes heat from the air.
- WW: The device takes heat from groundwater.
- Parameter ***NORMAL***: The desired temperature of heating in the ***Normal*** mode of operation.
- Parameter ***ECO***: Lowering the desired temperature in the ***Eco*** mode of operation.
- Parameter ***COMFORT***: Raising the desired temperature in the ***Comfort*** mode of operation.
- Operator: Is a natural or legal person who has real control over the technical operation of the products and equipment covered in the directive (EU) No. 517/2014; a member state can impose operator obligations on the owner in clearly defined and specific cases.

2 General facts about the heat pump

2.1 What is a heat pump

A heat pump is a device which uses renewable energy sources (air, earth and water) and enables us economical and ecologically friendly heating and cooling of the building as well as heating DHW. Whether it is intended for internal or external installation depends on the device itself. Heat pump operation:



The device takes heat from the environment or source (groundwater, earth, air) and transfers it to the water in the heating system. This is achieved with the process of evaporating the coolant in the evaporator which is a heat exchanger especially designed for this task. This coolant is compressed in the compressor in the next circuit to a higher pressure which makes the temperature of the coolant rise to a temperature higher than the temperature of the heated water. This coolant then condenses in the water-cooled condenser where the heat taken from ground water/earth/air and electrical energy needed for the operation of the compressor are transmitted to the heating water. The heating water can be heated up to 65 degrees Celsius and more through this process (depending on the operating conditions of the device); this makes the devices suitable for renovating older heating systems.

3 TERMOTRONIC controllers

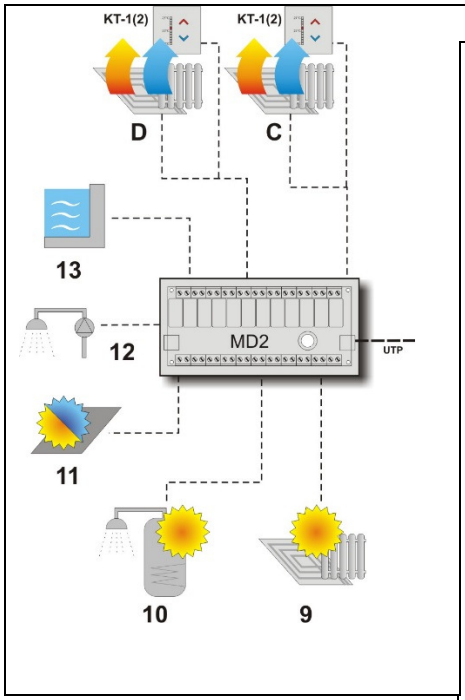
3.1 General

TERMOTRONIC is a self-adapting controller for controlling the heat pump (hereinafter the DEVICE) and the heating system. It controls the operation of the device so as to ensure the most efficient way to produce the desired temperature of the building based on the needs of the heating system and outside temperature.

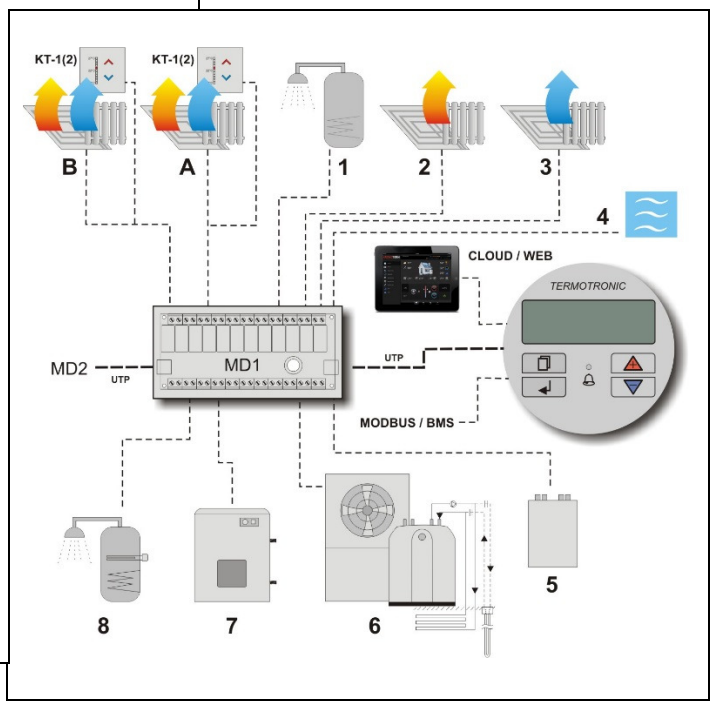
The TERMOTRONIC controller offers controlling of the device and the heating system of the building (no more than 4 heating circuits) as well as controlling the heating with an alternative heat source, passive cooling (in the case of using the earth-water or water-water device), active cooling with the device, heating of pools, heating DHW with the device and/or alternative heat source and/or backup source.

Possibility of controlling the elements of the heating system with the controller TERMOTRONIC:

EXPANSION I/O MODULE



BASIC I/O MODULE



MARK	DESCRIPTION
CLOUD/WEB	Remote control of heating system via computers and smart mobile devices.
KT-1(2)	Room collectors KT-1(2) – control unit of the heating circuit.
A, B, C, D	Heating circuit (heating/cooling).
1	DHW heating.
2	Room heating.
3	Room cooling.
4	Weather controlled room heating.
5	Passive room cooling.
6	Heat pump control.
7	Control of additional source (DHW, electrical heater ...).
8	Control of auxiliary electrical heater for DHW.
9	Control of alternative heating source (SER - solar energy receivers or solid fuel DHW).
10	Control of alternative heating source for DHW (SER or solid fuel DHW).
11	SER cooling.
12	Warm DHW circulation
13	Swimming pool heating.
MD1	Basic input-output module MD1.
MD2	Expansion input-output module MD2.
Modbus	Communication with the control system of the building (BMS) or smart installation.

For performing the connection to the TERMOTRONIC controller see chapter “Connection of the internal unit” in the installation manual.

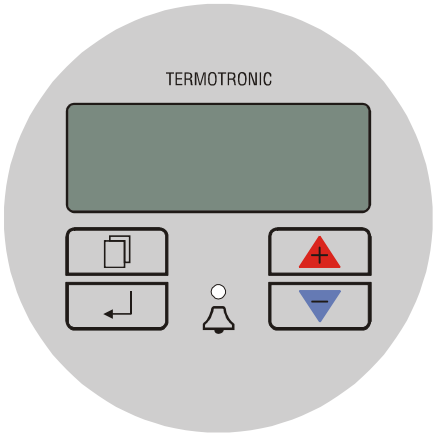
In addition to the listed control options the TERMOTRONIC controller also has a number of safety mechanisms built in which protect the device and the heating system from malfunction and defects.

3.2 Controlling the device and heating system

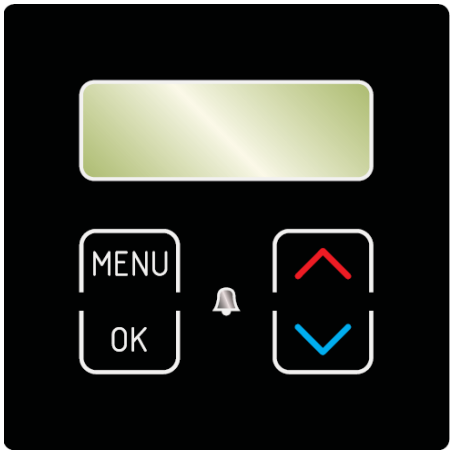
The device and heating system can be controlled with the use of 4 buttons on the controller interface TERMOTRONIC. The controller interface has a 4-line LCD screen which displays the current state of the device or controller and a LCD light indicator of malfunctions in the operation of the device  (ALARM).

The controller interface TERMOTRONIC in devices:

WPL in WPG 7 – 21 kW



WPLV, WPL + HM, in WPG 30 – 110 kW



BUTTON	BUTTON FUNCTION
	▸ **MENU**: Scrolling through the main menu and sub-menus.
	▸ **ENTER**: On, off, accessing the menu, accessing the settings and confirming selected values.
	▸ »**+**«: Selecting the values, scrolling up the menus and sub-menus.
	▸ »**-**«: Selecting the values, scrolling down the menus and sub-menus.
	▸ **ALARM**: Indicator of device malfunction.

NOTE

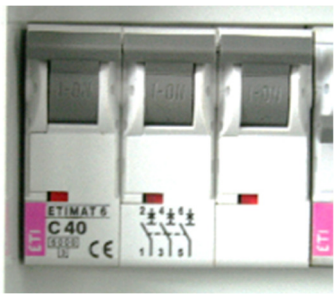
Below only the following symbols are used in grey colour:  (MENU),  (ENTER),  (+),  (-) and  (ALARM).

3.3 Activating the electrical power supply of the device

The device's electrical supply is turned on by switching:

- The main switch into position "1" and
- Circuit breakers of the electric power supply of the device (1-ON).

The main switch of the device earth-water, Water-water (WPG).



Circuit breakers for the power supply of the air-water device (WPL, WPLV).

By switching on the **main switch** or **circuit breaker** of the electrical supply the device is live but still not working. After the startup delay time the device turns on.

3.4 Activating the device

After switching on the main switch or circuit breaker the interface screen displays the current state of the device - **standby** for the short delay time. The device is not operational yet.

Standby.....	
Heating	**35.5°C**
Return	**35.3°C**
DHW	**49.0°C**

NOTE
The temperature values can differ from the ones displayed on the picture. This also applies for all following pictures.

NOTE
If before shut down the device was in a state of HP STOP (***HP STOP***), it returns to the HP STOP mode after switching on the circuit breakers. The display displays ***HP STOP***.
The device is turned on by holding the (ENTER) key ↵ for 3 seconds - see below for more information.

3.5 Operation of the device

After the start-up delay time the device starts operating in the selected mode (heating, cooling or heating DHW) according to present needs. The display displays the status:

Heating.....	
Heating►	**35.5°C**
Return	**32.3°C**
DHW	**49.0°C**

In the case the set temperature parameters (***Heating, Return, DHW*** ...) is reached, the device displays ***Standby.***

NOTE
Depending on the type of device the delay lasts from 30 to 300 seconds.

3.6 Standby

The device enters standby state when the values of the selected parameters ***Heating, Cooling, DHW*** , device protection ... are reached. The display of the interface displays the status:

Standby.....	
Heating	**35.5°C**
Return	**35.3°C**
DHW	**49.0°C**

NOTE
The device enters the standby mode also when any operation protection is active (compressor start-up delay, insufficient water flow); see chapter 9.

3.7 Operation HP STOP

In case you want to shut down the device, press the (ENTER) key and hold it for 3 seconds. The operation of the device is interrupted but the device is still live.

HP STOP.....	
Heating	**35.5°C**
Return	**32.3°C**
DHW	**49.0°C**

The device can be turned on again by pressing the (ENTER) key and holding it for 3 seconds.

3.8 Device HP STOP

The device can be disconnected from the power supply by switching the main switch to position "**0**" or disconnecting the circuit breaker (the electrical power supply fuses).

NOTE
WPL devices must not be disconnected from the power supply for a longer time (via the main switch or circuit breakers) because by doing so you disable the devices protection against water freezing in the system which leads to complete device malfunction. Here the requirements from the installation manual have to be considered.

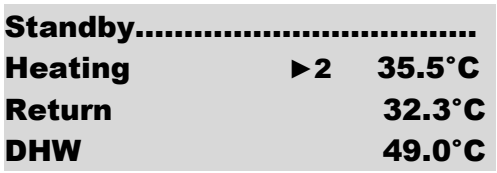
3.9 Power outage

In case of a power outage the device ceases to operate. After power is restored the device undergoes 300 seconds of protection mode and then automatically returns to the mode before the power outage. In the case of a power outage the controller **retains all settings** set before the outage.

NOTE
In case of a power outage longer than 2 hours air-water models with a water connection, water has to be drained from the connecting pipes between the external and internal device. Operate in accordance with the requirements in the installation manual.

3.10 Display of the state of the device

After activating the power supply the device displays the current state of the device on the display according to the operating mode and values of basic parameters of the heating/cooling system of the building; see chapter 8.2.



- Keys ▲ and ▼ allow moving up and down the basic display.

READING ON THE DISPLAY			DESCRIPTION
Standby			Current state of operation.
Heating	►2	35.5 °C	Set or calculated temperature of heating (only in winter mode).
Return		32.3 °C	Current temperature of the return.
DHW		49.0 °C	Current temperature of DHW.
TD outside	88	7 °C	Current outside temperature.
TD60 in 12 days			Time left until the start of DHW thermal desinfection (i.e. next thermal desinfection will begin in 12 days). Setting of DHW thermal desinfection is controlled by changing parameters ***TD*** and ***HT every*** described in section 6 located in the main menu ***DHW.***
2016/02/10 12:24 TUESDAY			Current time and day of the week. Setting the time and day of the week is described in section 5.9.

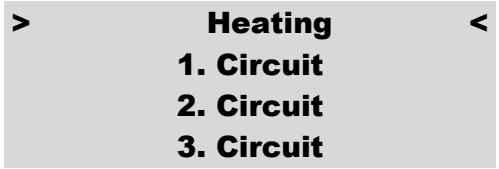
NOTE
No. 2 means the number of days until automatic mode switch.
No. 88 represents the activation delay time of the additional source in minutes.
The ⎍⎍ symbol displays the activation of the electric heater.

3.11 Setting parameters

All parameter settings of the device's operation and heating/cooling system of the building are set as described below.

1. 

For entering the user menu press the key ▯ (MENU) on the basic display.

2. 

The currently chosen menu is marked by the symbols **>** **<** **(CHOOSE)**.
Keys ▲ or ▼ select the desired menu.
To enter the selected menu, press the ↵ (ENTER) key.
For exiting the menus to the basic display press the ▯ (MENU) key.
The display shows only those menus which were actually activated during the start-up of the device!

3.	C/W I Schedule >Normal 35.5°C < Eco -2.0°C	After entering the selected menu the initial parameter is marked with the symbols **> < (CHOOSE)**. The key selects the parameter you want to change. When you select the parameter, press key (ENTER).
4.	C/W I Schedule *Normal 35.5°C * Eco -2.0°C	The signs * * along the chosen parameter indicate the "mode setting" (**SET**). The value of the chosen parameter can be changed to the desired value by using keys or. To confirm the settings press key (ENTER).
5.	C/W I Schedule >Normal 39.1°C < Eco -2.0°C	After confirming the settings by pressing key (ENTER), the signs * * (**SET**) change back into signs **>** **<** (**CHOOSE**). For changing the value of other parameters, repeat the process. After completing the settings you can return to the main menu by pressing the key (MENU).

NOTE

MARK	DESCRIPTION
> <	The arrows on the sides indicate the presently selected parameter/menu (CHOOSE).
* *	The stars on the sides indicate the mode of setting the chosen parameter (SET).
►	A full arrow with the name of the parameter (i.e.: *DHW ► 50°C*) indicates the current operation of the circulation pump or the position of the switching valve (i.e. DHW). In the case of more circulation pumps of the heating system being in operation, more full arrows are displayed.

3.12 Setting the language

The TERMOTRONIC controller enables setting different display languages. To set a language of your choice, follow the steps below or set the language thought the Home Cloud application.

Standby..... Heating 35.5°C Return 32.3°C DHW 49.0°C	Press key (MENU) in the basic menu.
> Mode < Temperatures	Use the key to choose the **Mode** ***(Mode, Regime, Betriebsart, Nacin).*** menu. To confirm the settings press key (ENTER).

C/W ALL	I
D8-PV	Cooling
Silent mode	
>Language	EN <

Use the button to choose the parameter ***Langugage EN (Jezik SI, Lingua IT, Sprache DE, Jezik CRO).***

Press to go it to SET mode and use the button to select the desired language.

To confirm the settings press key (ENTER).

4 Quick settings

NOTE
The parameters of the **TERMOTRONIC** controller were set according to project documentation of the heating/cooling system, recommendations of the manufacturer of the device and your requests by the authorised contractor for commissions at commission. At handover, the contractor for commissions is obliged to thoroughly present you with the possible ways of the device's operation and explain the setting modes of the parameters important for the user.

The basic function of the device is space heating and heating the DHW. The controller of the device calculates the optimal needed temperature of the heating water to achieve the desired air temperature of the room in dependence on the outside temperature.

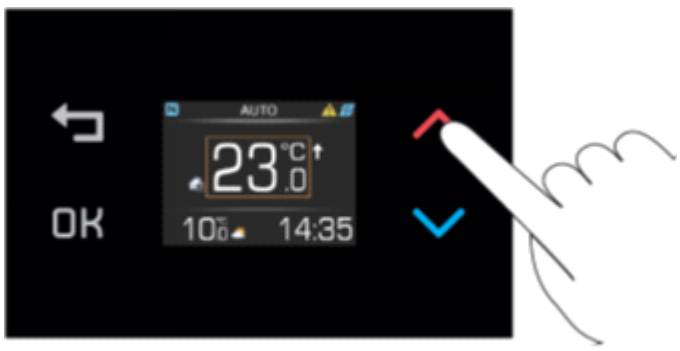
Setting the temperature of heating/cooling
The temperature in the heated/cooled room is controlled in two stages, by setting the temperature:

1. of the room with the spatial corrector or thermostat and
2. the heating/cooling water in the accumulator and heating/cooling circuits on the controller **TERMOTRONIC**.

NOTE
In case despite the change in the setting of the temperature with the spatial corrector or thermostat after a longer period of operation of the heating/cooling circuit (in floor heating this could last up to 4 days) the desired room temperature was not achieved, check the heating water temperature settings. For settings see chapter 4.2.

4.1.1 Setting room temperature with the spatial corrector KT-2

The spatial corrector KT-2 enables an advanced and very easy settings of room temperature and basic functions of the device.



By pressing the key ^ or v the display displays the currently set room temperature. The temperature is marked by an orange border.
By pressing the key ^ or v again you adjust the desired room temperature. You confirm the change by pressing the OK button, although, the change auto-saves in 8 seconds.

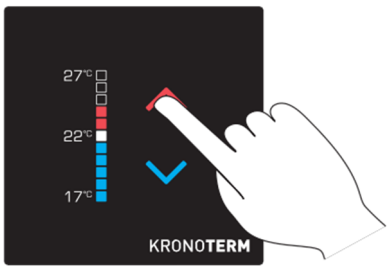
NOTE
The space corrector influences the whole heating circuit and not the temperature of the individual room. The desired room temperature where the spatial corrector is located in the reference temperature for all other rooms of the heating circuit controlled by this spatial corrector.
Before raising the temperature of heated water or the desired room temperature on the spatial corrector make sure the valves on the heat sources in the room where it is too cold for you, are completely or sufficiently opened. If the temperature of other rooms is too high or too low open or close the valves for floor heating or radiators where the deviations from the desired temperature take place.

NOTE
For maintaining the correct operation of the heating system you have to choose a suitable operating mode - winter (heating and DHW) or summer (DHW and cooling - only in certain models). For choosing the mode see chapter4.3.

NOTE
A detailed description of the settings and additional functions (weather report, DHW, operating mode, information about the state of the device ...) see the manual for the spatial corrector KT-2.

4.1.2 Setting room temperature with the spatial corrector KT-1

The spatial corrector KT-1 enables basic settings of room temperature.



By pressing the key ^ or v the LED display displays the currently set desired room temperature. By pressing the key ^ or v again you adjust the desired room temperature. By pressing the keys you adjust the values by 0.5 °C. The change is confirmed automatically.

Quick setting: By pressing and holding the key the temperature setting changes in steps of 1 °C.

NOTE
The space corrector influences the whole heating circuit and not the temperature of the individual room. The desired room temperature where the spatial corrector is located in the reference temperature for all other rooms of the heating circuit controlled by this spatial corrector. Before raising the temperature of heated water or the desired room temperature on the spatial corrector make sure the valves on the heat sources in the room where it is too cold for you, are completely or sufficiently opened.
If the temperature of other rooms is too high or too low open or close the valves for floor heating or radiators in the rooms where the deviations from the desired temperature take place.

NOTE
For maintaining the correct operation of the heating system you have to choose a suitable operating mode - winter (heating and DHW) or summer (DHW and cooling - only in certain models). For choosing the mode see chapter4.3.

NOTE
You can find a detailed description of settings and additional functions in the manual for the spatial corrector KT-1.

4.1.3 Setting the room temperature with a room thermostat

For setting the room temperature with a room thermostat consult the manual which come with the thermostat or consult the installer.

NOTE
In case the thermostat is turned on all this time and the heating system does not heat/cool the space to the desired temperature, check the settings of temperatures of the heating system on the device.

NOTE
For choosing the function of heating or cooling an appropriate thermostat has to be installed which allows both functions.

NOTE
For maintaining the correct operation of the heating system you have to choose a suitable operating mode - winter (heating and DHW) or summer (DHW and cooling - only in certain models). For choosing the mode see chapter 4.4.

4.2 Setting the temperature of heating water

Upon start-up the control of the heating water temperature of your heating system was set to **Heating curve mode** which ensures the most energy efficient operation of the device. In case the automatically calculated temperature of the heating water (in accordance with the external temperature) is insufficient for ensuring the comfort of living in the rooms, the temperature of the heated water can quickly be raised or lowered by changing the parameter of cooler/hotter (***C/W***). The values of the parameter ***C/W*** are adjusted in the menus **1. *Circuit* 2. *Circuit* 3. *Circuit* or 4. *Circuit*** depending on which temperature you want to change. If you want to change (raise/lower) the temperature of the heated water for the whole building or heating system, change the parameter ***C/W*** in the menu ***Heating.***

NOTE
Upon start-up the heating water temperature control was set to **Heating curve mode.** The authorised contractor for commissioning noted your heating water settings of the heating circuits into chapter 12.

By setting the parameter ***C/W*** you set the number of temperature steps (one temperature step equals 1 °C) for which you want to raise or lower the temperature of heated water. You perform the settings in the following steps:

1.	**Standby.....** **Heating 35.5°C** **Return 32.3°C** **DHW 49.0°C**	Press key (MENU) in the basic menu.
2.	**Heating** **> 1. Circuit <** **2. Circuit** **3. Circuit**	In the user interface, use the key and choose menu 1. ***Circuit*** and press the key (ENTER).

3.	>C/W I < Schedule Normal 35.5°C Eco -2.0°C	The first line has the parameter ***C/W*** selected. To set the parameter press key ↵ (ENTER).
6.	*C/W I * Schedule Normal 35.5°C Eco -2.0°C	* * appear along the chosen parameter. The keys ▲ and ▼ change the value of the parameter ***C/W***. This raises or lowers the temperature of heated water.
7.	*C/W I>> * Schedule Normal 35.5°C Eco -2.0°C	Each pressing of the key ▲ raises/▼ lowers the temperature of the heating circle for one temperature step (**<**, **>**). To confirm the settings press key ↵ (ENTER).
7.	>C/W I>> < SCHEDULE Normal 35.5°C Eco -2.0°C	After conformation the controller calculates the new temperature setting for the heating circuit or heated water according to the external temperature (in case of weather control). For returning to the basic view press the key ⎘ (MENU) twice.

For advanced changing the temperature of the heated water control mode of the heating system see chapter 5.1.

NOTE

- The temperature of heated water can be raised or lowered for no more than four temperature steps.
- The heating and individual circuits settings are separated from the cooling, this is why all settings for heating remain unchanged with the change of the mode into cooling. The same is true for parameter settings in the menu ***Cooling, 1. Circuit, 2. Circuit, 3. Circuit, 4. Circuit*** and ***Heating***, which are separated so as to maintain all settings when changing the heating ***Mode*** (winter/summer).
- For heating curve you can choose various temperature modes of operation with setting daily and weekly schedules. See chapter5.4.

NOTE

In case of radiator heating for a significant change, change the parameter ***C/W*** for 2 or 3 temperature steps at once but only for 1 temperature step in case of floor heating. Please note that the responsiveness of the heating system in the case of radiator heating is quicker than in the case of floor heating. By changing the parameter ***C/W*** several hours can pass (in the case of floor heating) before the heating system responds properly and you can feel the change of the adjustment.

4.3 Setting the temperature of DHW

Once the temperature of the DHW falls below the set temperature minus the parameter Hysteresis (example: DHW setting is 50,0 °C, Hysteresis setting is 5,0 °C → DHW heating will start at 44,9 °C), the controller switches the device from space heating to heating DHW. Heating DHW has priority over other modes of operation.
Setting the temperature of DHW is performed in the following steps:

1.	**Standby.....** **Heating..** **35.5°C** **Return** **32.3°C** **DHW** **49.0°C**	Press key (MENU) in the basic menu.
2.	**> DHW <** **Additional source** **Mode** **Temperatures**	In the user menu choose the menu ***DHW*** with the key and press the key (ENTER).
3.	**> DHW** **50.0°C <** **Hysteresis** **5.0°C** **Schedule** **Circulation Sched.**	In the menu ***DHW*** in the first line the parameter ***DHW*** is chosen. To set the parameter press key (ENTER).
4.	*** DHW** **50.0°C *** **Hysteresis** **5.0°C** **Schedule** **Circulation Sched.**	* * appear along the chosen parameter. The keys and change the value of the parameter ***DHW***. This raises or lowers the temperature of DHW. To confirm the settings press key (ENTER).
5.	**> DHW** **50.0°C <** **Hysteresis** **5.0°C** **Schedule** **Circulation Sched.**	Next to the set parameter you can again find the symbols > <. For returning to the basic view press the key (MENU) twice.

NOTE
The actual reached temperature of heated water in the DHW depends on the adequacy of the DHW, pipelines, flow and ventilation of the system.

NOTE
For controlling the temperature settings of DHW in the tank you can set different modes of operation (ECO, Comfort), daily and weekly schedules. See chapter 5.4.

4.4 Changing the operational mode - winter/summer mode

The ***mode*** of operation - ***winter*** or ***summer***, is chosen according to season. In the time when you do not need heating or want to cool the rooms, switch to ***summer*** operating mode. In case heating is needed, switch to ***winter*** mode. The choice can be automatic or manual.

NOTE

If you do not switch into the summer mode operation in the summer, this can result in higher energy consumption. The operational costs will be increased for two reasons:

- The main circulation pump will switch on from time to time to check whether the need for heating has arisen.
- The additional source could also be turned on (for the protection of the heating system) if the temperature falls below a certain point, i.e. 12 °C – this depends on the start-up settings.

NOTE

The cooling function is only provided by reversible and WPG + passive models of the devices.

The function of the device according to the chosen mode of operation: ***Mode***	**OPERATION**		
	Heating	DHW	Cooling
Winter	YES	YES	NO
Summer	NO	YES	YES

NOTE

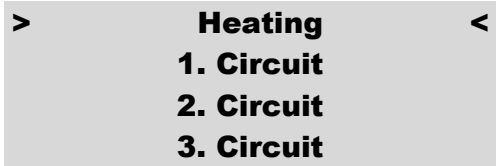
In the ***winter*** mode (heating and DHW) the heating system works only for heating the heating water of activated circles and DHW. By using the built-in external switch we can launch manual switch on/off of the cooling mode of the device.

4.4.1 Changing the operating mode

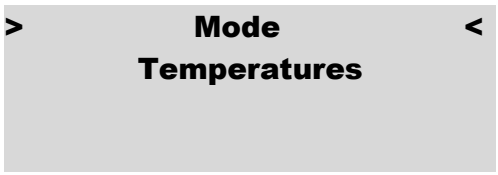
Changing the operation from winter to summer mode is performed in the following steps:

1. 

Press key (MENU) in the basic menu.

2. 

In the user interface, use the key and choose menu ***Mode***.

3. 

To choose the menu ***Mode*** press key (ENTER).

4.	**> Mode Winter <** **Screed drying NO** **Initial** **Maximum**	The first line has the parameter ***Mode Winter*** selected. To set the parameter press key ↵ (ENTER).
5.	*** Mode Winter *** **Screed drying NE** **Initial** **Maximum**	* * appear along the chosen parameter. The key ▲ or ▼ changes the value of the parameter into: ***Mode summer*** for cooling and preparation of DHW or ***Mode winter*** for heating and preparation of DHW or ***Mode AUTO*** for automatic switch between winter and summer mode of operation. To confirm the settings press key ↵ (ENTER).
6.	**> Mode Summer <** **Screed drying NO** **Initial** **Maximum**	For returning to the basic view press the key ⎘ (MENU) twice.

NOTE
Setting the ***AUTO*** mode allows an automatic switch of the operating mode after the external temperature at 9 PM is higher or lower than the temperature of the switch (12 °C) for 3 days. This setting can be changed with the parameter ***Temp. mode*** in the menu ***Mode***.

4.5 Setting the cooling temperature

In the operating mode (***Summer, AUTO***) which enables cooling you can adjust the temperature of cold water for the cooling circuits.
The controller only enables the mode of controlling the temperature of cold water with maintaining constant temperature.

NOTE
For setting the cooling of the building the ***Summer*** or ***AUTO Mode*** must be chosen.

NOTE
If the installer set the parameter (371) in chapter 11 ***Buff.*** to constant, always make sure the ***Cooling*** menu in ***1. Circuit, 2. Circuit, 3. Circuit or 4. Circuit*** has the parameter ***Normal*** set to a value at least equal to or lower than the value of the **circuit with the lowest setting**.

Setting the temperature of cold water is performed in the following steps:

1.	**Standby.....** **Cooling 13.5°C** **Return 14.3°C** **DHW 49.0°C**	Press key ⎘ (MENU) in the basic menu.

2.	> Cooling < 1. Circuit 2. Circuit 3. Circuit	Choose the menu ***Cooling*** or use the key to choose the desired ***Circuit*** in the first menu. To set the parameter press key (ENTER).
3.	Schedule >Normal 13.0°C < Eco -2.0°C Comfort 0.0°C	In the menu ***Cooling*** (or ***Circuit***) use the key to choose the parameter ***Normal*** and press the key (ENTER).
4.	Schedule *Normal 12.5°C * Eco -2.0°C Comfort 0.0°C	* * appear along the chosen parameter. Use the key or to change the value of the parameter ***Normal***; by doing so you raise or lower the temperature of the accumulator (or circuit). To confirm the settings press key (ENTER).
5.	Schedule >Normal 12.5°C < Eco -2.0°C Comfort 0.0°C	For returning to the basic view press the key (MENU) twice.

NOTE

- The cooling and individual circuits settings are separated from the heating, this is why all settings for cooling remain unchanged with the change of the mode into heating.
- In the case of floor, ceiling or wall cooling appropriate settings and protection have to be ensured in order not to cause surface condensation.
- For controlling the temperature settings of cooling water you can set different temperature modes, daily and weekly schedules. See chapter 5.4.
- The response of the cooling system in convector cooling is faster than in floor, ceiling or wall cooling.

4.6 Switching on the additional heat source

In case the heating capacity of the device is not sufficient for covering thermal losses of the building under given weather conditions, you can increase the capacity by switching on the ***Additional source***.

The device has a Backup source, a flow electric water heater fitted as standard which can function as an additional heat source by activating the parameter ***Additional source***. Basically, the controller is set to activate the additional source which operates parallel to the device if the external air temperature falls below -7 °C. This setting is set according to the building at commissioning and can be changed later. Before setting the parameter we advise consulting the contractor for commissioning.

NOTE

In case you would like to use an oil/gas/pellet furnace or external electric heater as auxiliary heat source, you have to ask the contractor for commissioning to perform the setting.

Activating the additional source manually is performed in the following steps:

1.	**Standby.....** **Heating 35.5°C** **Return 32.3°C** **DHW 49.0°C**	Press key (MENU) in the basic menu.
2.	**> Additional source <** **Mode** **Temperatures**	In the user menu choose the menu **Additional source** with the key and press the key (ENTER).
3.	**>Switch o Need<** **Bi-point -5.0°C** **Delay 30 min** **Mode PARALLEL**	In the first line choose the parameter ***Switch o*** and press the key (ENTER).
4.	***Switch o constant*** **Bi-point -5.0°C** **Delay 30 min** **Mode PARALLEL**	* * appear along the chosen parameter. The keys and change the value of the parameter ***Switch o constant***. The auxiliary source will operate together with the heat pump. To confirm the settings press key ENTER.
5.	**> Switch o constant <** **Bi-point -5.0°C** **Delay 30 min** **Mode PARALLEL**	For returning to the basic view press the key (MENU) twice.
6.	**Heating + add. source** **Heating ► 40°C** **Return 32.3°C** **DHW 49.0°C**	In the first row, after switching on the Backup source, the main display will display the information about the status of the device ***Heating+AdHeater***.

NOTE
From an economic standpoint we advise using the additional source only if necessary because using it means higher heating costs. This is why we recommend to switch the auxiliary heat source from ***constant*** back to ***Need*** when there is no more need for additional heating capacity.

4.7 Manual activation of the additional heat source

In case the device has a malfunction or heating with the device is not possible for whatever reason, we recommend activating the additional source- the flow electrical water heater which will take over the heating of the heating and DHW.

Activating the backup source manually is performed in the following steps:

1.	**Standby.....** **Heating 35.5°C** **Return 32.3°C** **DHW 49.0°C**	Press key (MENU) in the basic menu.

2.	> Additional source < Mode Temperatures	In the user menu choose the menu **Additional source** with the key ▼ and press the key ↵ (ENTER).
3.	Delay OFF Mode PARALLEL Rise for 5.0°C >AddSourceOnly NO<	In the menu ***Additional source*** choose ***AddSourceOnly*** **NO** with the key ▼ and press the key ↵ (ENTER).
4.	Delay OFF Mode PARALLEL Rise for 5.0°C * AddSourceOnly NO*	* * appear along the chosen parameter. Use the key ▼ to change the value of the parameter to ***Only add. source YES***. Only the source will run. To confirm the settings press key ↵ (ENTER).
5.	Delay OFF Mode PARALLEL Rise for 5.0°C > AddSourceOnly YES<	For returning to the basic view press the key ⎘ (MENU) twice.
6.	Heating - AddSourceOnly - Heating ► 40 °C Return 32.3°C DHW 49.0°C	In the first row, after switching on the Backup source, the main display will display the information about the status of the device ***Heating - AddSourceOnly -***.

NOTE

The device in this mode can heat the heating and DHW.

- The heating water will heat to the temperature set in the basic menu ***Heating, 1. Circuit, 2. Circuit, 3. Circuit,*** and ***4. Circuit.*** In the case of a Frost Protection program (***FP prog)*** error the temperature of heating water will heat up to the set temperature with the parameter ***AntiFreeze*** in the menu ***AddSourceOnly***.
- The DHW will heat up to the temperature set with the parameter ***DHW*** in the menu ***Additional source.***.

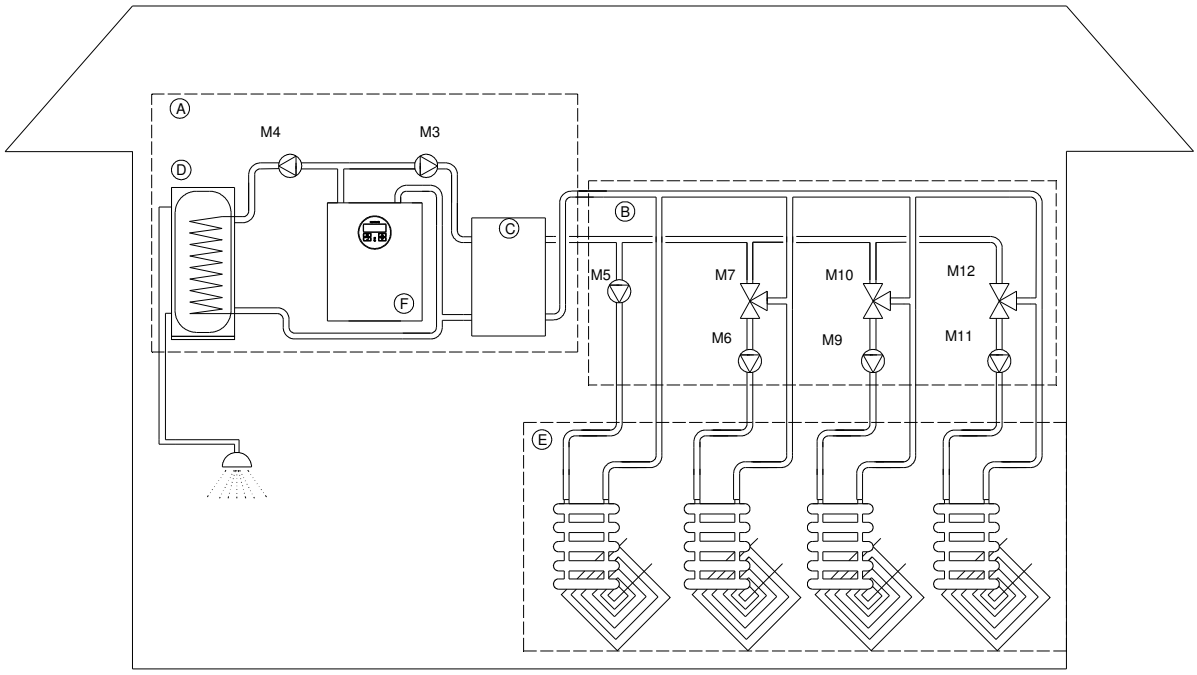
As soon as heating with the device will be made possible again, set the parameter to ***AddSourceOnly NO***.

5 Advanced settings

In this chapter you will find:

- How to set the parameters of the device in case the system has no spatial corrector or thermostat built in or the settings for the temperature of heating water do not suffice the heating needs.
- How to set the control mode of the heating water.
- How to set the mode of operation for heating water/cooling water, heating/cooling circuits and heating of DHW.
- How to set schedules.

For easier understanding of the chapter, you can find a general scheme of the heating (cooling) system below.



ELEMENTS	MARK	CHARACTERISTICS
	A	Space and DHW heating device
	B	Heating circuits
	C	Heating water (buffer tank)
	D	DHW (DHW tank)
	E	Heat consumers (floor heating / radiators)
	F	Heat pump
M3		Main circulation pump
M4		Circulating pump for DHW
M5		Circulation pump of direct heating circle 1
M6		Circulation pump of mixing-heating circle 2
M7		Mixing valve of mixing-heating circle 2
M9		Circulation pump of mixing-heating circle 3
M10		Mixing valve of mixing-heating circle 3
M11		Circulation pump of mixing-heating circle 4
M12		Mixing valve of mixing-heating circle 4

NOTE

Heating circle 1 (M5) can only be a direct heating circle (without mixing valve).

For this circuit we always choose the heating circle which requires the highest temperature (i.e. radiators).

5.1 Heating settings

NOTE
When setting or changing the desired heating water temperature, check whether parameter 371 is set to ***constant,*** chapter 12. In this case the following values have to be set: ***Normal*** and ***Correction*** in the menus ***Heating*** and ***1. Circuit*** have to be equal and higher than the setting of desired values in the mixing circuits (***2. Circuit, 3. Circuit*** and ***4. Circuit***), if they are active.
In case one of the circuits (***2. Circuit***, ***3. Circuit*** or ***4. Circuit)*** is direct, it can have the same setting as ***1. Circuit***.

NOTE
In **mixing heating cycles,** the controller uses the highest set or calculated temperature of heating cycles for calculating the needed temperature.

The heating temperature thus consists of the set or calculated temperature of heating cycles and factory parameter settings ***Avt. Corr.***

In weather controlled heating you can set three parameters:

- ***Normal*****:** With this parameter, you set the desired return heating water temperature at an outside air temperature of -18 °C.
- ***Standby*****:** With this parameter you set the desired temperature difference between the current desired temperature of the Return and the temperature of the return when the heating of the heating circuit or device turns on again.
- ***Correction:*** With this parameter you set the incline of the weather controlled heating curve outside temperature 15 °C. It is mainly important for transitional periods because the weather controlled heating curve can be too low at this time, depending on the building and desired comfort.

The parameters ***Normal***, ***Standby*** and ***Correction*** can be changed to the desired values with keys or

5.1.1 Heating water control mode

The controller of the device enables two ways of controlling the temperature of heating water at the exit of the device or the entry into individual heating circuits:

a) ***Heating Curve:*** Setting the desired temperature of heating water according to external temperature.
b) ***Constant:*** The temperature of heating water is kept constant regardless of the external temperature.

The control mode of the heating water suitable for individual buildings depends on various factors such as the type of building, its size, make of heating system ...; this is why the control mode for heating water temperature is set by a qualified person at commission (the authorised contractor for commissions) nevertheless, you can change the setting later.
The recommendation of the device's manufacturer is, if acceptable from the standpoint of comfort, etc., to set the heating water control mode to ***heating curve***; this is why the present document regards this setting as the **default setting** - the setting **set at commission**. Heating curve means a more efficient operation of the heating system because by with higher external temperature the desired temperature of heated water is lowered, which means a more efficient operation of the device; for more information, see section 5.1.2.

Control modes for heating water have to be set separately by type in menus:

- ***Heating……***
- ***1. Circuit,***
- ***2. Circuit,***
- ***3. Circuit,***
- ***4. Circuit,***

Here it is necessary to take account the **NOTE (chapter 5.1)**! The method of adjustment is the same in all cases and is described on the example of heating curve in section 5.1.2 and for the example of control at constant temperature in section 5.1.3.

5.1.1.1 The change in heating control heating curve - constant temperature

You can switch the heating control from heating curve to control by maintaining constant temperature in the following manner:

1.	**Standby.....** **Heating 35.5°C** **Return 32.3°C** **DHW 49.0°C**	Press key (MENU) in the basic menu.
2.	**> Heating <** **1. Circuit** **2. Circuit** **3. Circuit**	Choose the menu **Heating** or use the key to choose the desired ***Circuit***. To set the parameter press key (ENTER).
3.	**Normal 35.5°C** **Eco -2.0°C** **Standby 3.0°C** **>Heating curve .....<**	Choose the ***Heating curve*** parameter by pressing and press the (ENTER) key.
4.	**Normal 35.5°C** **Eco -2.0°C** **Standby 3.0°C** ***Const. temperature .....***	* * appear along the chosen parameter. By pressing the key adjust the value of the ***Heating curve*** parameter into **Const**. **temperature** and confirm the settings by pressing the key (ENTER).
5.	**Normal 35.5°C** **Eco -2.0°C** **Standby 3.0°C** ***Const. temperature ..... . <**	For returning to the basic view press the key (MENU) twice.

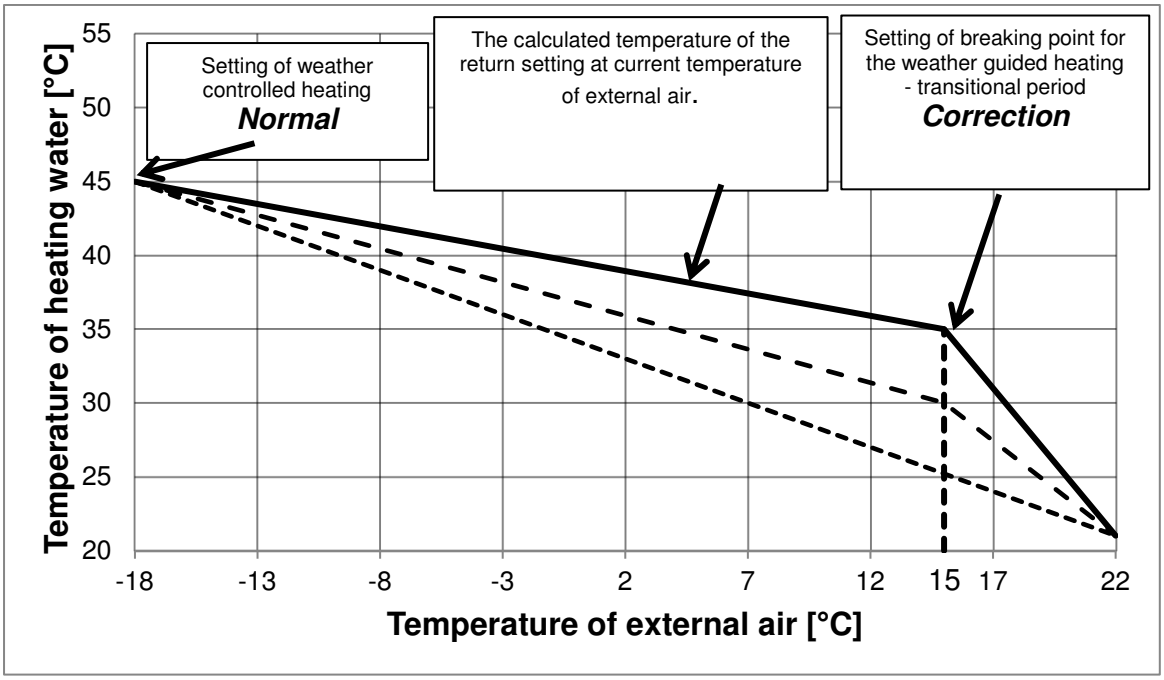
5.1.2 Weather controlled heating – heating curve

Weather controlled heating means water temperature in the heating system is adjusted to the current air temperature. The lower the outside temperature, the higher the heat of the buildingand as a result a higher temperature of heating water is needed in the heating bodies (floor, wall or radiator heating ...) to compensate for the losses.

The opposite is true in case of higher outside temperatures. In this case the heat losses are lower and a lower heating water temperature is needed in the heating bodies to compensate for the losses.

The weather controlled heating curve shows that the temperature of the return (heating water returning to the heat pump from heating bodies) depends on the temperature of air outside the building. The lower the external air temperature, the higher the calculated needed temperature of the return.

The weather controlled heating curve



The appropriate heating temperature setting is essential for ensuring the desired comfort. It depends on the characteristics of the house and heating bodies as well as the project temperature. The table below lists the recommended settings which can help you decide on the appropriate parameters of the weather controlled heating.

TYPE OF HOUSE	**PARAMETER**	**HEATING (weather controlled)**			
	Heating, 1. Circuit, 2. Circuit, 3. Circuit, and 4. Circuit	**Floor, wall [°C]**	**Convector heating [°C]**	**Radiation heating 55 °C**	**Radiation heating 65 °C**
Non-insulated house	***Normal***	-	55	65	**70**
	Standby	-3	5	5	**7**
	Correction - Correction of breaking point (+15 °C)	-	10	13	**15**
Insulated house	***Normal***	**35**	**50**	**55**	**65**
	Standby	**2**	**5**	**5**	**6**
	Correction - Correction of breaking point (+15 °C)	**5**	**5**	**10**	**12**
Well-insulated house	***Normal***	30	40	55	55
	Standby, Hysteresis	2	5	5	5
	Correction - Correction of breaking point (+15 °C)	3	3	5	10

NOTE
In ***mixing heating circuits*** we adjust the adjustable temperature of the ***supply pipe;*** in ***direct heating circuits*** and on the device we adjust the temperature of the ***return***.

5.1.2.1 Setting the temperature correction of heated water

By changing the value of the parameter ***Correction*** you can adjust the calculated temperature of heating water in transitional (autumn and spring) periods and thus adjust the desired comfort in the heated building. You perform the settings in the following steps:

1.	**Standby.....** **Heating 35.5°C** **Return 32.3°C** **DHW 49.0°C**	Press key (MENU) in the basic menu.
2.	**> Heating <** **1. Circuit** **2. Circuit** **3. Circuit**	The first line has the parameter ***Heating*** selected. To set the parameter press key (ENTER).
3.	**Comfort 2.0°C** **Hysteresis 3.0°C** **Heating Curve** **>Correction 5.0°C<**	Choose the ***Correction*** parameter by pressing and press the (ENTER) key.
4.	**Comfort 2.0°C** **Hysteresis 3.0°C** **Heating Curve** ***Correction 5.0°C***	* * appear along the chosen parameter. The keys and change the value of the parameter ***Correction***. The temperature can be raised for no more than 15 K (°C). For returning to the basic view press the key (MENU) twice.

5.1.2.2 Setting the heating curve temperature - *Normal*

By setting the parameter ***Normal*** you set the maximum heating water temperature at an outside air temperature of -18 °C.

NOTE
After start-up of the device there is usually no need to change the parameter ***Normal*** in the menu ***Heating***, except in cases of constructional changes in the heating system.

You perform the settings in the following steps:

1.	**Standby.....** **Heating 35.5°C** **Return 32.3°C** **DHW 49.0°C**	Press key (MENU) in the basic menu.
2.	**> Heating <** **1. Circuit** **2. Circuit** **3. Circuit**	The first line has the parameter ***Heating*** selected. To set the parameter press key (ENTER).
3.	**C/W I** **Schedule** **>Normal 35.5°C <** **Eco -2.0°C**	Choose the **parameter *Normal*** by pressing and press the (ENTER) key.

4.	**C/W I** **Schedule** ***Normal 45.0°C *** **Eco -2.0°C**	* * appear along the chosen parameter. The keys ▲ and ▼ change the value of the parameter ***Normal***. This way you raise or lower the maximum temperature of heating water at outside temperature of -18 °C. To confirm the settings press key ↵ (ENTER). The recommended values of the maximum temperature for individual types of heating are given in chapter 5.1.
5.	**C/W I** **Schedule** **>Normal 45°C <** **Eco -2.0°C**	After confirming the settings the controller calculates the new temperature setting of the heating water according to outside temperature (heating curve); if the outside temperature is higher than -18 °C, this calculated temperature lower than the set temperature. For returning to the basic view press the key ⎘ (MENU) twice. Repeat the process for each circuit.

NOTE

- For economical and comfortable use of heating we recommend the use of **heating curve heating**.
- For heating curve heating, you can choose various temperature modes of operation with setting daily and weekly schedules. See chapter 5.4.

5.1.3 Heating based on constant temperature

For ensuring economical operation of the whole system we recommend choosing heating curve of heating. Nevertheless, if you want to heat the rooms with constant water temperature in the system, we recommend the following settings:

TYPE OF HOUSE	**PARAMETER**	**HEATING (with constant temperature)**			
	Heating, 1. Circuit, 2. Circuit, 3. Circuit, and 4. Circuit	**Floor, wall [°C]**	**Convector heating [°C]**	**Radiation heating 55 °C**	**Radiation heating 65 °C**
Non-insulated house	***Normal***	38	50	50	**55**
	Standby	3	5	5	**7**
Insulated house	***Normal***	**35**	**45**	**47**	**50**
	Standby	**2**	**5**	**5**	**6**
Well-insulated house	***Normal***	30	40	45	47
	Standby	2	5	5	5

NOTE

In ***mixing heating circuits*** we adjust the adjustable temperature of the ***supply pipe;*** in ***direct heating circuits*** and on the device we adjust the temperature of the ***return***.

5.1.3.1 Setting the temperature of heating water

By choosing the parameter ***Normal*** you set the temperature of heating water which is maintained regardless the outside temperature.

NOTE

After start-up of the device there is usually no need to change the parameter ***Normal*** in the menu ***Heating***, except in cases of constructional changes in the heating system.

You perform the settings in the following steps:

1.	**Standby.....** **Heating 35.5°C** **Return 32.3°C** **DHW 49.0°C**	Press key (MENU) in the basic menu.
2.	**Heating** **> 1. Circuit <** **2. Circuit** **3. Circuit**	The first line has the parameter ***Heating*** selected. To set the parameter press key (ENTER).
3.	**C/W I** **Schedule** **>Normal 35.5°C <** **Eco -2.0°C**	Choose the **parameter *Normal*** by pressing and press the (ENTER) key.
4.	**C/W I** **Schedule** ***Normal 45.0°C *** **Eco -2.0°C**	* * appear along the chosen parameter. The keys and change the value of the parameter ***Normal***. This way you raise or lower the maximum temperature of heating water at outside temperature of -18 °C. To confirm the settings press key (ENTER). The recommended values of the maximum temperature for individual types of heating are given in chapter 5.1.
5.	**C/W I** **Schedule** **>Normal 45°C <** **Eco -2.0°C**	After confirming the settings the device will heat the water to the set temperature regardless of the outside air temperature. For returning to the basic view press the key (MENU) twice.

NOTE

- For economical use of heating we recommend the use of **heating curve heating**.
- For heating curve you can choose various temperature modes of operation with setting daily and weekly schedules. See chapter 5.4.

5.2 Operating mode

The controller of the device enables heating of the heating water/ cooling of the cooling water, heating/cooling of the circuits and DHW in four different operational modes:

- ***Normal*** applies to heating/cooling.
- ***DHW*** applies to the heating of DHW.
- ***ECO***.
- ***COMFORT***.

These different ways of operation can later be used with setting timetables.

The parameter ***ECO*** is used for more economical operation. During hating the temperature of the heating water is reduced, during cooling the temperature of cooling water is increased. In this operating mode you will save on costs but at the expense of comfort.
The parameter ***COMFORT*** is used for the operation which means greater comfort - a raising of heating water temperature for the set value in the heating mode; in the cooling mode it means the opposite - a lowering of cooling water temperature.

In case you want to change the entire system to ***ECO*** or ***COMFORT*** operation, you can perform the adjustment in the menu ***mode*** where you change the parameter ***Operation AUTO*** to ***Operation ECO*** or ***Operation COMFORT***.

5.3 Setting the cooling system

You turn on the cooling mode by entering the menu ***mode*** and changing the parameter ***mode Winter*** to ***mode Summer*** (see chapter 4.4).

- To turn on the cooling according to schedule you have to set the operating schedule for cooling in the menu ***Cooling***. The display and settings of the ***Cooling*** menu are enabled only if the conditions of the mode's operation listed in the section 4.4 are met (chosen mode + reversible heat pump or passive cooling).
- For setting the parameter ***Schedule*** see chapter 5.4.

5.3.1 Active cooling (only in reversible models)

- ***Cooling*** can be set for every parameter described in the table below separately.

In case of active cooling we recommend the following cooling settings:

PARAMETER	COOLING	
Cooling, 1. Circuit, 2. Circuit, 3. Circuit, and 4. Circuit	**Floor, wall, ceiling [°C]**	**Convector heating [°C]**
Normal	**19,0–20,0**	**12,0–15,0**
Standby	**2,0**	**3,0–4,0**

NOTE
In ***mixing heating circuits*** we adjust the adjustable temperature of the ***supply pipe;*** in ***direct heating circuits*** and on the device we adjust the temperature of the ***return***.

NOTE
Active cooling works in the area set in the menu ***Cooling*** with the parameters ***T.out.max.*** - external temperature above which the active cooling can operate actively and the parameter ***Min*** - external temperature until which the active cooling can operate.

1.

T.out.min	**20.0°C**
max	**40.0°C**
Min.Diff.	**2.0°C**
Checking TP	**2400**

Parameters ***T.out.min*** and ***max.*** For setting active cooling.

To set the parameter press key (ENTER).

5.3.2 Passive cooling

NOTE
Passive cooling is only possible with devices of the WPG type.

- Passive cooling uses the coolness of the groundwater or earth this is why we cannot set the desired temperature of cooling water. Cooling is activated when at least one of the heating circuits is active.
- Passive cooling will work if the difference between the supply and return temperature of the source is higher than the parameter ***Min.diff.*** which is set in the ***Cooling*** menu. In case the temperature difference is smaller the pump turns on periodically for the time set in the parameter ***Checking TP*** and will operate for the set time in the parameter ***for*** for the period until the difference between the supply and return temperature of the source is higher than the one set with the parameter ***Min.diff.***
  The submersible pump turns on periodically so that the controller can acquire information about the actual temperature of ground water from the sensors built into the device (source). Based on this information it checks whether passive cooling is possible or not.
- The operating indicator of the circulation pump for passive cooling is the ► sign on the display of the regulation.

NOTE
Passive cooling works in the area set in the menu ***Cooling*** with the parameters ***T.out. min*** - external temperature above which the passive cooling can operate actively and the parameter ***Max*** - external temperature until which the passive cooling can operate.

1.

Min.Diff.	**2.0**
Checking TP	**2400**
for	**300**
T.out.min	**20.0°C**

2.

max	**40.0°C**

Parameters ***T.out.min*** and ***max*** for setting active cooling.

To set the parameter press key (ENTER).

NOTE
Parameters for passive cooling must be set lower as the setting for active cooling!

5.4 Schedules

5.4.1 Operating mode

Every function (heating, cooling, 1. Circuit, 2. Circuit, 3. Circuit, 4. Circuit, DHW, pool, silent operation and circulation) can operate in several ways. Setting the operation mode for individual functions are performed in the schedule for this function.
In heating, cooling, mixing circuits, heating of DHW and swimming pool heating there can be 4 different types of operation:

- ***OFF***: Heating/cooling is disabled.
- ***HEA*** of ***COL***: Operation in the heating or cooling mode (parameter ***Normal***).
- ***ECO***: In this mode the controller maintains the temperature which is lower by the value of the ***ECO*** parameter than the set temperature in the parameter ***Normal***. In case of cooling the temperature set in this mode is higher by the value of the ***ECO*** parameter than the set temperature in the parameter ***Normal***. In this mode operation is more economical.
- ***COM:*** In this mode the controller maintains the temperature which is higher by the value of the **COM** parameter than the set temperature in the parameter ***Normal***. In case of cooling the temperature set in this mode is lower by the value of the COM parameter than the set temperature in the parameter ***Normal***. In this mode operation is less economical, depending on the setting it can also be more comfortable.

In circulation of DHW two operation settings are possible:

- ***OFF***: Circulation pump is disabled.
- ***CIR***: Circulation pump is truned on.

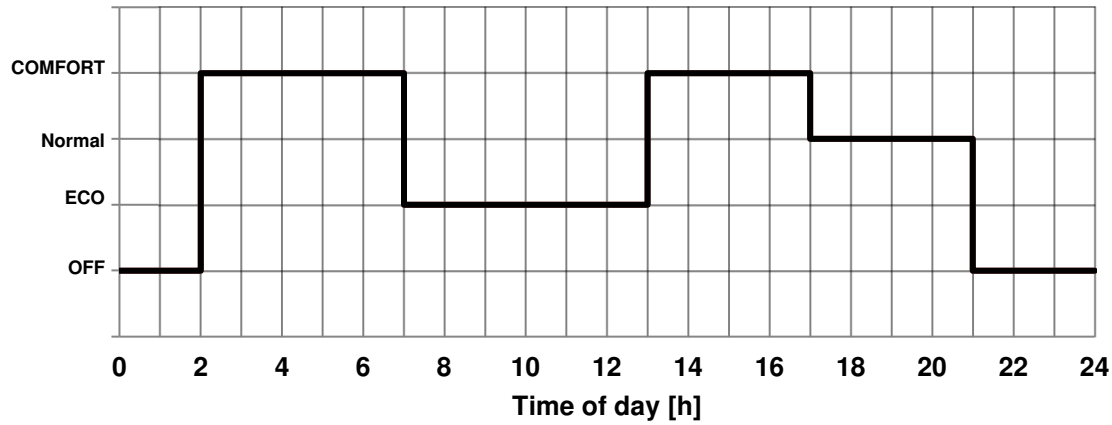
Devices of the WPLV type enable two additional operation modes set in the menu ***Mode*** with the parameter ***Silent mode***:

- ***NRM:*** Normal operation in the heating or cooling mode.
- ***LOW***: Lowered operation mode in the heating or cooling mode. Lower noise level but also lower heating or cooling capacity.

5.4.2 Setting operation schedules

NOTE
The easiest way to set the timetable is via the web application for remote control Cloud (cloud.KRONOTERM.com). For the use of the web interface see Instructions for use Web interface.

The schedule enables daily settings of 6 operation mode switches. Below is a description of heating with an example of a daily schedule.

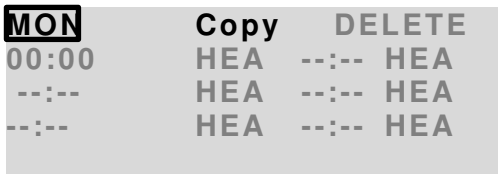


Heating is turned off (OFF) from 00:00 to 02:00.

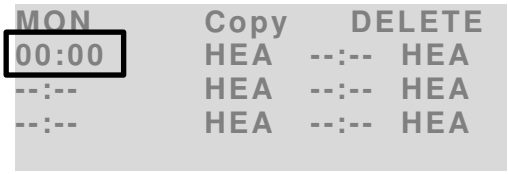
The heating is turned on at 02:00 in the ***COMFORT*** mode (in this mode the temperature is higher than the temperature set in the parameter ***Normal*** by the ***COM*** parameter).
The heating is turned on at 07:00 in the ***ECO*** mode (in this mode the temperature is lower than the temperature set in the parameter ***Normal*** by the ***ECO*** parameter).
At 1:00 PM the operating mode switches to ***COMFORT***.
AT 5:00 MP the operating mode switches to ***Normal*** (the temperature set or calculated in the parameter ***Normal***). At 9:00 PM the heating turns off (***OFF***).

You perform the settings in the following steps:

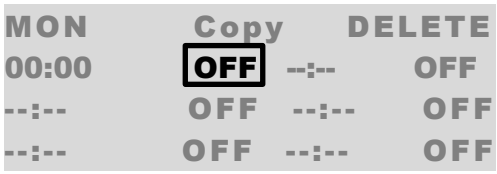
In the menus ***Heating, Cooling, Circuits***, choose the parameter ***Schedule*** with the key. When the symbols > < appear next to the parameter ***Schedule***, press the key (ENTER).



The day blinks which the schedule refers to. Choose the day you would like to set the schedule by using keys or. When you choose the day press the key (ENTER).

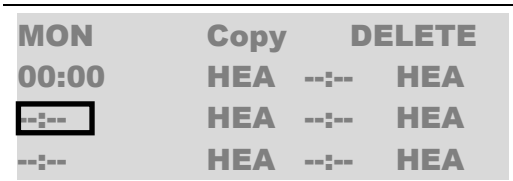


The time when the switch-over will be performed blinks. By pressing the key (ENTER) confirm you want to set the time. Symbols ***XXXXX*** start blinking over the time. Set the desired time with the key of the switch-over (in 15 min). To confirm the set time press key (ENTER). The symbols ***XXXXX*** stop blinking over the time.

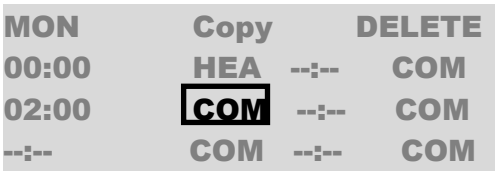


By pressing you can access the field for choosing the mode of operation. This field starts blinking. By pressing the key (ENTER) confirm you want to set the mode of operation. Symbols ***XXX*** start blinking over the operating mode. Use keys or to choose the suitable mode of operation along the set time. To confirm the operating mode press key (ENTER). Symbols ***XXX*** no longer blink over the operating mode.

NOTE
Once you have set the operating mode it continues to be used until a new one is set. I.e. if you set the heating to ***OFF*** on Monday and you do not set anything for the following days, the heating will be ***OFF*** for all the following days as well because there was no change of operation mode.



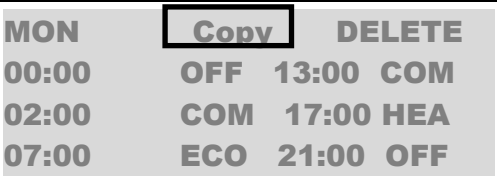
Use the key to navigate to the time set for the next switch-over of the operating mode. Perform the settings the same as for the first switch-over.



To switch the heating to the **COMFORT** mode, choose **COM**. To switch the heating to the **ECO** mode, choose **ECO**. To switch to the Normal mode, choose **HEA** or **COL**. To switch off the heating, choose **OFF**.

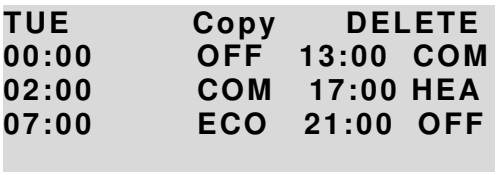
When you set the schedule you can use the key (MENU) to return to the menu.

The set schedule can be copied to the following day by using the following steps:



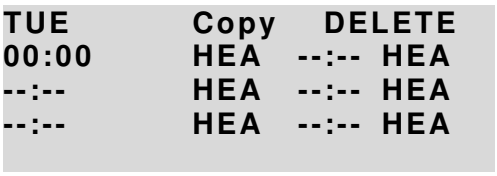
Use the key to navigate to Copy which starts blinking. Press the key (ENTER).

The controller displays the question whether you would like to copy the currently chosen schedule to the following day. To confirm, press key (ENTER). If you do not want to confirm, press key (MENU).



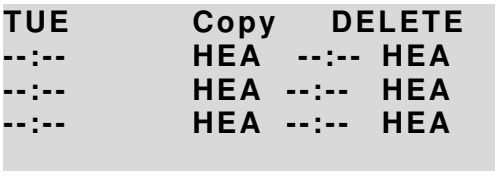
Use this method to copy the schedule for all days of the week.

If you made a mistake, you can delete the schedule for the chosen day using the following steps:



Use the key to navigate to delete, which starts blinking. Press the key (ENTER).

The controller displays the question whether you would like to delete the currently chosen schedule. To confirm, press key (ENTER).
If you do not want to confirm, press key (MENU).



You have deleted all the settings for the chosen day. The chosen day uses the last settings of the previous day.

After performing the setting you can use the key (MENU) to return to the menu.

5.5 Alternative source:

NOTE
For this function and to display the menu ***Alternative source*** on the TERMOTRONIC controller you need the extension regulation with the input-output module TT3003.

The alternative source function is used for using the heat from the solar collectors (SSE) or for using heat from the biomass DHW s. All settings for the alternative source can be found in the menu ***Alternative source***. Heating the storage buffer tank or DHW begins when the temperature of the alternative source reaches the set temperature difference (parameter ***Dif.Min.***) between the alternative source and the buffer tank or DHW. Heating the buffer tank is performed until the set temperature in the menu ***Alternative source***.
The DHW has heating priority (parameter ***Prior. DHW.***). When the temperature in the DHW is reached (parameter ***Set.Temp.***) it is followed by the heating of the buffer tank. After the temperature of the buffer tank is reached the heating of the DHW is turned on again until the temperature set in the parameter ***Max.Temp*** in the menu ***Alternative source*** is reached. If the temperature of the alternative source is still higher than the temperature in the buffer tank, heating of the buffer tank continues until the parameter ***Max. Temp.*** (The maximum temperature of the buffer tank), set in the menu ***Alternative source***.
When the buffer tank and DHW reach the maximum temperature, heating with the alternative source stops.
In case the temperature of the alternative source reaches the temperature of protection (parameter ***protection***), a signal turns on which can control the users to lower the temperature of the alternative source.

NOTE
We recommend keeping the settings set by the authorised contractor for commissions.

1.	**> Alternative source <** **Backup source** **Mode** **Temperatures**	Press key (MENU) in the basic menu. In the user menu choose the menu **Alternative source** with the key and press the key (ENTER).

5.6 Set the temperature for the heating water for heating the pool

NOTE
For this function and to display the menu ***Pool*** on the TERMOTRONIC controller you need the extension regulation with the input-output module TT3003.

The temperature of heating water for Swimming Pool Heating can be performed in the following steps:

1.	**Standby.....** **Cooling 13.5°C** **Return 14.3°C** **DHW 49.0°C**	Press key (MENU) in the basic menu.
2.	**DHW** **> Pool <** **Additional source** **Mode**	In the user menu choose the menu ***Pool*** with the key and press the key (ENTER).
3.	**Schedule** **>Normal OFF <** **Eco -2.0°C** **Comfort 2.0°C**	In the menu ***Pool*** choose the **parameter *Normal*** by pressing and press the (ENTER) key.
4.	**Schedule** ***Normal 30.0°C *** **Eco -2.0°C** **Comfort 2.0°C**	* * appear along the chosen parameter. The keys and change the value of the parameter ***Normal***. This raises or lowers the maximum temperature of swimming pool heating. To confirm the settings press key (ENTER).
5.	**Schedule** **>Normal 30.0°C <** **Eco -2.0°C** **Comfort 2.0°C**	For returning to the basic view press the key (MENU) twice.

NOTE
Swimming pool heating has the lowest priority. The highest priority is reserved for heating DHW, followed by heating or cooling of the building, followed by swimming pool heating.

5.7 Programme for drying screeds

The controller has a built in function of gradual drying of screeds which is especially important for new buildings and before installing flooring.
Before using the programme for drying screeds you have to consult the contractor for screeds. According to his requirements you can use the standard programme or adjust it.
The programme for drying screeds is located in the menu ***mode***.

5.7.1 Standard programme

This programme consists of 8 steps and is normally adjusted for all systems of floor heating. Before activating this programme you have to set the maximum allowed temperature of the return water, i.e. 30 °C.

Steps 1-4: Heating
Step 5: Maintaining the reached temperature
Steps 6-8: Cooling

Steps 1 to 4 mean the heating phases which last 24 hours each (parameter ***Step***). The needed maximum temperature of return water (parameter ***Maximum***) is reached in four equal steps which start with 20,0 °C (parameter ***Initial***). For finishing each step the time limit of 24 hours must be met. If the temperature of individual steps is reached sooner, the device maintains this temperature for the remaining time.
In step 5 we maintain the maximum reached temperature at this level for additional 264 hours (parameter ***Duration***). After this time the following step is possible.
Steps 6 to 8 are cooling phases performed in equal steps as the heating, only in reverse order. Each step lasts 24 hours - which is a total of 72 hours, in this time the temperature of the return water falls from maximum temperature to 20,0 °C (parameter ***Final***).
When this programme finishes completely, the device returns to normal operation.

Example:
The maximum temperature of return water is 300 °C.

Steps 1 to 4: 20,0/23,3/26,6/30,0 °C – in 96 hours
Step 5: 30,0 °C – constant temperature for 264 hours
Steps 6 to 8: 26,6/23,3/20,0 °C – in 96 hours

1.	**> Mode <** **Temperatures**	In the user menu choose the menu ***Mode*** with the key ▼ and press the key ↵ (ENTER).
2.	**Mode AUTO** **>Screed drying NO <** **Initial 20.0°C** **Maximum..... 30.0°C**	Choose the **Screed drying** parameter by pressing ▼ and press the ↵ (ENTER) key.

2.	**Mode AUTO** ***Screed drying YES *** **Initial 20.0°C** **Maximum.....30.0°C**	* * appear along the chosen parameter. Choose the **parameter *Yes*** by pressing ▼ and confirming by pressing the ↵ (ENTER) key. You have thus turned on the operation of the mode ***Screed drying***.
3.	**Maximum.....30.0°C** **Step.....24 h** **Maintaining 264 h** **>Final 20.0°C**	Other parameters of the programme for Screed drying can be changed with the same procedure. For returning to the basic view press the key ⎙ (MENU) twice.

5.8 Meters for operating hours

If you want to see, the operating hours for individual components go to the main menu and press the key ▼ under consecutive no.1 in the table below. If you would like to examine other parameters listed in the table below use the key ▼ to move to them.

Cons. No.	Parameters of operating hours view	Parameter description
1.	**Comp.HEAT.[h]: 0** **Comp.COOL.[h]: 0** **Comp.DHW [h]: 0** **D: 0 D-1: 0**	Operating hours for compressor in heating. Operating hours for compressor in cooling. Operating hours for compressor in heating DHW. D: Operating minutes of the current day. D-1: Operating minutes of the previous day.
2.	**HeatSource [h]: 0** **AdHeater 1[h]: 0** **AdHeater 2[h]: 0** **MainPump.[h]: 0**	Operating hours of the heat source (ventilator, submersible pump). Operating hours of the auxiliary source 1 (flow electric heater). Operating hours of the auxiliary source 2 (external backup source). Operating hours of the main circulation pump.
3.	**Passive [h]: 0** **Alt.Sourc [h]: 0** **Comp.Heata.[s/d]: 0** **Comp.CooL. [s/d]: 0**	Operating hours of passive cooling. Operating hours of backup source. Number of daily power-on of the compressor in heating. Number of daily power-on of the compressor in cooling.
4.	**Comp.DHW [s/d]: 0** **Defrost [s/d]: 0**	Number of daily turn-on for compressor in heating DHW. Number of daily power-on of the compressor in defrost.

5.9 Setting the date, hour and day of the week

In case of incorrect time and date on the TERMOTRONIC controller, follow the steps below:

1.	**Standby.....** **Heating.....35.5°C** **Return 32.3°C** **DHW 49.0°C**	Press key in the basic menu.
2.	**DHW OFF** **T outside 10 °C** **HT60 OFF** **2017/03/03 13:45 Mon**	Press key until the display shows the following: To change the year press key (ENTER).
3.	**DHW OFF** **T outside 10 °C** **HT60 OFF** **2017/03/03 13:45 Mon**	The selected value 2017 starts blinking. Now use key or to choose the proper value and press key (ENTER). Now you can adjust the month 03, day 01, name of the day using the same procedure as you did by setting the year. For returning to the basic view press the key (MENU) twice.

5.10 Remote turn on/off

The basic regulation enables remote turn off via an external signal. Once the signal is gone the device operates in the state before shut down.

NOTE
External turn off can be performed only in case the device was fitted with an externally controlled switch upon installation.

5.11 PV signal

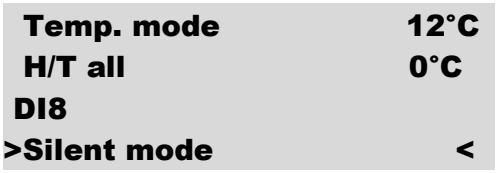
The PV signal can be turned on in the menu ***mode*** with the parameter ***D8-PV***. It allows factory and user settings:

- The factory control setting enables the control of the temperature operating mode. This means that in the case of the winter mode (heating) you can turn on cooling. The parameter is set to ***D8-PV Cooling***. It is most often used in combination with photovoltaic systems.
- The user control setting with parameters ***D8-PV Increase 1, 2, 3 ...*** enables the parameters listed below to raise various operating modes and with it to change the temperature of the mode:
    a) Increase 1: Comfort mode for the buffer tank.
    b) Increase 2: Comfort mode for the DHW.
    c) Increase 3: Comfort mode for the circuits.
    d) Increase 4: Comfort mode for the buffer tank and circuits.
    e) Increase 5: Comfort mode for the DHW and circuits.
    f) Increase 6: Comfort mode for the buffer tank and DHW.
    g) Increase 7: Comfort mode for the buffer tank, DHW and circuits.

5.12 Silent operation mode

Devices of the WPLV type enable two additional operation modes set in the menu ***Mode*** with the parameter ***Silent mode***: The setting ***NRM*** switches the mode of operation into normal heating or cooling mode. The setting ***LOW*** lowers the parameters of power and noise of the device in the heating or cooling mode. The time and day of operation for these two parameters can be adjusted in a similar manner as the schedule. The lowered frequency of operation of the device means that the compressor and ventilators will operate with a lower power and consequently the operation of the device will be less noisy and its heating capacity will be correspondingly lower.

1.



In the menu ***Mode*** use the key to choose the parameter ***Silent mode***. When the symbols **>** **<** appear next to the parameter ***Silent mode***, press the key (ENTER).

2.

The day blinks which the schedule refers to. Choose the day you would like to set the schedule by using keys or . When you choose the day press the key (ENTER).
For a similar editing mode with steps see chapter 5.4.

6 User menus and parameters

NOTE
The display of the TERMOTRONIC controller interface shows only those menus dependent on the type of device and were actually activated during the start-up of the device.

6.1 Menu structure

Main menu	Parameter name	Adjustable value	Scope [°C]	Parameter description
HEATING				
	C/W I	**I**		By setting this parameter, we can raise/lower the temperature for up to 4 temperature steps. Example: I>> means that the currently set temperature of the circuit (the setting in the parameter ***Normal***) is raised for 2 temperature steps.
	Schedule			For settings, see chapter 5.4.
	Normal	**19.9**	19.9…max.	The desired temperature of heating in the ***Normal*** mode of operation.
	Eco	**-2.0**	-10.0…0.0	Lowering the desired temperature in the ***Eco*** mode of operation.
	Comfort	**2.0**	0.0…10.0	Raising the desired temperature in the ***Comfort*** mode of operation.
	Standby	**3.0**	0.0… 10.0	By setting this parameter, we change the desired temperature of the restarted device with the parameter ***Standby*** from 0,0 °C to 10,0 °C. Example: The parameter ***Normal*** is 50,0 °C. The device will be in standby from 47,0 °C to 50,0 °C.
		Const. temperature		Heating with constant temperature "***Const. Temperature***" or optimised heating according to external temperature "***Heating Curve***" OG. MK.
	Correction	**5.0**	0.0…15.0	The correction of the breaking point of the weather curve at outdoor temperature +15,0 °C.
COOLING	**Parameter name**	**Adjustable value**	**Scope [°C]**	**Parameter description**
	Schedule			For settings see chapter 5.4.
	Normal	**19.9**	10.0…19.9	The desired temperature of cooling in the Normal mode of operation.
	Eco	**2.0**	0.0…10.0	Raising the desired temperature in the ***Eco*** mode of operation.
	Comfort	**–2.0**	–10.0… 0.0	Lowering the desired temperature in the Comfort mode of operation.
	Standby	**3.0**	3.0… 10.0	By setting this parameter we change the desired temperature of the restarted device with the parameter ***Standby*** from 0,0 °C to 10,0 °C. Example: The parameter Cooling is set to 23,0 °C. The device will be in standby from 23,0 °C to 26,0 °C.

The parameters are adjusted only in case of active cooling.				
	T.out. min	**30**	0.0…55.0	Setting the external temperature above which the cooling will activate.
	max	**35**	0.0…55.0	Setting the external temperature at which the cooling will deactivate.
The parameters are adjusted only in case of passive cooling.				
	Min.Diff.	**2**	0.0…10.0	The minimal difference between passive temperature and output temp. of source. The additional temperature sensor is installed on the primary side of the passive on the exit.
	Checking TP	**2400**		With this parameter you optimise the operation of the submersible pump because if the temperature difference of the input and output temp. of the groundwater are lower than Min.Dif, the submersible pump does not operate. The electronics will turn off the submersible pump for the time of Checking TP (10...3600 s) turn it on and check if there is a need for cooling.
	for	**300**		
	T.out.min.	**20**	0.0…55.0	Setting the external temperature above which the passive cooling will activate.
	max	**30**	0.0…55.0	Setting the external temperature at which the passive cooling will deactivate.
1. CIRCUIT/ 2. CIRCUIT/ 3. CIRCUIT/ 4. CIRCUIT	**Parameter name**	**Adjustable value**	**Scope [°C]**	**Parameter description**
Displayed menus in the heating mode				
	C/W	**I**		By setting this parameter we lower the temperature for up to 4 °C or raise it for up to 4 °C. Example: I>> means that the currently set temperature of the circuit (the setting in the parameter ***Normal***) is raised for 2 °C.
	Schedule			For settings see chapter 5.4.
	Normal	**19.9**	19.9…max.	By setting this parameter we change the desired temperature in the ***Normal*** operating mode of the HP.
	Eco	**–2.0**	–10.0… 0.0	By setting this parameter we change the desired temperature in the ***ECO*** operating mode of the HP.
	Comfort	**2.0**	0.0…10.0	By setting this parameter we change the desired temperature in the ***Comfort*** operating mode of the HP.
	Hysteresis	**2.0**	1.0… 10.0	By setting this parameter we change the ***Hysteresis*** parameter of the mixing valve from 1,0 °C to 10,0 °C. Example: The parameter ***Hysteresis*** is 30,0 °C. The mixing valve will be in standby from 28,0 °C to 32,0 °C.
		Const. temperature		Heating with constant temperature ***Const. Temperature*** or optimised heating according to external temperature ***Heating Curve***.
	Correction	**5.0**	0.0…15.0	The correction of the breaking point of the weather curve at outdoor temperature +15,0 °C.
	In space	**22.0**	17.0… 27.0	Desired room temperature which can be set from 17,0 to 27,0 °C.
	Stan.space	**0.5**	0.0…2.0	Standby with regulation of the room temperature.
Displayed menus in the cooling mode				
	Schedule			For settings see chapter 5.4.

	Normal	**19.9**	19.9…max.	By setting this parameter we change the desired temperature in the ***Normal*** operating mode of the HP.
	Eco	**–2.0**	–10.0… 0.0	By setting this parameter we change the desired temperature in the ***ECO*** operating mode of the HP.
	Comfort	**2.0**	0.0…10.0	By setting this parameter we change the desired temperature in the ***Comfort*** operating mode of the HP.
	Hysteresis	**2.0**	1.0… 10.0	By setting this parameter we change the ***Hysteresis*** parameter of the mixing valve from 1,0 °C to 10,0 °C. Example: The parameter ***HNormal*** is 30,0 °C. The mixing valve will be in standby from 18,0 °C to 22,0 °C.
	In space	**22.0**	17.0… 27.0	Desired room temperature which can be set from 17 to 27 °C.
	Stan.space	**0.5**	0.0…2.0	Standby with regulation of the room temperature.
DHW	**Parameter name**	**Adjustable value**	**Scope [°C]**	**Parameter description**
	DHW	**OFF**	25.0…55.0	By changing the parameter ***OFF*** to the selected temperature i.e. of 40,0 °C you turn on the DHW.
	Hysteresis	**7.0**	3.0…10.0	By setting this parameter we change the desired temperature ***Hysteresis*** of the device which means again turning on the heating of DHW in the ***DHW***. Example: The parameter ***Hysteresis*** is 7,0 °C. The water temperature in the DHW falls from 40,0 °C to 33,0 °C and heating of the DHW turns on again.
	Schedule			For settings see chapter 5.4.
	Circulation Sched.			By setting this parameter we enable the circulation of the water. See chapter 5.4 for settings, the settings are similar to the ones for the schedule.
	TD	**60**		The heating temperature for preventing the development of legionella.
	TD every	**OFF**		By changing the parameter ***OFF*** to 1...99 days we turn on the thermal disinfection of water performed every 1...99 days.
	Start at	**0:00**		Setting the start of thermal disinfection (from 00:00 to 21:59). If the electrical heater is integrated we recommend the use of this function during the night so as not to interfere with the heating.
	Maximum	**2**		Maximal allowed time of DHW heating [1…4 hours]. In case of an internal flow electric heater the max. time is 12 h, in case of a heater installed in the DHW, the heating can continue simultaneously.
	Eco	**-2.0**	-10.0…0.0	By setting this parameter we change the desired temperature in the ***ECO*** operating mode of the HP.
	Comfort	**2.0**	0.0…10.0	By setting this parameter we change the desired temperature in the ***Comfort*** operating mode of the HP.
	Alarm under	**30,0**	25,0… 50,0	Set an alarm for minimum temperature of water in DHW. The controller reports failure if the temperature od DHW does not reach the

				set temperature under **Alarm under** three times in a row.
	Max ope.	**600**	0… 999	The maximum heating time of DHW
	Time sta.	**30**	0… 999	The standby of DHW heating
POOL	Setting the parameters of swimming pool heating. Display and configuration options if swimming pool heating is active (an expansion module is necessary).			
	Parameter name	**Adjustable value**	**Scope [°C]**	**Parameter description**
	Schedule			For settings see chapter 5.4.
	Normal	**OFF**	19.9…max.	By setting this parameter we change the desired temperature in the ***Normal*** operating mode of the HP.
	Eco	**–2.0**	–10.0… 0.0	By setting this parameter we change the desired temperature in the ***ECO*** operating mode of the HP.
	Comfort	**2.0**	0.0…10.0	By setting this parameter we change the desired temperature in the ***Comfort*** operating mode of the HP.
	Hysteresis	**3.0**	0.1… 1000	By setting this parameter you change the desired temperature ***Hysteresis of the*** device. Example: The parameter ***Normal*** is 50,0 °C. The device will be in standby from 47,0 °C to 50,0 °C.
	Minimum	**30**	30… 1999	In case a need arises for heating the DHW which has always priority to ***Pool Heating***,it will begin after the elapsed time of the delay set in the parameter ***Minim***um In our case this is after 30 minutes.
	HP SET	**45.0**	20.0…60.0	Setting the maximum temperature of the return by heating with device.
	Hysteresis	**4.0**	1.0… -10.0	Temperature difference of standby.
ALTERNATIVE SOURCE	Setting heating and DHW support with the alternative source (solar collectors, solid fuel DHW ...). Display and configuration options if the alternative source is active (an expansion module is necessary).			
	Parameter name	**Adjustable value**	**Scope [°C]**	**Parameter description**
	---Heating---			*Setting heating support. Additional sensor in the buffer tank.*
	Set. Temp.	**60.0**	20.0…80.0	Setting the desired temperature in the buffer tank.
	Dif. Temp.	**15.0**	7.0…20.0	Min. difference between the temp. of the buffer tank and temp. of the alternative source to turn on the HP-AOG of the alternative source.
	Max. Temp.	**80.0**	60.0…90.0	Max. allowed temperature in the buffer tank up to which heating will be performed if the alternative source will have a high enough temperature.
	Min. temp.	**40.0**	20.0…70.0	The minimal temperature alternative source up to which the alternative source will heat the buffer tank.
	---Water heater ---			*Settings for heating support for DHW. The DHW sensor is used (basic module).*
	Set. Temp.	**60.0**	20.0…80.0	Setting the desired temperature in the DHW.
	Dif. Temp.	**15.0**	7.0…20.0	Min. difference between the temp. of the DHW and temp. of the alternative source to turn on the HP-AOG of the alternative source.
	Max. Temp.	**70.0**	60.0…90.0	Max. allowed temperature in the buffer tank up to which heating will be performed if the alternative source will have a high enough temperature.

	Min. Temp.	**40.0**	20.0…70.0	The minimal temperature up to which the alternative source will heat the DHW.
	---Common---			
	Prior. DWH	**YES**		By choosing the parameter ***YES*** heating of the DHW will begin first, followed by heating.
	Cooling	**100.0**	100.0…120.0	Temp. of the alternative source above which cooling is performed.
	Cooled for	**5.0**	1.0…5.0	By how many °C to cool the backup source.
	Dif. Min.	**5.0**	0.0…15.0	The min. difference between the temperature of the alternative source and the temp. of the buffer tank or temp. of the DHW for heating to continue.
	Protection	**100.0**	100.0…130.0	Setting the temperature for activating the signal which the users lowering the temperature of the alternative source can be connected to.
	DHW from alternat.	**ALT**		Heating the DHW directly from the alternative source or the buffer tank [***ALT,CON***].
ADDITIONAL SOURCE	**Parameter name**	**Adjustable value**	**Scope**	**Parameter description**
	Switch to	**Need**		Mode of turning on the alternative source [***Never, Need*** or ***constant]***.
	Bi-point	**–7.0**	-30.0…40.0	Bivalent point. Set outside temperature at which the additional source is activated.
	Delay	**30**	0… 300	[***0…180***] Start-up delay for the additional source despite reached bivalent point.
	Mode	**PARALLEL**		[***PARALLEL, ALTERNATIVE***] Mode of additional source operation.
	Raise for	**5.0**	0.0…20.0	Raising the heating temperature with auxiliary operation.
	AddSourceOnly	**NO**		By changing the parameter from ***NO*** to ***YES*** you can turn on the operation of the backup source (flow el. Heater) in case of a malfunction of the cooling part of the device.
	DHW	**45.0**	10.0…50	Turn on/off and temperature settings of DHW heating with the backup source.
	AntiFreeze	**25**	10.0…60.0	The antifreeze programme maintains the temperature in the system using the backup source in case of a malfunction of the device. This is not true for the TZ malfunction (this temperature is adjustable).
	Remote switch	**OFF**		Turning on the additional source with remote turn-off.
	-Prot.w.AddSource-			Protection the heating system with a backup source.
	AS-on under	**18.0**	10.0…50.0	Turning on the additional source under x °C of the return.
	AS-off abov	**20.0**	10.0…50.0	Turning off the additional source above x °C of the return.
	Delay	**300**	0… 999	Delay of the turning on of the supply pipe.
	Immt. under	**–10.0**	25.0… 60.0	Direct turn on of additional source under this temperature.
	Hys.DHW2	**5.0**	1.0… 10.0	Temperature difference of standby.
	Immt. under	**–10.0**	-20.0… 0.0	Direct activation of additional source under this temperature.
	AS at DHW	NO		Outside the compressor operating range, a flow electric heater is activated to achieve higher DHW temperatures.
MODE	**Parameter name**	**Adjustable value**	**Scope**	**Parameter description**
	Mode	**Winter**		Changing the operating mode [Summer, AUTO, **Winter**]. For a detailed explanation see chapter 4.4.

	Screed drying	**NO**		Turning on the programme for Screed drying [YES, **NO**].
	Initial	**20.0**	10.0…50.0	Changing the initial temperature.
	Maximum	**30.0**	10.0…50.0	Setting the highest temperature up to which the screeds can be heated.
	Step	**24**	10.0… 100.0	Setting the operating hours for the step [10…**24**] h
	Duration	**264**	10.0… 10000	Maintaining the maximum temperature reached [100…**264**..1000h].
	Final	**20.0**	10.0…50.0	End temperature.
	1. Circ.	**Thermostat**		Choosing the regulation for 1. Circuit, turned on via the set value of the thermostat [***Thermostat***], the spatial corrector [***KT-1/KT-2***] or constantly on [***ON***] or off [***OFF***].
	2. Circ.	**Thermostat**		Choosing the regulation for 2. Circuit, turned on via the set value of the thermostat [***Thermostat***], the spatial corrector [***KT-1/KT-2***] or constantly on [***ON***] or off [***OFF***].
	3. Circ.	**Thermostat**		Choosing the regulation for 3. Circuit, turned on via the set value of the thermostat [***Thermostat***], the spatial corrector [***KT-1/KT-2***] or constantly on [***ON***] or off [***OFF***].
	4. Circ.	**Thermostat**		Choosing the regulation for 4. Circuit, turned on via the set value of the thermostat [***Thermostat***], the spatial corrector [***KT-1/KT-2***] or constantly on [***ON***] or off [***OFF***].
	Reduced	**NO**		I case the change of the parameter to ***YES*** the device will operate in a lowered ECO mode during heating/cooling.
	Operation	**AUTO**		The change of the mode for the whole system [***AUTO, ECO, COMFORT***].
	Mode HP	**ON**		Turn on [***ON***], off [***OFF***] and [***AUTO***] modes of setting the parameters. Only when choosing AUTO operation mode you can set the schedule for individual parameters. In case the parameters are set to ***ON*** the parameter will be turned on but you will be unable to change the schedule.
	Mode DHW	**AUTO**		
	Mode 1. Circ.	**AUTO**		
	Mode 2. Circ.	**AUTO**		
	Mode 3. Circ.	**AUTO**		
	Mode 4. Circ.	**AUTO**		
	Mode Temp.	**12**	0.0… 30.0	The temperature at which the mode changes 3x in a row in case of the ***AUTO mode*** at 21:00
	C/W ALL	**I**		The correction of the current desired temperature of the device and all circuits in the step towards + or -.
	D8-PV	**Rise 1**		The buffer tank will switch to the ***Comfort*** mode upon the signal from outside. You can find the descriptions of the set value in chapter 5.11.
	Silent mode			Applies only for type of WPLV and WPL commercial device. For settings, see chapter 5.4..
	Language	**EN**		This parameter sets the desired controller language. The parameter does not exist for commercial devices.
	Model:			It affects the correct display on the web interface Home Cloud and operation of WPLV device. The setting depends on the device generation and is set at the commissioning of WPLV device. In other devices, the model does not have to be changed. The parameter does not exist for commercial devices.

Temperatures	Parameter name	Adjustable value	Scope	Parameter description
	Return	**28.0°C**		The current temperatures of individual sensors are shown. The number of sensors depends on your heating system.
	Flow	**36.1°C**		
	DHW	**48.0°C**		
	Compressor/ T outlet	**11.5°C**		
	Evaporator / T inlet	**16.5°C**		
	T outside	**–5.0°C**		
	2. Circuit	**27.0°C**		
	3. Circuit	**29.0°C**		
	4. Circuit	**27.0°C**		
	Pool	**33.0°C**		
	Passive	**18.5°C**		
	Alt. Buff t.	**45.2°C**		
	Alt. Source	**16.7°C**		
	Buff.tank2	**28,0°C**		
	Inlet air			
	Condenser			
	Evaporator			
	Suct.Line			
	Condension			
	LiquidLine			
	Evap.Press			
	Cond.Press			

7 Registration of the heat pump into the cloud (WEB)

See **Instructions for Connecting the Web Module**.
See **Instructions for Using the Web Interface**.

NOTE
The service of remote control of the heat pump and heating system Cloud.KRONOTERM.com is in its test phase and is completely free.
The information are of exclusively informative nature and the company Kronoterm d.o.o. does not guarantee their accuracy. Kronoterm d.o.o. is also not liable for malfunctions of the system as well as the potential damage to the customer making decisions based on this information.

NOTE
Kronoterm d.o.o. is also not liable for inability of use, disruptions or malfunctions of the web service Cloud.KRONOTERM.com.
The service will be available for all until the company Kronoterm d.o.o. provides it.

NOTE
In the case where Kronoterm d.o.o. for any reason temporarily or permanently can no longer provide the service, the users cannot file any claims arising from this service in relationship with the company Kronoterm d.o.o. for setting up another equivalent service.
The supplier of the service reserves the right to upgrade the software or make certain adjustments and settings key for correct and effective operation of the device through the service **Home Cloud** without prior notice of the user.

8 Service access

For remote technical support over the phone, you must provide your service technician (**ID servicer**) with the 4-digit temporary (**PINZ**) or permanent (**PINS**) code to access your system.

1.

Stand–by.....	
Heating	**35,5°C**
Return	**35,3°C**
DHW	**49,0°C**

The procedure starts in the basic menu of the device controller display Termotronic (where the current operation status is displayed).

2.

–LNK 1– WEB –CLD 1– –
PW: AB12CD34EF56GH
ID: 1234
PINZ:1234 PINS:5678

Press the arrow key  to move to the last display and tell the service technician the numbers.

ID: ID of the service technician who wants temporary or permanent access to your system.
PINZ: Code for temporary access to your system.
PINS: Code for permanent access to your system.

NOTE

–LNK 0– WEB –CLD 1– –
–LNK 1– WEB –CLD 0– –
ID: 1234
PINZ:1234 PINS:5678

For **ID**, **PINZ** and **PINS** code displays, the **LNK** and **CLD** states must be 1.

If the value of either **LNK** or **CLD** is **0**, this means that an error occurred during connection.

9 Information display of operation

The controller interface TERMOTRONIC displays information about the device on its main display at any time. The information needed by the user is described in **Line 1** and **Line 2**. The information needed by the installer is displayed in the **DIAGNOSTICS DISPLAY** described in chapter 9.1.

Line 1	
Line 2	
Return	**32.3°C**
DHW	**49.0°C**

NOTE
Depending on the type of installed device and program, the TERMOTRONIC controller display shows various conditions of the device.

The following information is displayed in **Line 1**:

Line 1	Description
HP STOP.....	The operation of the device is shut down (including circuit control).
ERROR **NO WATER*	There was a switch of the heat source pump or shortage of water for the heat source
HpDHW	Alarm; the pressure in the cooling system was too high during heating DHW.
HpHeat	Alarm; the pressure in the cooling system was too high during heating..
HpCool	Alarm; the pressure in the cooling system was too high during cooling.
LpDHW	Alarm; the pressure in the cooling system was too low during heating DHW.
LpHea	Alarm; the pressure in the cooling system was too low during heating.
LpCol	Alarm; the pressure in the cooling system was too low during cooling.
Tz	Alarm; there was overvoltage, under voltage or inverted phase sequence in the electrical grid.
DHW.....	The device heats DHW.
Screed drying.....	The programme for drying screeds is activated.
Heating.....	The device operates in the heating mode (only in winter mode).
Cooling.....	The device operates in the cooling mode (only in summer mode).
DHW + Add.source	The device (HP – compressor) operates simultaneously with additional heat source (the compressor and additional source simultaneously). Switching on the additional source is described in the section 4.6.
ScreedDry+Add.source	
Heating + DHW	The device operates in the heating mode parallel to the electric heater which is installed into the DHW for heating DHW.
Heating + Add.source	The device (HP – compressor) operates simultaneously with additional heat source (the compressor and additional source simultaneously). Switching on the additional source is described in the section 4.6.
Cooling + DHW	The device operates in the cooling mode parallel to heating of DHW.
SwimmingPoolHeating	The device operates in the swimming pool heating mode.
Heating-Res.source..	Heating is performed only by selected (internal or external) additional heat source, compressor is not working. Additional heat source is switched on manually.
DHW-Res.source.....	
Standby.....	The device is in standby mode because there is no need for heating/cooling or it is in protection mode.
--REMOTE--SHUT-OFF--	Remote deactivation (external signal) of the device is active.
Heating - Biv.Alt.	

DHW - Biv.Alt.	Selected (internal or external) additional heat source is working in bivalent alternative mode. Additional heat source is active and compressor is idle because ambient temperature is below bivalent point. Switching on the additional source is described in the section 4.6.
----Overheating-----	The device operates in the thermal disinfection mode.
DEFROST	The device is in the evaporator defrost mode (only WPL/WPLV).
-Comp.temp too high-	Too high compressor temperature.
---? Efficiency ?---	The device does not heat (does not generate enough heat).
Defrost T.Flow ALARM	Alarm; the water temperature of the return during defrost was too low.
------ Max dT ------	The temperature difference between the supply and return is too high.
ERROR HeatSourceTemp	Source temperature is outside the operating range.
--MODULE 3 - ALARM--	Malfunction of one of the modules. The device will restart automatically after the error is resolved.
--MODULE 4 - ALARM--	
--MODULE 2 - ALARM--	
--MODULE 1 - ALARM--	
---MODUL 5 - ALARM--	*No communication with Carel EEV 1.*
---MODUL 6 - ALARM--	*No communication with Carel EEV 2.*
-- RESET MODUL 1 ---	One of the modules is in the self-reset process.
-- RESET MODUL 2 ---	
-- RESET MODUL 3 ---	
-- RESET MODUL 4 ---	
Caution flow :	The flow switch is not closed – there is no or not enough water flow through the device. If there is no or not enough water flow through device in 120 s, the device goes into compressor protection mode (Standby). When protection mode elapses, it tries to start again.
ERROR ..Sensor..... 1	Alarm; one of the sensors is not connected or is damaged.
ERROR ..Sensor..... 2	
ERROR ..Sensor..... 3	
ERROR ..Sensor..... 4	
ERROR ..Sensor..... 5	
ERROR ..Sensor..... 6	
ERROR ..Sensor..... 7	
ERROR ..Sensor..... 8	
ERROR ..Sensor..... 9	
ERROR ..Sensor..... 10	
ERROR ..Sensor..... 11	
ERROR ..Sensor..... 12	
ERROR ..Sensor..... 13	
ERROR ..Sensor..... 14	
ERROR ..Sensor..... 15	
ERROR ..Sensor..... 16	
ERROR ..Sensor..... 17	
ERROR ..Sensor..... 18	
--- ALARM DHW ----	The device was unable to heat the water higher than the min. set value for 3 times.
ERROR Cascade:	The warning is shown if an individual device does not respond 3 x during cascade regulation verification.
-> Checking :	The device is verifying the temperature of return.

ERROR..Thermostat...1	One of the room correctors is not connected properly or is malfunctioning.
ERROR..Thermostat...2	
ERROR..Thermostat...3	
ERROR..Thermostat...4	
Minimum operating!	*Compressor interruption during condition minimum operating time.*
OC1 communication	*No communication with main CP*
OC2 communication	*No communication with source CP*
-- ALARM RTC-FAIL --	There is an error on the PLC frequency oscillator.
-- Max. ODT. / h --	The maximal limit of defrosting per hour is reached.
--MODULE 5 - ALARM--	Malfunction of one of the modules. The device will restart automatically after the error is resolved.
--MODULE 6 - ALARM--	
ERROR ..Sensor..... 14	One of the sensors is not connected or is damaged.
Carel EEV error	The Carel controller is malfunctioning.
Carel probe 1 error	One of the probes is not connected or is damaged.
Carel probe 2 error	
Carel probe 3 error	
Carel probe 4 error	
--MODULE INV ALARM-	No connection with the external device
INV Error xx	Number of external device error.
-- Low Comp.temp --	The compressor temperature is too low. After three indications, the PZ PROG is activated.
-- Low Cond.temp -	The plate heat exchanger temperature is too low. After three indications, the PZ PROG is activated.

The following information is displayed in **Line 2**:

Line 2	Description
Cooling [OFF / 22.0°C]	The device is operating in the cooling mode; set point of cooling water is written right.
Heating [OFF / 45,0°C]	The device is operating in the heating mode; set point of heating water is written right.
Heating FP PROG	The device is operating in the anti-freeze programme (back-up operation) which is activated in case of alarm on the device. The device maintains the temperature set with the parameter ***Antifreeze*.**
Passive Cooling	The device operates in the passive cooling mode.

9.1 Diagnostic displays

Other important information about the device for the installer and are not shown in **Line 1** and **Line 2** are shown in **INFORMATION LINE 1** and **INFORMATION LINE 2** in **DIAGNOSTIC DISPLAY.**
To see the current status or malfunction of the device, follow these steps:

1.

```
 - DIAGNOSTIC - DISPLAY -
I              IN             I
I              IN             I
----------     IN     ----------
```

For accessing diagnostics on the basic display press key ▼ until the display on the left is displayed. Press the key ↵ (ENTER) to enter the menu **SERVICE DISPLAY**.

Depending on the current operation upon entry the display shows you various parameters.

2.

```
Com: 0s                AT:0s
BDV: 0s                AI5:0'
Information line 1
Information line 2
```

Com*:* Delayed start-up of compressor.
BDV: Blockage of the supply pipe.
AT: Timer after alarm. In the case of an alarm it is not possible to reset the system 2x in this time.
AI5: Timer after detected too low or too high external temperature. In this case the HP operates in the ***FP_PROG*** mode (max. Operation time of the programme is 60 min9 until the external temperature is within acceptable limits.
Info. line 1: **Display of blockages** (here all possible blockages are displayed for protection the HP listed in the table below).
Info. line 2: **Display of warnings** (here light alarms of the HP listed in the table below).

INFORMATION LINE1	Description
CompProtection	Compressor start delay.
Comp. start in	Blockage of the compressor - protection against too frequent turns on.
INFORMATION LINE 2	**Description**
Estrih timer :	The screed drying mode is activated, the timer shows the time of the program's operation.
CAUTION.....Min Flow	The supply pipe has fallen below the minimal value set with the parameter ***Min Supp. Line.*** The device will turn on when the sum of the parameters set in the parameter ***Min Supp. Line*** and the parameter ***Standby*** elapse***.***
WARNING source inlet	Warning/protection of minimal inlet water temperature.
DHW C.Pump	After heating DHW the device switches to forced heating for the set time.
Temp.check Ret	The main circulation pump is activated, it checks the temperature of the return.
Caution ! Flow!....	The flow switch is not connected, there is no flow, depending on the set time in various types of device (DHW or WW) the submersible pump turns off and switches to compressor protection.
Start DEF.in	Countdown of the delay until the start of defrosting; 300 s adjustable.
--? HEAT.Cascade ?--	Cascade in the heating mode did not get conformation of the external/internal device.
--? DHW Cascade ?--	Cascade in the DHW heating mode did not get conformation of the external/internal device.

- Shut-off Cascade -	Cascade turn off sequence.
Fault Flow Switch	After the elapsed time of checking the operation of the circulation switch the device displays an error.
..Shutdown at.	Minimal time of compressor operation. After this time in case the conditions for the shut down are met, it is enabled.

10 Disruptions in operation, alarms and troubleshooting

After instalment and successful commissioning the device is ready for regular operation. The operation of the device is protected by multiple protection mechanisms:

- ► High pressure switch: in case operating pressure is too high.
- ► Low pressure switch: in case of too-low operating pressure.
- ► Flow switch: for protection flow loss.
- ► Temperature sensors: for protection the temperature of the return, supply pipe, compressor and evaporator.
- ► Safety thermostat: for protection the built-in electric heater.
- ► Phase controller and under- and over-voltage protection: for protection the correct sequence of electric phases and appropriate electric voltage.

In case of disruptions in the operation first check whether the display displays an error message. Find the description of the malfunction in the table below and try to resolve it in accordance with the instructions in chapter 10.2. In case you cannot resolve the malfunction alone or you are prohibited from doing so, act in accordance with the instructions 1., 2., and 3., to resolve the malfunction listed in the warranty. Contact the installer who installed your device to resolve the malfunction. In case the malfunction cannot be resolved, he will contact the customer service of the manufacturer who will resolve the malfunction.

NOTE

In case of a malfunction the display displays a red alarm light (ALARM).

10.1 Errors and alarms in normal operation mode

Prikaz alarmov
ERROR **NO WATER*
HpDHW
HpHeat
HpCool
LpDHW
LpHea
LpCol
Tz
-Comp.temp too high-
---? Efficiency ?---
Defrost T.Flow ALARM
------ Max dT ------
ERROR HeatSourceTemp
--MODULE - ALARM--
-- RESET MODUL ---
ERROR ..Sensor..... 4
--- ALARM DHW ----
ERROR Cascade:
ERROR..Thermostat...

-- ALARM RTC-FAIL --
-- Max. ODT. / h --
Carel EEV error
Carel probe error
INV Error
DHW-Res.source.....
Heating-Res.source..
FP PROG (2. line)
------ Max dT ------
-- Low Comp.temp --
-- Low Cond.temp -

After fixing the cause for the error you have to restart the device with the key ↵ (ENTER) **- hold it for 3 seconds.** After the startup sequence elapses the device will start operating.

10.2 Troubleshooting

Resolve the errors using the **procedure for resolving errors.** The column **Check, resolve the error** prescribes how to resolve the error.

NOTE
In case you cannot resolve the malfunction alone or you are prohibited from doing so, act in accordance with the instructions 1., 2., and 3., to resolve the malfunction listed in the warranty.

10.2.1 Air-water device type

Error	Description of error	Reason for the error	Procedure to resolve the error	Check, resolve the error
HpHeat	Exceeded pressure in the cooling system in heating mode.	▸ *Insufficient water flow through the condenser.*	1. Check the heating system if the circulation pump is working or if all valves and flaps are correctly opened/closed, 2. cleans the strainer if it is blocked 3. fill out the system (min. 1.5–2 bar), 4. vent the system.	The user
HpDHW.	Exceeded pressure in the cooling system in heating DHW.	▸ *Insufficient water flow through the condenser.*	1. Check the heating system if the circulation pump is working or if all valves and flaps are correctly opened/closed, *2.* cleans the strainer if it is blocked *3.* fill out the system (min. 1.5–2 bar), *4.* vent the system.	The user
HpCool.	Exceeded pressure in the cooling system in cooling mode.	▸ *Insufficient air flow through the condenser.*	1. Check the operation of the fan on the heat pump, 2. enable unobstructed flow through the condenser,	The user
			3. clean the blades of the condenser.	Installer
		▸ *Insufficient water flow through the condenser.*	1. Check the heating system if the circulation pump is working or if all valves and flaps are correctly opened/closed, 2. enable unobstructed flow through the condenser,	The user
			3. clean the blades of the condenser.	Installer

Error	Description of error	Reason for the error	Procedure to resolve the error	Check, resolve the error
LpHeat.	Low pressure in the cooling system in heating mode.	▸ *Insufficient air flow through the evaporator.* ▸ *Frozen blades of the evaporator and basin.*	1. Check the operation of the fan on the heat pump,	The user
			2. enable unobstructed air flow through the evaporator.	
			3. check the condenser drain	
			4. Activate manual defrost but no more than two times.	Installer
			5. check the heating cable operation.	
		▸ *Insufficient water flow through the evaporator.*	Water-water:	
			1. Check the heat source whether the heat pump is operational, whether all valves or flaps are correctly opened/closed, whether there is enough ground water,	The user
			2. clean the strainer.	
			Earth-water:	
			1. Check the heat source whether the circulation pump is operational, whether all valves or flaps are correctly opened/closed, whether there is enough antifreeze in the heat source,	The user
			2. clean the strainer.	
LpDHW	Low pressure in the cooling system in heating DHW.	▸ *Insufficient air flow through the evaporator.* ▸ *Frozen blades of the evaporator and basin.*	1. check the condenser drain	The user
			2. Activate manual defrost but no more than two times.	
			3. check the heating cable operation.	Installer
		▸ *Insufficient water flow through the evaporator.*	Water-water:	
			1. Check the heat source whether the heat pump is operational, whether all valves or flaps are correctly opened/closed, whether there is enough ground water,	The user
			2. clean the strainer.	
			Earth-water:	
			1. Check the heat source whether the circulation pump is operational, whether all valves or flaps are correctly opened/closed, whether there is enough antifreeze in the heat source,	The user
			2. clean the strainer.	
LpCol.	Low pressure in the cooling system in cooling mode.	▸ *Insufficient water flow through the evaporator.*	1. Check the heating/cooling system if the circulation pump is working or if all valves and flaps are correctly opened/closed,	The user
			2. cleans the strainer if it is blocked	

			3. fill out the system (min. 1.5–2 bar),	
			4. vent the system.	
Tz	There was an error in the electrical supply.	▸ *Phase failure.*	1. Check the presence of all phases and adequacy of voltage,	*Installer*
			2. Change the phase sequence - change the order of the phases.	*Authorised maintenance worker*
NO WATER	There is insufficient flow of medium (water) between HP and the heating system.	▸ *Insufficient water flow through the condenser/evaporator.*	*1.* Check the heating system if the circulation pump is working or if all valves and flaps are correctly opened/closed,	The user
			2. clean the strainer,	The user
			3. fill out the system (1.5–2 bar),	The user
			4. vent the system.	The user
SENSORS.	Error on one of the sensors.	▸ *Error in data acquisition.*	1. Disconnect the device from the power source and reconnect it in 10 minutes.	The user
Max. dT	The temperature between the return and supply line is too high.	▸ *There was a disturbance in the flow.*	*1.* Check the heating system if the circulation pump is working or if all valves and flaps are correctly opened/closed,	The user
			2. clean the strainer,	The user
			3. fill out the system (1.5–2 bar)	The user
			4. vent the system.	The user
Defrost T.Flow ALARM	The HP does not have enough energy to defrost.	▸ *The water temperature of the return during defrost was too low.*	1. Heat the buffer tank with the backup source (at least to 20 °C),	The user
			2. turn on the buffer tank heating together with the heat pump and backup source,	The user
			3. gradually turns on the heat extractors from the buffer tank (1 circuit at a time).	The user
ALARM DHW	The HP could not heat the DHW above the minimal value.	▸ *Insufficient water flow through the condenser.* ▸ *The sensor is not in its right place.*	*1.* Check the heating system if the circulation pump is working or if all valves and flaps are correctly opened/closed,	The user
			2. clean the strainer,	The user
			3. fill out the system (1.5–2 bar),	The user
			4. vent the system,	The user
			5. check if the sensor is in its designated place.	*Installer*

Error	Description of error	Reason for the error	Procedure to resolve the error	Check, resolve the error
?Efficiency?	The HP does not function efficiently enough.	▸ *The device does not reach a high enough temperature of the return.*	*Contact the authorised service.*	*Authorised maintenance worker*
ALARM RTC-FAIL	There is an error on the frequency oscillator on the PLC.	▸ *The frequency oscillator on the HP electronics is damaged.*	1. A reset of the error is possible by pressing and holding ENTER for 3 seconds.	*The user*
			2. In case the reset does not correct the error an authorised service must be contacted.	*Authorised maintenance worker*
-- -Comp.temp too high-	Too high compressor temperature.	Allowed max. compressor temperature reached.	1. Reset the error.	
			2. Contact the authorised service.	*Authorised maintenance worker*
ERROR HeatSourceTemp	Source temperature is outside the operating range.	▸ *Source temperature is outside the operating range.*	1. Check the heating system if the circulation pump is working or if all valves and flaps are correctly opened/closed, 2. clean the strainer.	*The user*
			3. *Contact the authorised service.*	*Authorised maintenance worker*
---MODUL - ALARM--	Malfunction of one of the modules.	▸ *Communication error.* ▸ *Module malfunction.*	*1. Contact the authorised service.*	*Authorised maintenance worker*
- RESET MODUL -	The module is in the self-reset process.	▸ *Electromagnetic interference.* ▸ *Voltage fluctuation.*	*1. Contact the authorised service.*	*Authorised maintenance worker*
ERROR Cascade:	The module MD1 did not respond 3 x to module MD4.	▸ *Communication error.* ▸ *The device does not have a guaranteed constant power.*	*1. Contact the authorised service.*	*Authorised maintenance worker*
ERROR Thermostat	Faulty connection or malfunction of the room corrector.	▸ *Error in data acquisition.* ▸ *Thermostat malfunction.*	1. Check whether the thermostat is working. 2. Check the regulator settings.	*The user* *Installer*
-- Max. ODT. / h --	The maximal limit of defrosting per hour is reached.		*1. Contact the authorised service.*	*Authorised maintenance worker*
Carel EEV error	The Carel controller is malfunctioning.	▸ *Error in data acquisition.* ▸ *Controller malfunction.*	*1. Contact the authorised service.*	*Authorised maintenance worker*
Carel probe error	Faulty connection or malfunction of the probe.	▸ *Error in data acquisition.* ▸ *Probe error.*	*1. Contact the authorised service.*	*Authorised maintenance worker*
INV Error	External device error.	▸ *Error in data acquisition.* ▸ *External device error.*	1. Reset the device.	*The user*
			2. *Contact the authorised service.*	*Authorised maintenance worker*
-- Low Comp.temp --		▸ Allowed min. compressor temperature reached.	1. Reset the device.	*The user*
			2. *Contact the authorised service.*	*Authorised maintenance worker*
-- Low Cond.temp -	The plate heat exchanger temperature is too low.	▸ The plate heat exchanger temperature reached min. allowed temperature.	*1. Contact the authorised service.*	*Authorised maintenance worker*

After successfully establishing the cause of the safety element shut down and resolving the error you can manually turn on the device again by holding the key ↵ (ENTER) for approx. 3 seconds. After the startup sequence elapses the device will start operating.

11 Device maintenance

For a long, reliable and economical device operation regular maintenance is essential. Instructions for maintenance of individual elements of the heating system and the device can be found in the installation manual.

NOTE
The Republic of Slovenia in accordance with regulations on the use of substances harmful to the ozone and fluorinated greenhouse gasses (**Ur.l.RS, št.60/16**) obliges **the manager of the real estate** (4th article) which contains **≥ 3kg of gas** to report the device to the environmental agency Agencija Republike Slovenije za okolje – ARSO (web page: http://okolje.arso.gov.si/REMIS_TGP/OLESVZ/R_Default.aspx) in three months after commissioning. **The registration is free.**

NOTE
Devices in EU which contain fluorinated greenhouse gasses are regulated **by the directive (EU) 517/2014**, which among others also defines the rules for maintenance, use, collecting and destroying fluorinated greenhouse gasses and similar accompanying measures which you must consider!

12 Settings of your heating system at start-up

In case you need help from the installer who performed the installation or an authorised service, record in the tables below:

- Your designations of rooms you control with the parameters of the control interface TERMOTRONIC.
- The values of the parameters ***Normal*** and ***Correction*** which you have set for your heating system.
- The setting for the parameter (371) ***Buff.tank***

The parameter in the heating mode

Type of circuit (circle it)	The set heating mode (circle it)	Conception of the circuits of the control interface TERMOTRONIC	Recommended set temperature			Your designations of rooms
			Normal	***Correction***	***Hysteresis***	
	Weather control/ maintaining constant temperature	***Heating***				
direct		***1. Circuit***				
direct/mixing		***2. Circuit***				
direct/mixing		***3. Circuit***				
direct/mixing		***4. Circuit***				

The parameter in the cooling mode:

Type of circuit (circle it)	Conception of the circuits of the control interface TERMOTRONIC	Recommended set temperature		Your designations of rooms
		Normal	***Hysteresis***	
	Cooling			
direct	***1. Circuit***			
direct/mixing	***2. Circuit***			
direct/mixing	***3. Circuit***			
direct/mixing	***4. Circuit***			

Parameters for DHW:

Conception of the parameters of the control interface TERMOTRONIC	Recommended set temperature		Your designations of rooms
	Normal	***Standby***	
DHW			

Filled out by the authorised contractor for commissions:

Setting the parameter (371) ***Buff.tank*** at start-up (circle it)	
Buff.const	***Buff.if needed***
Designation of hydraulic wiring diagram (Catalogue of hydraulic wiring diagrams of the device manufacturer) according to which the wiring of the DHW room is implemented	

The headquarters of the company and place of production

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