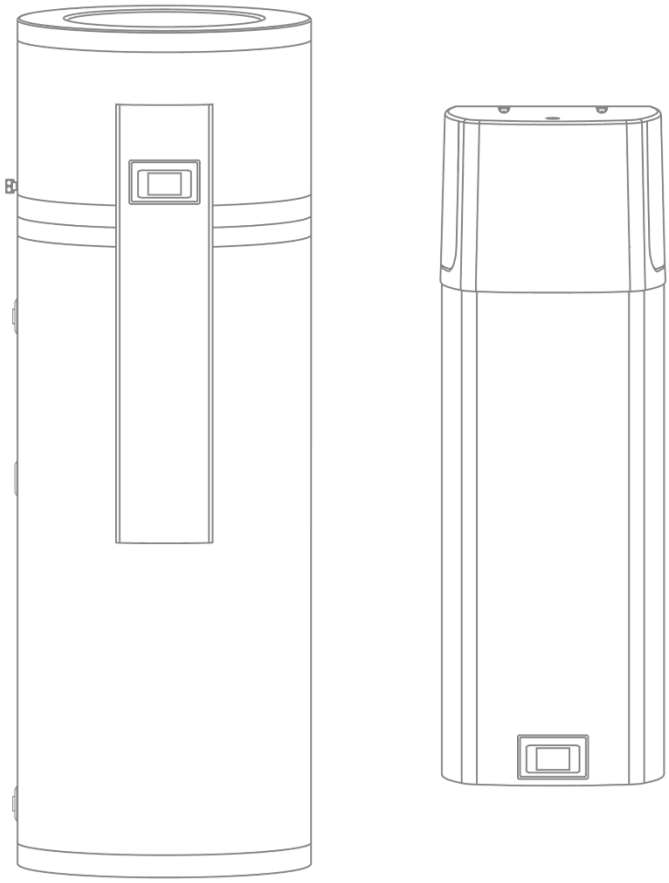
Cetetherm

User instruction CeteBoost

Booster heat pumps



This manual is published by Cetetherm.

Cetetherm can without further notice make changes and improvements to the content in this manual if it is necessary due to printing mistakes, wrong information or changes in the hardware or software.

All these types of changes will be included in future release of the manual.

Table of Contents

WARNINGS 4
Dear Customer, ... 5
FIELD OF USE 5
STORAGE AND TRANSPORT 5
THE PRINCIPLE OF OPERATION 5
DIMENSIONS 6
WALL-MOUNTED VERSION 6
FLOOR-STANDING VERSION 6
INSTALLATION OF THE HEAT PUMP 7
WALL-MOUNTED VERSION 8
FLOOR-STANDING VERSION 8
CONNECTION TO WATER SUPPLY MAINS 9
CONNECTION TO THE CENTRAL HEATING SYSTEM 9
CONNECTING A RADIATOR (applicable for TC…ZWR models) 10
CONNECTING THE HEAT PUMP TO THE POWER SUPPLY NETWORK 11
WALL-MOUNTED VERSION 11
FLOOR-STANDING VERSION 11
CONNECTING AN EXTERNAL CIRCULATION PUMP, ELECTROMAGNETIC VALVE ETC. 12
HEAT PUMP OPERATION 12
STARTING/STOPPING THE HEAT PUMP 13
USER MENU 13
RESERVE MODE OF OPERATION OF THE HEAT PUMP 14
SETTING THE HOUR AND DAY OF THE WEEK 15
SETTING THE TEMPERATURE 16
ANTI-LEGIONELLA PROGRAMME 18
DISPLAY OF QUANTITY OF HOT WATER IN THE STORAGE TANK 19
"TURBO" FEATURE 19
"HOT" FEATURE 20
"VACATION" MODE 20
TIMER FEATURE 21
"RADIATOR HEATING" FEATURE (APPLIES TO TC...ZWR MODELS) 24
PHOTOVOLTAICS MODE ("PV" FEATURE) 31
OPERATION WITH REGARD TO THE ELECTRIC ENERGY TARIFF ("LT" FEATURE) 32
EXTERNAL CONTROL OF THE HEAT PUMP ("ECHP" FEATURE) 33
CONNECTION OF EXTERNAL CONTROL OF THE "PV", "LT", "ECH" AND "ECHP" FEATURES 35
MANUAL RESERVE MODE OF OPERATION 35
CHILD LOCK 36
MAINTENANCE 37
TECHNICAL CHARACTERISTICS 40

WARNINGS

	This device can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the device in a safe way and understand the hazards involved.
	Children should not play with the device.
	Cleaning and user maintenance shall not be performed by children without supervision.
	Always transport the heat pump in an upright position; exceptionally, it may be tilted by 35° in all directions. Be careful not to damage the housing or the vital component parts of the heat pump during transport.
	The heat pump is not intended for industrial use and use in premises where corrosive and explosive substances are present.
	The connection of the heat pump to the mains should be performed in accordance with standards for electrical appliances.
	An all-poles disconnect switch should be installed between the heat pump and the mains in accordance with the national installation standards.
	The heat pump should not be in operation without water in the hot water tank, because of danger of destruction of the compressor!
	The installation should be performed in accordance with the valid regulations and the instructions of the manufacturer. It should be performed by a professionally trained installation expert.
	It is necessary to install a safety valve with the rated pressure (info on the data plate) to the inlet pipe of the heat pump, to prevent the pressure in the water tank from rising by more than 0.1 MPa (1 bar). Water may drip from the outlet opening of the safety valve, so the outlet opening should be set to atmospheric pressure.
	Water may drip from the outlet opening of the safety valve, so the outlet opening should be set to atmospheric pressure.
	The outlet of the safety valve should be installed facing downwards and in a non-freezing area.
	To ensure proper functioning of the safety valve, the user should perform regular controls to remove limescale and make sure the safety valve is not blocked.
	Do not install a stop valve between the heat pump and the safety valve, because it will impair the functioning of the safety valve!
	The elements in the electronic control unit are live even after pressing the off field (9) on the heat pump.
	If you disconnect the heat pump from the power supply, please drain any water from the pump to prevent freezing.
	Water is drained from the heat pump through the water tank inlet pipe. For this purpose, it is recommendable to install a special element or an outlet valve between the safety valve and the inlet pipe.
	Water can be drained from the pump through the boiler inlet pipe. For this purpose, it is advisable to install a special element or outlet valve between the inlet pipe and safety valve.
	This product contains fluorinated greenhouse gases. Hermetically sealed.

Our products incorporate components that are both environmentally safe and harmless to health, so they can be disassembled as easily as possible and recycled once they reach their final life stage.
Recycling of materials reduces the quantity of waste and the need for production of raw materials (e.g. metals) which requires a substantial amount of energy and causes release of harmful substances. Recycling procedures reduce the consumption of natural resources, as the waste parts made of plastic and metal can be returned to various production processes.

For more information on waste disposal, please visit your waste collection centre or the store where the product was purchased.

Dear Customer,

Thank you for purchasing the domestic water heat pump. You have put trust in one of the most perfected appliances of this kind. Its material, design and testing were made in compliance with related applicable standards.
Power, capacity and safety systems were thoroughly tested. Tests were made individually for each component part, as well as for the finished product, according to international quality standards.
Please read these Instructions for Installation and Use carefully before use in order to prevent eventual problems that may cause damage to the product.
Keep this Manual for future reference, as a source of information on the details of the heat pump operation or its maintenance. Instructions for Installation and Use can also be found on our website http://www.tiki.si.
Of course, you can always contact any of our experienced authorised servicing technicians for occasional maintenance.

FIELD OF USE

This appliance is intended for the preparation of domestic hot water in households and other consumers where the daily consumption of hot water (40 °C) does not exceed 110 l to 250 l (depending on the model). The appliance must be connected to the domestic hot water pipeline and the heating circuit of the building's central heating. To operate it needs electric energy.
If you are planning to install the appliance in a room with a bathtub or a shower, it is obligatory to observe the provisions of the IEC 60364-7-701 (VDE 0100, Teil 701) standard.
Do not use the appliance in a manner not compliant with the instructions. The appliance is not intended for industrial use and use in premises with corrosive and explosive substances.
The manufacturer shall not be responsible for injuries resulting from inappropriate installation and inappropriate use that is not in accordance with the instructions for assembly and use.

The instructions for use are a component and important part of this product and must be delivered to the customer. Read the warnings carefully, as they contain important directions related to safety during operation, use and maintenance.
Keep these Instructions for later use.

Your heat pump's marking is indicated on the data plate, which is located on the bottom side of the appliance between the inlet pipes for domestic water (wall-mounted version) or on the back of the cover (floor-standing version).

Once the packaging is removed, check the contents. When in doubt, contact your dealer. Never let children play with the packaging parts (clamping, plastic bags, expanded polystyrol, etc.) – potential risk. Make sure to remove and dispose of the packaging safely and in an environmentally friendly way.

STORAGE AND TRANSPORT

The heat pump must be stored and transported in an upright position. Store in a dry and clean place.

THE PRINCIPLE OF OPERATION

The heat pump is a thermodynamic heat generator which increases the temperature of heat from the lower level (e.g. temperature of heating water source water) to a higher level (e.g. Domestic Hot Water - DHW).
The removed heat together with electrical energy generates thermal energy available for sanitary water heating.

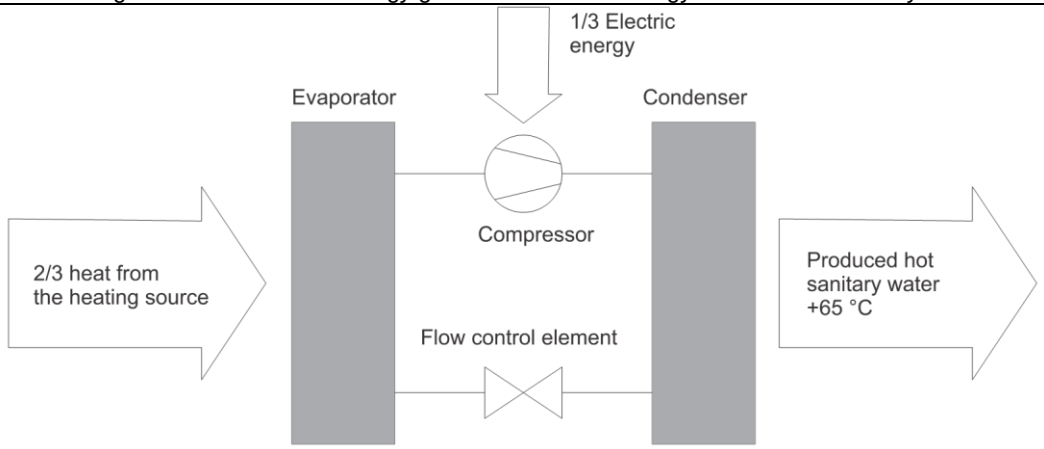


Fig. 1: Chart of energy flow through the heat pump unit

DIMENSIONS

WALL-MOUNTED VERSION

	A	B	C	D	E	F
CTB120IW	1497	645	175	230	G ¾	/
CTB120IWR	1497	645	175	230	G ¾	G ¾

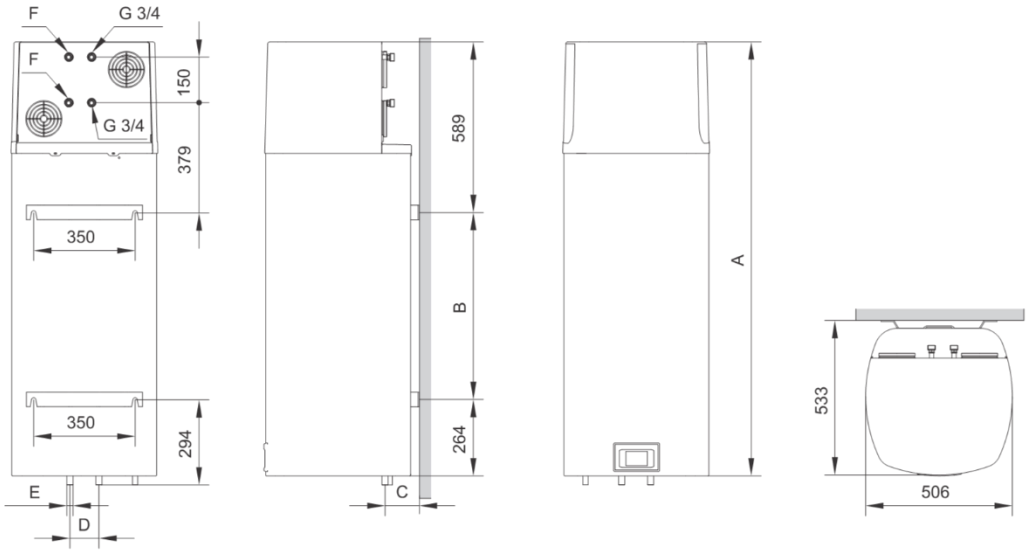


Fig. 2a: Connection and installation dimensions of the heat pump [mm]

FLOOR-STANDING VERSION

	A	B	E	F	G	HV	CV	TV
CTB200IF	25	130	880	1240	1835	G ¾	G ¾	G ¾

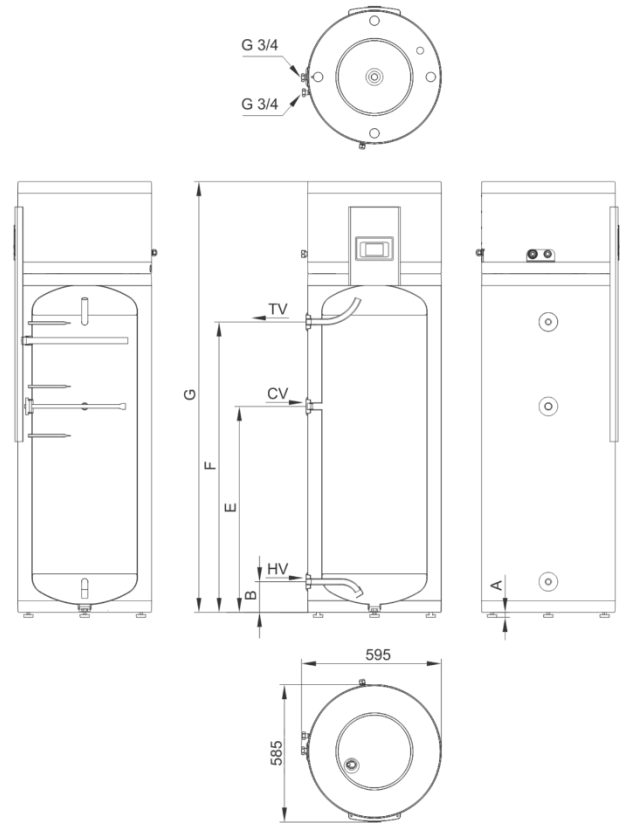


Fig. 2b: Connection and installation dimensions of the heat pump [mm]

INSTALLATION OF THE HEAT PUMP

The heat pump must be placed in a room free from freezing. The appliance must be connected to the heating circuit of the building's central heating.

During operation, domestic water is heated using the energy from the central heating system. For optimal operation of the heat pump, water temperature must be between 12 °C and 40 °C in the heating circuit. The user must ensure a sufficient flow rate of the heating water – the source. Minimum flow rate of the source that is needed for the heat pump to operate is 120 l/h. A deaerator must be placed on the highest point of the source inlets. Heat losses are greater in a room with cold air. To prevent condensation, it is recommended to insulate the pipes connected to the source.

If the temperature of the source is lower than 12 °C or higher than 40 °C, the electric heater will activate to heat the domestic water. The electric heater will also activate if the flow rate of the source is lower than 120 l/h. The heat pump will operate in reserve mode.

To reduce the transfer of noise and vibrations through walls or the floor to rooms where this would be disturbing (bedrooms, rooms intended for resting) please make sure to take the following measures:

- install flexible joints for hydraulic connections
- plan vibration insulation for wall openings
- use positioning feet (for floor-standing version)

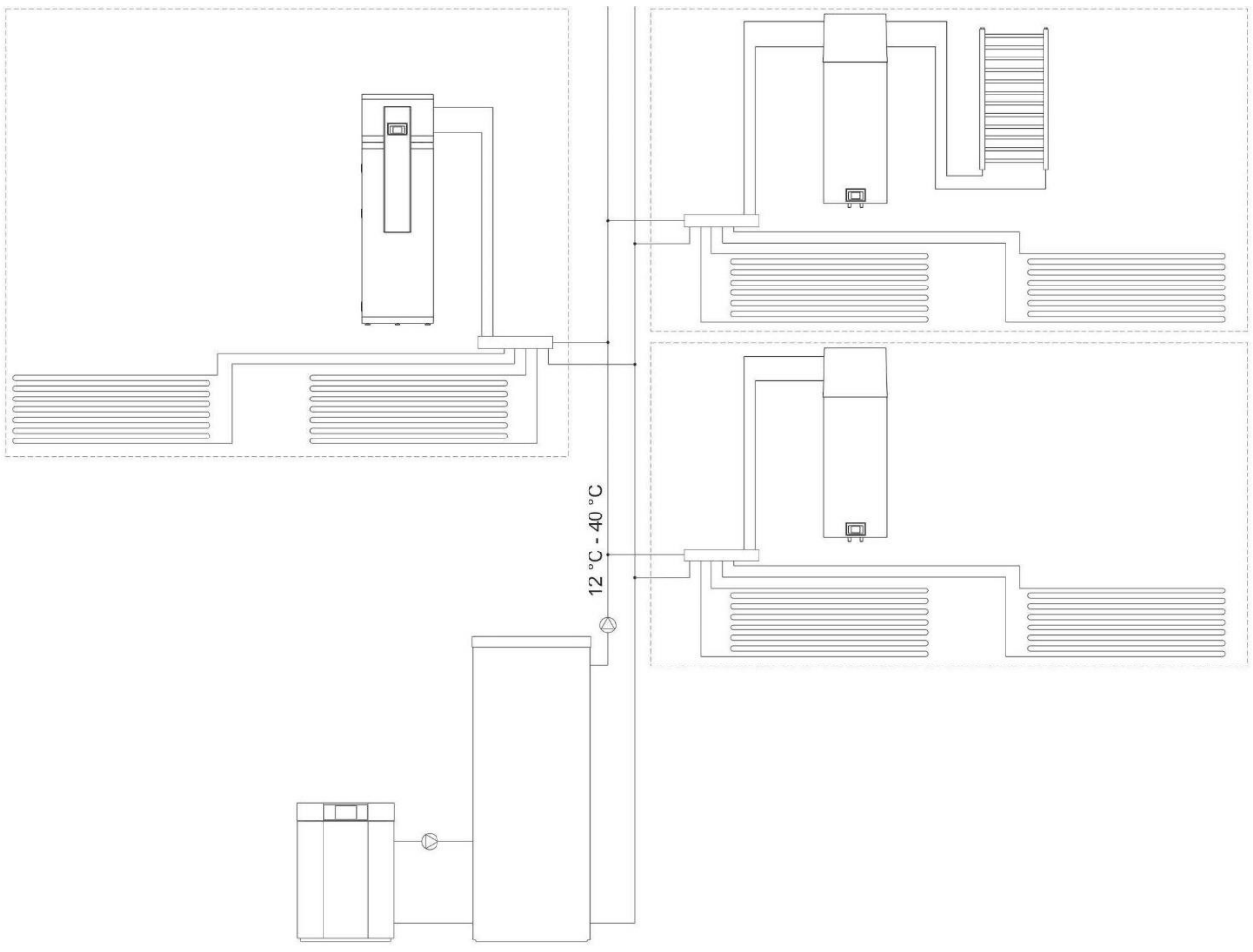


Fig. 3: Possible installation of a heat pump

WALL-MOUNTED VERSION

When selecting the place of installation, pay attention to the solidity of the wall – can it take the weight of the heat pump together with the weight of the water inside the water tank? Mount the heat pump in an upright position only, using wall screws with a nominal diameter of min. 8 mm. A wall with poor bearing capacity must be properly reinforced at the place of installation. For easier inspection and replacement of the magnesium anode, it is recommended to leave enough space between the appliance and the ground (Fig.
4a). Otherwise the appliance will have to be dismounted from the wall for service interventions.
Make sure to take measures to prevent the transfer of noise and vibrations through walls where this would be disturbing (bedrooms, rooms intended for resting).
A radiator can be connected only to the TC…ZWR model.

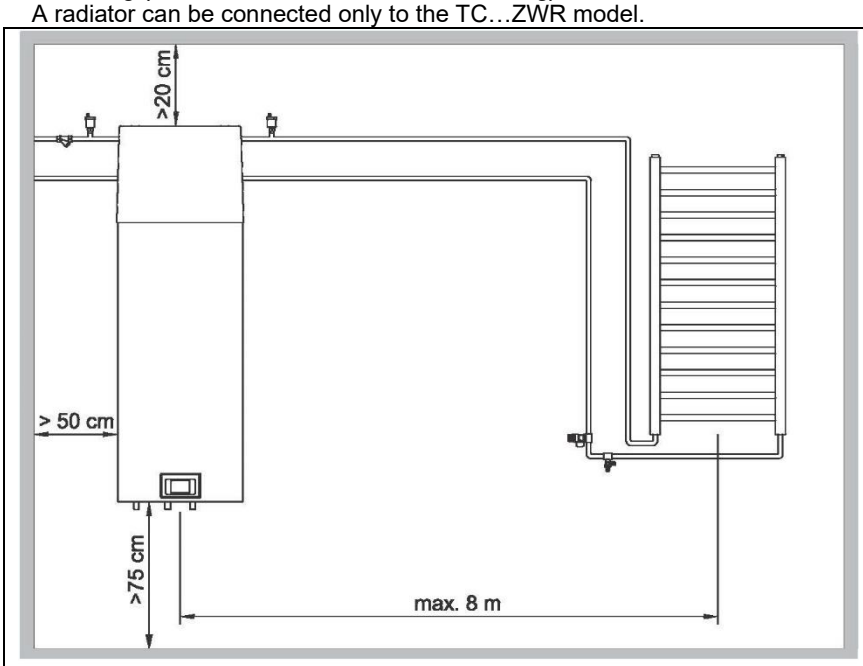


Fig. 4a: Minimum requirements for the installation of HP

FLOOR-STANDING VERSION

Before setting up the appliance, screw in the enclosed adjustable feet. Level the heat pump longitudinally and laterally by rotating the adjustable feet. Consider the minimum permissible distance from the wall and the ceiling.
Make sure to take measures to prevent the transfer of noise and vibrations through walls where this would be disturbing (bedrooms, rooms intended for resting).

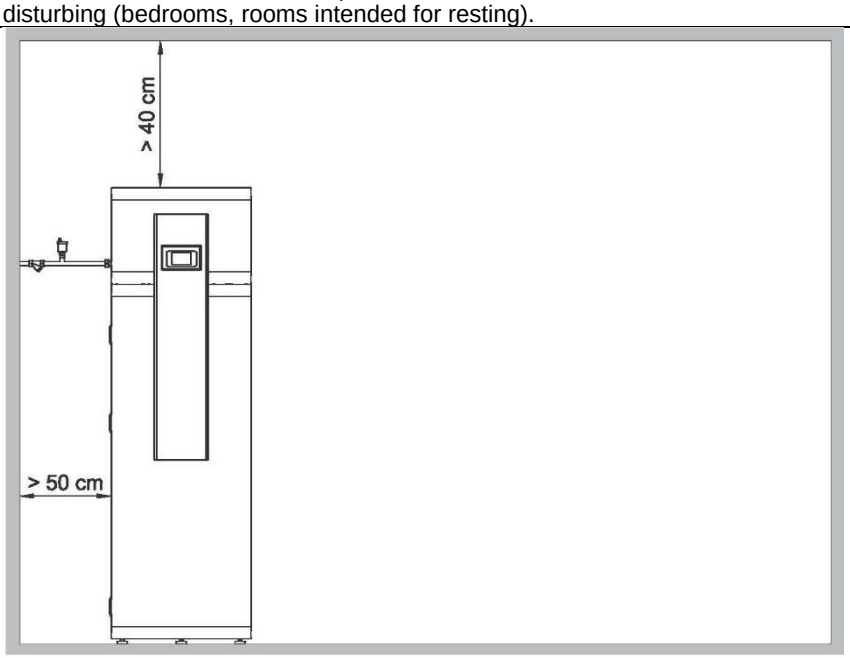


Fig. 4b: Minimum requirements for the installation of HP

CONNECTION TO WATER SUPPLY MAINS

Inlet and outlet of sanitary water are color-coded on the heat pump pipes. The cold sanitary water inlet is marked blue and the hot sanitary water inlet is marked red. You can connect the heat pump to the house water pipeline without a reducing valve if the pressure in the network is lower than the nominal pressure (indicated on the data plate). If the pressure is higher, a relief valve needs to be installed so as to provide that the pressure at the inlet to the hot water tank does not exceed the nominal pressure.
Installing a safety valve is mandatory in order to assure safe operation. The valve prevents an increase of the pressure in the boiler by any more than 0.1 MPa (1 bar) above the rated pressure. The outflow nozzle on the safety valve must have an outlet into the atmosphere. To assure correct operation of the safety valve, the valve must be regularly checked.
When checking the valve, push the lever or unscrew the nut of the valve (depending on the type of the valve) and open the drain from the safety valve. Water must flow from the valve nozzle, showing that the valve operation is faultless.
During the heating of water, the water pressure in the hot water tank is increased up to the level preset in the safety valve. Since the system prevents backflow of water into the water supply mains, water may be dripping from the outlet opening on the safety valve. The dripping water may be drained via trap into the drains; the trap is mounted under the safety valve. The outlet pipe, which is mounted under the safety valve, must be directed downwards, in a place with a temperature above freezing.
If the installation does not allow draining of the water from the safety valve into the drains, dripping can be avoided by installing an expansion vessel onto the heat pump inlet pipe. The volume of the expansion vessel must be ca. 3% of the hot water tank volume. After connecting the heat pump to the water mains, the water tank must be filled with water.

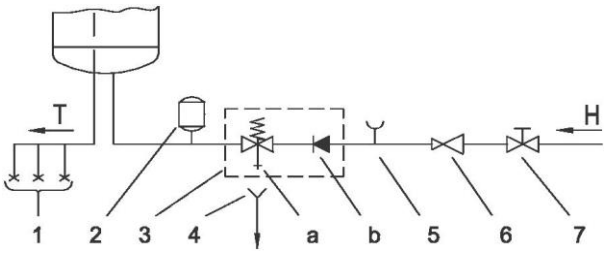


Fig. 5: Closed (pressure) system

LEGEND			
1	Pressure mixer taps	5	Checking fitting
2	Expansion tank	6	Pressure reduction valve
3	Safety valve	7	Closing valve
a	Test valve		
b	Non-return valve	H	Cold water
4	Funnel with outlet connection	T	Hot water

CONNECTION TO THE CENTRAL HEATING SYSTEM

Connection to the heating system is on the back side of the heat pump (wall-mounted version) or on the left side of the heat pump (floor-standing version). The heating source water inlet is marked with IN and the heating source water outlet is marked with OUT. You may only connect the heat pump to the central heating system if the minimum flow rate of heating source water of 120 l/h is provided. The heating source water temperature must be kept in the range between 12 °C and 40 °C, otherwise the heat pump will operate in reserve mode.
To the top point of heating source water connections, the air valve must be installed (Fig. 4a, Fig. 4b). The heating system to which the sanitary heat pump is connected must have a built-in expansion vessel and a safety valve! The system must not contain glycol!

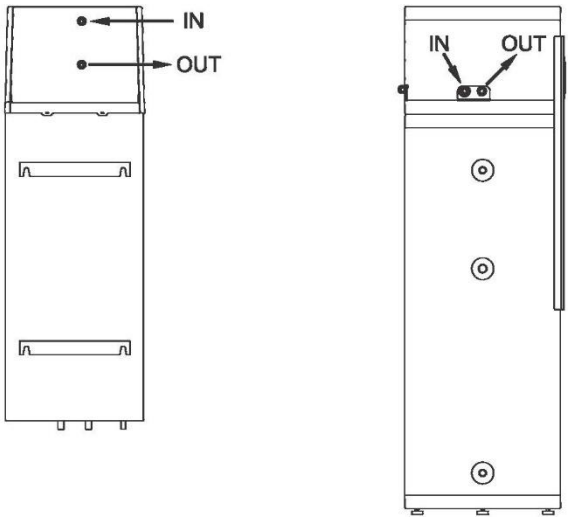


Fig. 6: Connection to the central heating system

Before filling the system, it must be cleaned of all impurities and an impurity filter must be installed

CONNECTING A RADIATOR (applicable for TC…ZWR models)

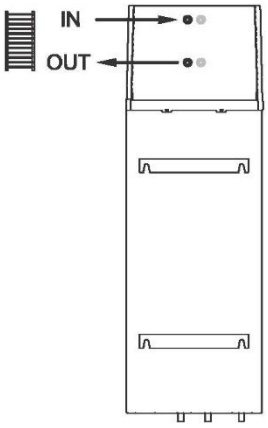


Figure 7: Connecting to a radiator

Inlet and outlet of pipes for connecting to a radiator are on the back side of the heat pump marked with IN and OUT. The return pipe is marked with IN, and the flow pipe with OUT.
The heat pump can be connected to a radiator with a max power of 700W as per EN 442 (inlet temp. 65 °C), which is around 300 W at the operating inlet.
Maximum distance between the radiator and the heat pump is 8 m.
It is obligatory to place a deaerator on the highest point of the connection to the radiator (Fig. 4a). The connection must include an inlet valve and a safety valve (6 bar). The pipe connection must be deaerated and filled to 1.7 bar.

The radiator is not intended for heating a room.

CONNECTING THE HEAT PUMP TO THE POWER SUPPLY NETWORK

Connecting the heat pump to the power supply network must take place in accordance with the standards for electric appliances. To comply with the national installation regulations, an all poles disconnect switch must be installed between the heat pump and the power supply network.

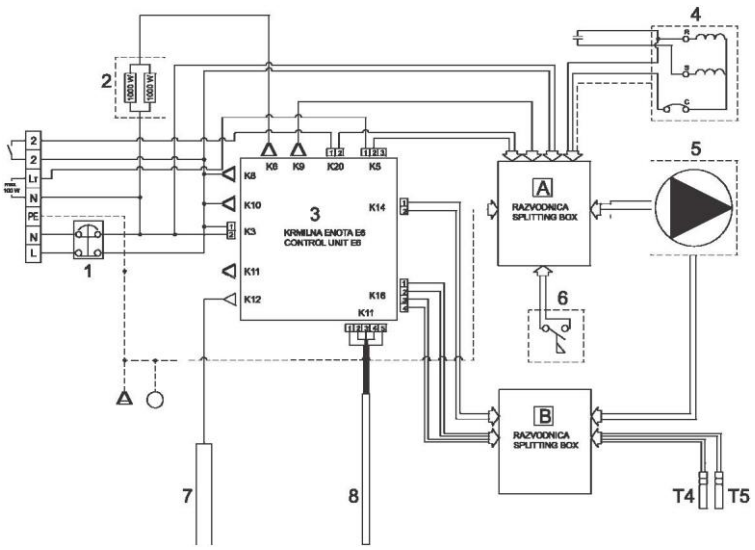


Fig. 8: Electrical circuit diagram

LEGEND	
1	Thermal cut-out
2	Electric heating element (2 x 1000 W)
3	Control unit
4	Compressor
5	Circulation pump (in TC...ZWR models)
6	Flow switch
7	Magnesium anode
8	Assembly of sensors
T4	Inlet heating source water temperature sensor
T5	Outlet heating source water temperature sensor

WALL-MOUNTED VERSION

Before connecting to the power supply network, install a power supply cord in the heat pump, with a min. diameter of 1.5 mm^2 (H05VV-F 3G 1,5mm^2) (applies to models without a connecting cable). To do this, remove the protective cover from the heat pump. The cover is attached using two screws (Fig. 9).

Connection must be carried out by a trained professional.

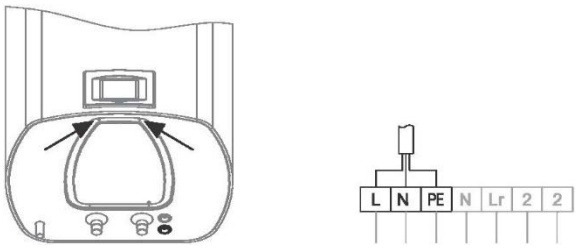


Figure 9a: Installing a power cord

FLOOR-STANDING VERSION

Before connecting to the power supply network, install a power supply cord with a min. diameter of at least 1.5 mm^2 (H05VV-F 3G 1.5 mm^2) (applies to models without a connecting cable).

Connection must be carried out by a trained professional.

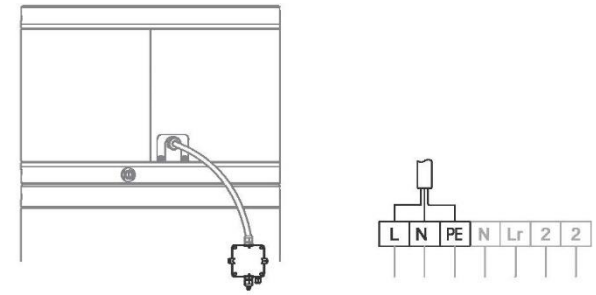


Figure 9b: Installing a power cord

CONNECTING AN EXTERNAL CIRCULATION PUMP, ELECTROMAGNETIC VALVE ETC.

The control unit automatically reports the requirement for flow rate in a branch of a heating circuit. The external element for enabling flow rate is connected to a clamp (Fig. 10).

Maximum allowed power of elements for direct connection is 100 W (230 V). If the power of the element is higher, connection must be made through a relay.
Connection should only be carried out by a trained person. Before connecting the element, it is obligatory to disconnect the appliance from power supply!

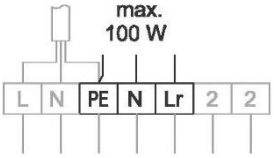


Figure 10: Connecting an external element

HEAT PUMP OPERATION

The heat pump can be operated using an LCD touch screen (Figure 11). Features and displays depend on the models.

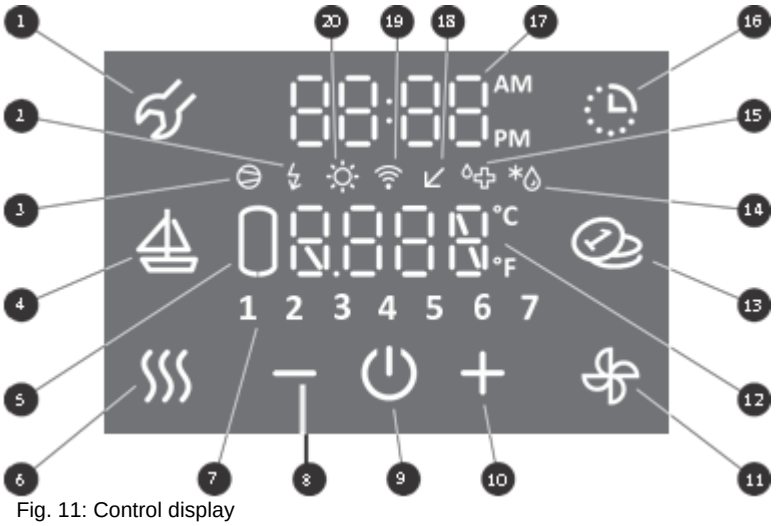
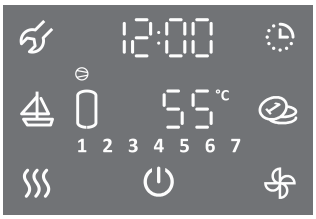


Fig. 11: Control display

LEGEND	
1	Indication, overview of errors, access to the user menu
2	Signalisation of the operation of the heater, Signalisation of the reserve mode
3	Signalisation of the operation of the compressor
4	Activation and setting of the "VACATION" programme
5	Display of quantity of hot water
6	Activation of accelerated heating "TURBO", activation of the "HOT" feature
7	Display of day of the week (1.. Monday, …, 7.. Sunday)
8	Reducing the value
9	Heat pump ON/OFF switch
10	Increasing the value
11	Manual activation of the “radiator heating” feature, activation of the “automatic radiator heating” feature, activation of the “radiator heating in timer mode” feature
12	Display and setting of temperature (°C/°F)
13	On/off "SMART" feature *
14	Signalisation of defrosting *
15	Signalisation of the operation of the anti-legionella programme
16	Activation and setting of the timer
17	Display and setting of time
18	Indicator of operation in the Low tariff (LT) mode
19	Indicator of device’s connection to the WiFi network *
20	Signalisation of the operation of the PV feature
	* depending on the model

STARTING/STOPPING THE HEAT PUMP



Main Display

- To start the heat pump, press the ⏻ symbol.
- By holding (3 s) the ⏻ symbol the heat pump is switched off.

After the heat pump is switched on, the heat pump compressor always operates for at least 5 minutes (minimum operating time of compressor).

After the heat pump is switched off, the heat pump compressor does not operate for at least 20 minutes (minimum compressor standby time). If a request is made for the compressor to switch on during this time, the compressor remains still and the symbol ⛀ flashes on the display.

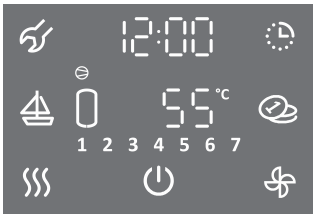
After the standby time has elapsed, the compressor switches on automatically. The ⛀ symbol lights up on the display.

Saving mode

- After 1 minute of inactivity (no pressing on the display) the display always reverts to saving mode. The saving mode shows the current water temperature and, depending on the model, the symbols of features currently in progress (see Figure 11).
- Pressing anywhere on the saving mode display shows the main display.

Setup of features of the heat pump is only possible on the main display!

USER MENU



Some parameters and features are set up in the user menu.

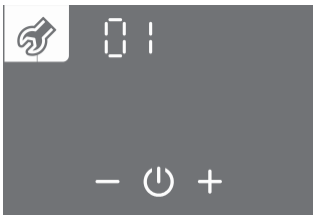
- You can enter the user menu by holding (for 3 s) the field no. 1 (for setting the parameters and features see next chapters).

List of parameters and features in the user menu

Group of parameters	Parameter	Description
01	01	Anti legionella programme
	02	Automatic ventilation feature *
	03	Setting the speed of the fan *
	04	Setting the hysteresis of start-up
	05	Setting the display of temperature in °C or °F
	06	Setting up the time display 12/24
	07	Setting display illumination
	08	Manual switch to reserve mode of operation (heating with the electric heater)
	09	Electric heater (yes/no)
	10	Setting the radiator heating time *
	11	Setting the speed of the circulation pump for radiator heating *
02	01	PV feature (operation using photovoltaics)
	02	LT feature (operation with regard to the electric energy tariff)
	03	ECF feature (external control of fan) *
	04	ECHP feature (external control of heat pump)
	05	ECH feature (external control of radiator heating) *

* depending on the model

SETTING UP DISPLAY ILLUMINATION

	• To enter the user menu hold (3 s) field no. **1**. • By pressing field no. **1** again, you can move by one step back on each step, thus exiting the user menu.
	• Parameter group starts to flash. • By pressing field + or – select the number of the group of parameters 01. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter number starts to flash. The current parameter value is displayed. • By pressing field + or – select the number of the parameter 07. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter value starts to flash. • By pressing field + or – choose between the three levels of display illumination. • Store the setting by pressing the ⏻ symbol. • You can exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.

RESERVE MODE OF OPERATION OF THE HEAT PUMP

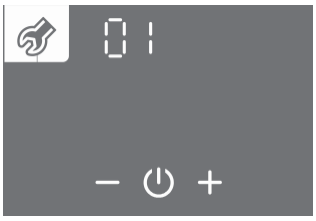
When the appliance is switched on, system check starts first. If the temperature and flow rate of the incoming water are inappropriate, the electric heater turns on. The heat pump works in the reserve mode (the word SAFE and the symbol are shown on the display).
The possibility of switching to the normal mode of operation is checked cyclically. Once the conditions are met, the electric heater turns off and the heat pump switches to the normal mode of operation.

Display and setting of time in the reserve mode of operation.

	• If you press on the field with the word SAFE (on the main display) the clock is displayed. • If you if you hold (for 3 seconds) the field with the word SAFE (on the main display) the clock can be set.

You can enable or disable the heater in the user menu.

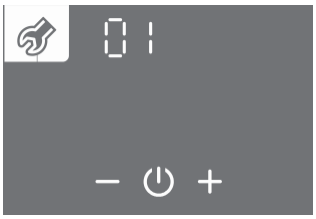
⚠	Before changing the parameter, the features "TURBO" and "HOT" must be deactivated (see chapters "TURBO" FEATURE and "HOT" FEATURE).
⚠	In case the heater is disabled (parameter 01:09) minimum temperature is maintained only by the heat pump operation. In case the source temperature is outside the range of operation of the heat pump, freeze protection will not work!
⚠	If the electric heater is disabled and the source temperature is outside the range of operation of the heat pump, water in the water tank will not be heated.

	• To enter the user menu hold (3 s) field no. **1**. • By pressing field no. **1** again, you can move by one step back on each step, thus exiting the user menu.
	• Parameter group starts to flash. • By pressing + or – select parameter group number 01. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter number starts to flash. • By pressing + or – select parameter number 09. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter value starts to flash. • By pressing + or – select if the heater is connected (YES - NO). • Store the setting by pressing the ⏻ symbol. • You can exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.

SETTING THE HOUR AND DAY OF THE WEEK

	• Hold (for 3 s) field no. 17.
	• The hour segment starts to flash. • By pressing + or – set the hour. • Confirm the setting by pressing the ⏻ symbol. • The minutes segment starts to flash. • By pressing + or – set the minutes. • Confirm the setting by pressing the ⏻ symbol. • The day of the week starts to flash (field no. 7). • By pressing + or – set the day of the week (1… Monday, …, 7… Sunday). • Confirm the setting by pressing the ⏻ symbol.
	• The illuminated number in field no. 7 shows the number of the day of the week (1. Monday, …, 7. Sunday). • The change of time display 12/24 can be set in the user menu.

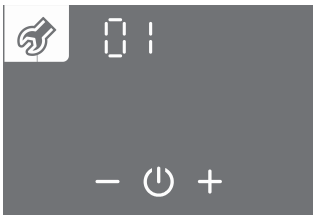
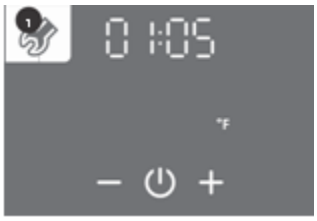
SETTING TIME DISPLAY 12/24

	• To enter the user menu, hold (for 3 s) field no. 1. • By pressing field no.1 you can move one step back, thus exiting the user menu
	• The parameter group starts to flash. • By pressing + or – select the number of the parameter group 01. • Confirm the setting by pressing the ⏻ symbol.
	• The parameter number starts to flash. At the same time the current value of the parameter is shown. • By pressing + or – select the number of the parameter 06. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter value starts to flash. • By pressing + or – select between 12 or 24-hour time display. • Store the setting by pressing the ⏻ symbol. • Exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.

SETTING THE TEMPERATURE

	• Press field no. 12.
	• Field 12 starts to flash. • By pressing + or – set the desired temperature. Factory setting of the temperature is 55 °C. • Store the setting by pressing the ⏻ symbol. **The set temperature should meet the actual needs. Recommended temperature settings are between 45 and 55 °C. Higher temperatures are not recommended as they reduce the efficiency (COP) and extend the time of heating, thereby increasing the number of operating hours.**

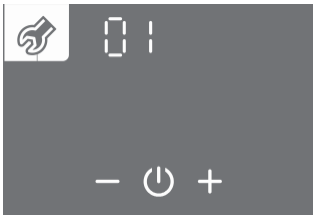
SETTING THE DISPLAY OF TEMPERATURE IN °C OR °F

	• To enter the user menu, hold (for 3 s) field no. 1. • By pressing field no.1 you can move one step back, thus exiting the user menu
	• The parameter group starts to flash. • By pressing + or – select the number of the parameter group 01. • Confirm the setting by pressing the ⏻ symbol.
	• The parameter number starts to flash. At the same time the current value of the parameter is shown. • By pressing + or – select the number of the parameter 05. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter value starts to flash. • By pressing + or – select the display of temperature either in °C or °F. • Store the setting by pressing the ⏻ symbol. • Exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.

SETTING THE HYSTERESIS OF START-UP

As a default setting, the hysteresis of start-up automatically adjusts to the set temperature and is adjusted so that the device functions as efficiently as possible. The start-up hysteresis can be set in the user menu.

By modifying the hysteresis of start-up, you will modify the settings that may impair the energy efficiency of heating of water, change the frequency of start-ups and time of heating!

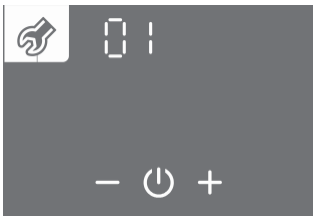
	• To enter the user menu, hold (for 3 s) field no. 1. • By pressing field no.1 you can move one step back, thus exiting the user menu
	• The parameter group starts to flash. • By pressing + or – select the number of the parameter group 01. • Confirm the setting by pressing the ⏻ symbol.
	• The parameter number starts to flash. At the same time the current value of the parameter is shown. • By pressing + or – select the number of the parameter 04. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter value starts to flash. • By pressing + or – select the automatic adjustment of hysteresis (auto) or hysteresis range between 5 and 10 °C (40 to 50 °F). • Store the setting by pressing the ⏻ symbol. • Exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.

ANTI-LEGIONELLA PROGRAMME

If the water in the tank does not reach 65 °C for 14 consecutive days, the anti-legionella programme switches on and heats the water to 70 °C (if the electric heater is activated, parameter 01:09) or up to 65 °C (if the electric heater is deactivated, parameter 01:09) and maintains it for 60 minutes.

	• During the operation of the anti-legionella programme the symbol is displayed. After heating in the anti-legionella programme, the temperature of the water in the hot water storage tank is 65 °C or more, regardless of the temperature set on the device.

The frequency of the start of anti-legionella programme (1 to 999 days) or shutdown of the anti-legionella programme can be set in the user menu.

	• To enter the user menu, hold (for 3 s) field no. 1. • By pressing field no.1 you can move one step back, thus exiting the user menu
	• The parameter group starts to flash. • By pressing + or – select the number of the parameter group 01. • Confirm the setting by pressing the ⏻ symbol.
	• The parameter number starts to flash. At the same time the current value of the parameter is shown. • By pressing + or – select the number of the parameter 01. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter value starts to flash. • By pressing + or – you can set the frequency (number of days) of start-up of the anti-legionella programme or turn off the anti-legionella programme (OFF). • Store the setting by pressing the ⏻ symbol. • Exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.

DISPLAY OF QUANTITY OF HOT WATER IN THE STORAGE TANK

	Field no. **5** shows the symbol: no hot water small quantity of hot water large quantity of hot water

"TURBO" FEATURE

The "TURBO" feature can be turned on if you need more hot water than the heat pump can heat in a very short amount of time. In the TURBO mode, the heat pump and electric heater work together. If the symbol ⧙ in field no. **6** is not visible, the "TURBO" feature is not available.

	• Hold (for 3 s) field no. **6**.
	• Field no. 12 starts to flash. • By pressing + or – set the temperature of the "TURBO" feature. • Store the setting by pressing the ⏻ symbol.

	• While the feature is on, field no. **6** is illuminated. • When the set temperature is achieved, the device resumes the operation before the activation of the "TURBO" feature. • The "TURBO" feature can be switched off manually by pressing field no. **6** briefly (main display). **In case the heater is disabled (parameter 01:09) the "TURBO" feature is not enabled.**

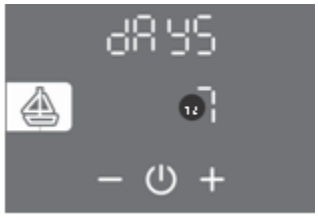
"HOT" FEATURE

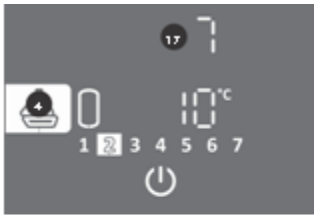
The "HOT" feature can be used if you want to heat the water to a temperature higher than the currently set temperature. If the symbol ≋ in field no. **6** is not visible, the "HOT" feature is not available.

	• Briefly press field no. **6**.
	• Field no. 12 starts to flash. • By pressing + or – set the temperature of the "HOT" feature. • Store the setting by pressing the ⏻ symbol.
	• While the feature is on, field no. **6** is illuminated. • When the set temperature is achieved, the device resumes the operation before the activation of the "HOT" feature. • The "HOT" feature can be switched off manually by pressing field no. 6 briefly (main display).

"VACATION" MODE

In the “VACATION” mode you can set the number of days when the heat pump should maintain the minimum temperature of water approx. 10 °C).

	• Press field no. **4.**
	• Field no. **12** starts to flash. • By pressing + or – set the number of days of your vacation. • Store the setting by pressing the ⏻ symbol.



- While the feature is on, field no. **4** is illuminated.
- Field no. 17 shows the number of days remaining until the end of the VACATION mode. If the display is in the saving mode, touch the display to see the number of remaining days.
- After the set number of days has elapsed, the heat pump resumes the previously set mode of operation, and illumination of field no. **4** stops.
- The "VACATION" feature can be switched off manually by pressing field no. 4 briefly (main display).

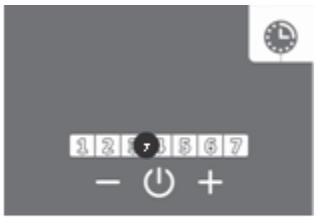
In case the heater is disabled (parameter 01:09) minimum temperature is maintained only by the heat pump operation. In case the source temperature is outside the range of operation of the heat pump, freeze protection will not work!

TIMER FEATURE

In the TIMER feature you can set the timer points for operation of heat pump at various temperatures. The feature enables four time points daily for different settings of the water temperature or heat pump shutdown. The next timer point cannot be set one hour after the previous setting. The time setting step is 10 min. If the symbol in field no. **16** is not visible, the TIMER feature is not available. When setting the timer, you must know the habits and consider the duration of heating times. Senseless settings to which the system cannot respond will not achieve the set temperature points and will have a negative impact on the heat pump's efficiency.

1. Hold (for 3 s) field no. **16**.

SELECTING THE TIMER MODE OF OPERATION

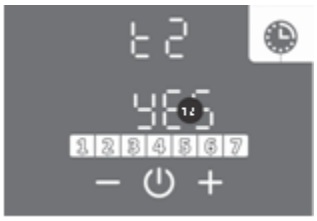


2. Field no. 7 starts to flash.

3. By pressing + or – select from among three timer options:
   - timer mode for the entire week (in field no. 7 the numbers from 1 to 7 flash),
   - timer mode of operation for the period between Monday and Friday and from Saturday to Sunday (in field no. 7 the numbers 1 to 5 flash),
   - timer mode of operation for each individual day (in field no. 7 number 1 flashes).

4. Confirm the setting by pressing the symbol.

TIMER MODE FOR THE ENTIRE WEEK

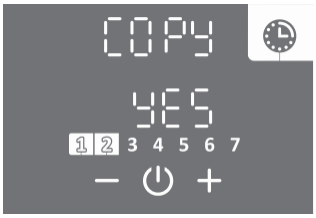
	5. Field 17 starts to flash. 6. By pressing + or – set the time of the first time point t1. 7. Confirm the setting by pressing the ⏻ symbol.
	8. Field 12 starts to flash. 9. By pressing + or – set the temperature of the first time point t1. If you set the temperature below 10 °C, field no. 12 displays the word OFF, and the device does not heat water (freeze protection still works). 10. Confirm the setting by pressing the ⏻ symbol.
	11. Field 12 starts to flash. 12. By pressing + or – select whether you want to complete the setting or set the next time point t2 (t3, t4) (YES - NO). If you select NO the setting of the selected segment will be finished. If you select YES, set the other time points as per the above procedure (from step 5 to 13) – max. 4. 13. Confirm the setting by pressing the ⏻ symbol.

TIMER MODE OF OPERATION FOR THE PERIOD BETWEEN MONDAY AND FRIDAY AND FROM SATURDAY TO SUNDAY

To set the time points for the period from Monday to Friday, use steps from 5 to 13.

	14. To set the next time interval (Saturday, Sunday) repeat the steps 5 to 13.

TIMER MODE OF OPERATION FOR EACH INDIVIDUAL DAY
To set the time points for each individual day, use steps from 5 to 13.

	15. By pressing + or – select whether you want to copy the settings from the previous day (YES - NO). If you select "no" set the time points as per instructions (from step 5 to 13). If you select "YES" step no. 14 will repeat. 16. Confirm the setting by pressing the ⏻ symbol.
	• During the operation of the feature, field no. 16 is illuminated. • Timer mode of operation can be switched off by pressing field no. 16 (main display). The settings remain stored. If you press no. 16 you can switch it back on. • If you want to change the settings of the feature, hold (for 3 s) field no. 16 and set it again as per the above procedure.

Example:

- time point t1: time 06:00, set temperature 40 °C
- time point t2: time 09:00, heating OFF (10 °C)
- time point t3: time 18:00, set temperature 40 °C
- time point t4: time 21:00, set temperature 55°C.

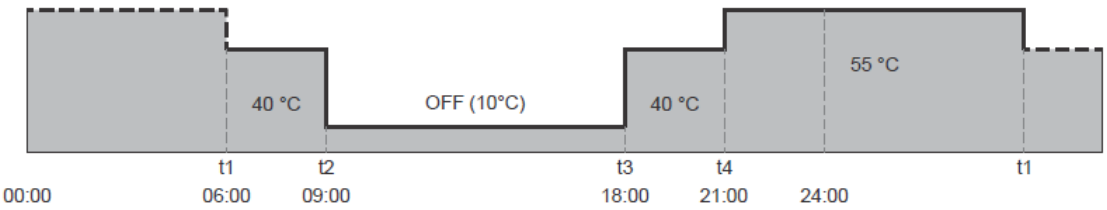


Fig. 12: Example of setting the timer

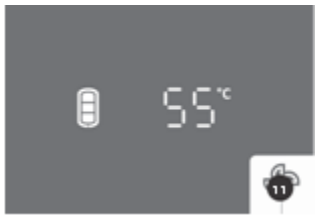
"RADIATOR HEATING" FEATURE (APPLIES TO TC...ZWR MODELS)

The feature controls the heating of a radiator connected to the heat pump. You can choose between manual activation, automatic operation, timer operation or external control of the “radiator heating” feature. If the symbol in field 11 is not visible, the “RADIATOR HEATING” feature is not available.

a) MANUAL ACTIVATION OF THE “RADIATOR HEATING” FEATURE

In this feature you can set the time of radiator heating.

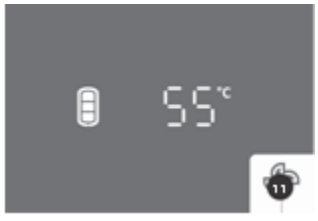
The set features of heating domestic water always have priority before the “radiator heating” feature. If domestic water is being heated at the moment of activation of the feature, radiator heating will start once the domestic water heating switches off.

	• Briefly press field no. **11**.
	• Field no. 12 starts to flash. • By pressing + or – set the time of operation of the “radiator heating” feature. Up to 30 minutes you can set the time in 5 min increments and above 30 minutes you can set the time in 10-minute increments. After maximum time setting, the word ON appears on the display, indicating constant heating of the radiator until manual switch off. • Confirm the setting by pressing the ⏻ symbol.
	• During the operation of the feature, field **11** flashes. • The feature can be deactivated by shortly pressing field **11** (main display).

b) AUTOMATIC FUNCTIONING OF THE “RADIATOR HEATING” FEATURE

The feature automatically activates radiator heating after a major consumption of hot water from the water tank (e.g. after someone has taken a shower) for 3 hours (factory default, parameter 01:10).

The set features of heating domestic water always have priority before the “radiator heating” feature.

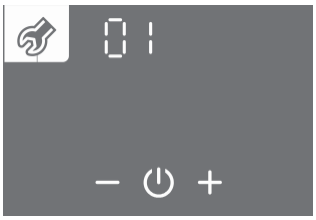
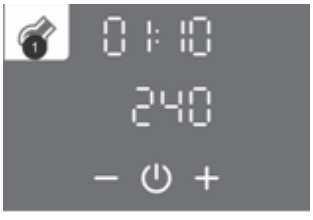
	• Hold (for 3 s) field no. **11**.
	• Field no. 12 starts to flash. • By pressing field **+** or **–** set to "Auto".. • Confirm the setting by pressing the ⏻ symbol.
	• During the operation of the feature, field **11** is illuminated.

SWITCHING OFF THE AUTOMATIC MODE OF OPERATION OF THE "RADIATOR HEATING" FEATURE

	• Briefly press field no. **11**.
	• Field no. 12 starts to flash. • By pressing field **+** or **–** set to "OFF". • Confirm the setting by pressing the ⏻ symbol.

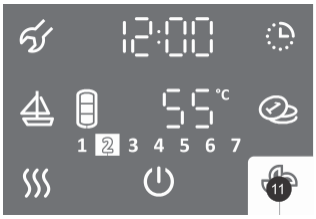
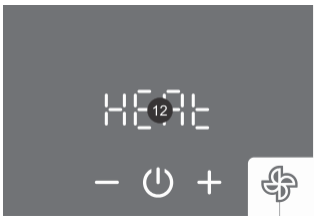
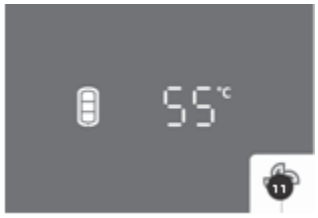
SETTING THE TIME OF AUTOMATIC RADIATOR HEATING

If the factory preset time (3 hours) of radiator heating in the automatic mode of operation does not fit your requirements (e.g. if the towels drying on the radiator are still wet) you can change the time in the user menu.

	• To enter the user menu, hold (for 3 s) field no. 1. • By pressing field no.1 you can move one step back, thus exiting the user menu
	• The parameter group starts to flash. • By pressing + or – select the number of the parameter group 01. • Confirm the setting by pressing the ⏻ symbol.
	• The parameter number starts to flash. At the same time the current value of the parameter is shown. • By pressing + or – select the number of the parameter 10. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter value starts to flash. • By pressing field **+** or **–** set the time of radiator heating (min. 30 min, max. 240 min). • Store the setting by pressing the ⏻ symbol. • Exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.

MANUAL ACTIVATION OF RADIATOR HEATING DURING AUTOMATIC MODE OF OPERATION OF THE "RADIATOR HEATING" FEATURE
If you want additional heating because during the automatic mode of operation the radiator heating has not been switched on yet, you can manually activate radiator heating.

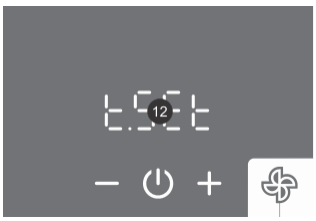
The set features of heating domestic water always have priority before the "radiator heating" feature.

	• Briefly press field no. **11**.
	• Field no. 12 starts to flash. • By pressing field **+** or **–** set to "HEAT". • Confirm the setting by pressing the ⏻ symbol.
	• Field no. 12 starts to flash. • By pressing field + or – set the time of operation of the "radiator heating" feature. Up to 30 minutes you can set the time in 5 min increments and above 30 minutes you can set the time in 10-minute increments. After maximum time setting, the word ON appears on the display, indicating constant heating of the radiator until manual switch off. • Confirm the setting by pressing the ⏻ symbol.
	• During the operation of manual activation of the feature, field **11** flashes. • After the manual mode of operation is finished or after manual deactivation (shortly press field **11**) the feature reverts to the previous mode of operation (field **11** is lit).

c) "TIMER – RADIATOR HEATING" FEATURE

In this feature you can set the time points for radiator heating. For each point you can set the time of activation/deactivation of heating. The feature allows four points per day. The next time point cannot be set less than one hour after the previous one. Time setting increment is 10 min. If the symbol is not visible in field **11**, the "TIMER – RADIATOR HEATING" feature is not available.

The set features of heating domestic water always have priority before the "radiator heating" feature.

	1. Hold (for 3 s) field no. **11**.
	2. Field no. 12 starts to flash. 3. By pressing + or – you can select between: - setting the timer (t.Set) - activating the timer after the settings have been stored (t.ON). 4. Confirm the setting by pressing the ⏻ symbol.

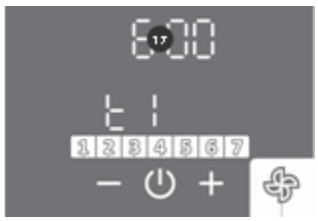
SELECTING TIMER MODE OF OPERATION

5. Field no. 7 starts to flash.

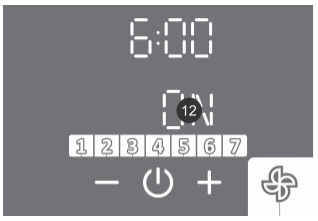
6. By pressing + or – select between three options of timer modes of operation:
   - timer mode of operation for the whole week (in field no. 7 the numbers 1 to 7 flash),
   - timer mode of operation for the period between Monday and Friday and from Saturday to Sunday (in field no. 7 the numbers 1 to 5 flash),
   - timer mode of operation for each individual day of the week (in field no. 7 number 1 flashes).

7. Confirm the setting by pressing the ⏻ symbol.

TIMER MODE OF OPERATION FOR THE ENTIRE WEEK



8. Field no. **17** starts to flash.
9. By pressing + or – set the first time point **t1**.
10. Confirm the setting by pressing the ⏻ symbol.



11. Field no. **12** starts to flash.
12. By pressing field + or – set the activation (ON) or deactivation (OFF) of radiator heating at the first time point.
13. Confirm the setting by pressing the ⏻ symbol.

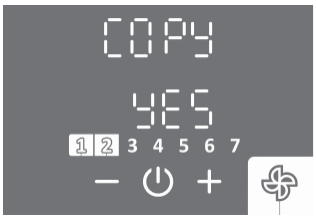
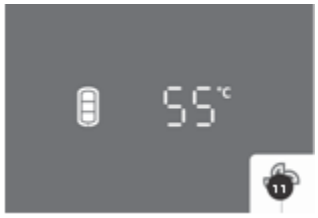
14. Field no. **12** starts to flash.
15. By pressing + or – select whether you want to complete the setting or set the next time point t2 (t3, t4) (YES - NO). If you select "no" the setting of the selected segment will be completed. If you select "YES" set the following time points (max 4) as per the above procedure (steps 8 to 16).
16. Confirm the setting by pressing the ⏻ symbol.

TIMER MODE OF OPERATION FOR THE PERIOD BETWEEN MONDAY AND FRIDAY AND FROM SATURDAY TO SUNDAY

To set the time points for the period Monday – Friday, use steps 8 to 16.

17. To set the next time period (Saturday, Sunday) repeat steps 8 to 16.

TIMER MODE OF OPERATION FOR EACH INDIVIDUAL DAY
To set the time points for each individual day use steps 8 to 16.

	18. By pressing + or – you can select whether you want to copy the settings from the previous day (YES - NO). If you select "no" set the time points as per above procedure steps 8 to 16). If you select "YES" step no. 17 will be repeated. 19. Confirm the setting by pressing the ⏻ symbol..
	• During the operation of the feature, field no. **11** is illuminated

Example:

- time point t1: time 06:00, activation of radiator heating,
- time point t2: time 09:00, deactivation of radiator heating,
- time point t3: time 18:00, activation of radiator heating,
- time point t4: time 21:00, deactivation of radiator heating.

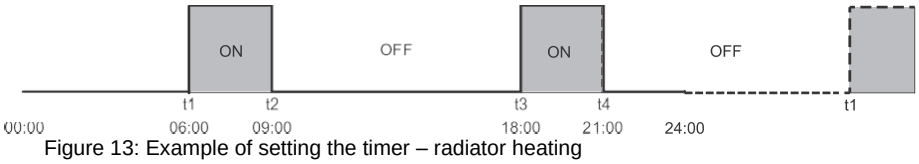
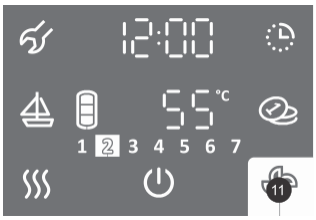
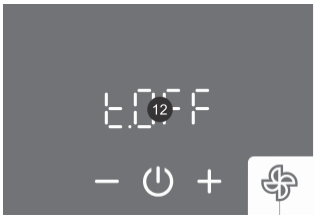


Figure 13: Example of setting the timer – radiator heating

DEACTIVATION OF THE "TIMER- RADIATOR HEATING" FEATURE

	• Briefly press field no. **11.**
	• Field 12 starts to flash. • By pressing field + or – set to "t.OFF". • Confirm the setting by pressing the ⏻ symbol.

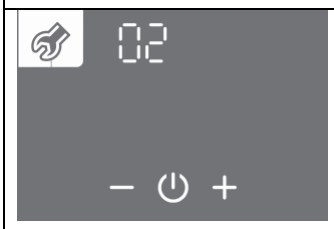
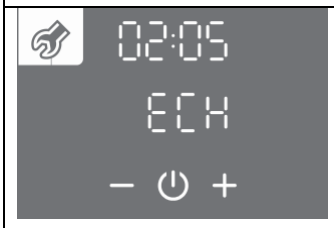
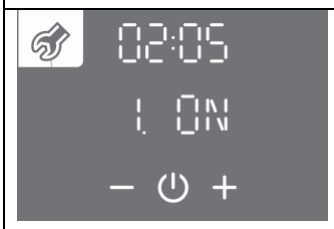
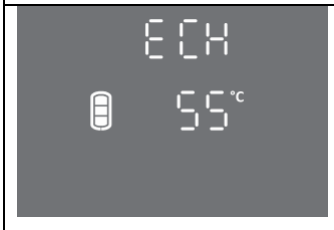
MANUAL ACTIVATION OF RADIATOR HEATING DURING THE OPERATION OF THE "TIMER - RADIATOR HEATING" FEATURE
During the operation of the "timer – radiator heating" feature you can manually activate the heating of the radiator (see chapter Manual activation of radiator heating during the automatic operation of the "radiator heating" feature).

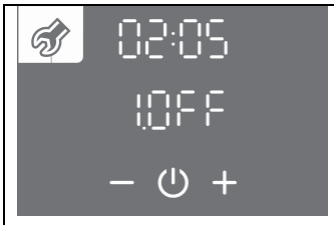
d) EXTERNAL CONTROL OF THE “RADIATOR HEATING” FEATURE (ECH FEATURE)

In this case the “RADIATOR HEATING” feature is controlled by external signal (e.g. room thermostat, manual activation/deactivation with an external switch etc.).

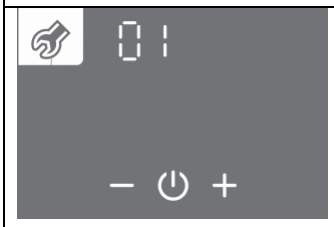
The set features of heating domestic water always have priority before the “radiator heating” feature.

1. Connect external control via contact (2 - 2).
   Connection is described in chapter "CONNECTION OF EXTERNAL CONTROL OF THE "PV", "LT", "ECH" AND "ECHP" FEATURES".
2. The "ECH" feature is enabled in the user menu.

	• To enter the user menu hold (3 s) field no. **1**. • By pressing field no. **1** again, you can move by one step back on each step, thus exiting the user menu.
	• Parameter group starts to flash. • By pressing + or – select parameter number 02. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter number starts to flash. • By pressing + or – select parameter number 05 (ECH). • Confirm the setting by pressing the ⏻ symbol.
	• By pressing field + or – activate or deactivate the “ECH” feature (ON - activation, OFF - deactivation). • Confirm the setting by pressing the ⏻ symbol. • If you set the "ECH" feature to OFF (deactivation), the setting is completed after confirming the settings. • Exit the user menu by pressing field no. **1** (moves you one step back) or wait for the unit to exit the menu automatically after a while.
	• By pressing field + or – select contact 2. • Confirm the setting by pressing the ⏻ symbol. • Exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.
	• When the feature is enabled and contact 2 – 2 is made (external signal for activation) the abbreviation ECH is displayed. • When the feature is enabled and contact 2 - 2 is not made (external signal for deactivation) the abbreviation ECH flashes. • If you press on the field with the abbreviation ECH (on the main screen) the clock is displayed. • Hold (for 3 s) the field with the abbreviation ECH (on the main screen) to enter the clock settings.

	• **Deactivation of the feature**: The feature can be deactivated by re-entering the user menu, where you set the feature to the OFF value.

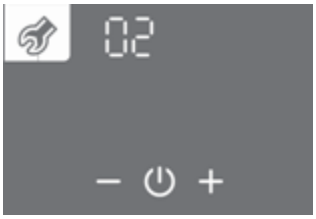
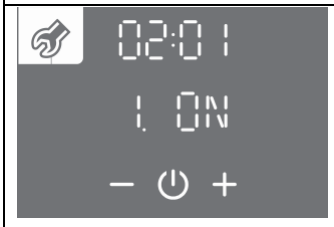
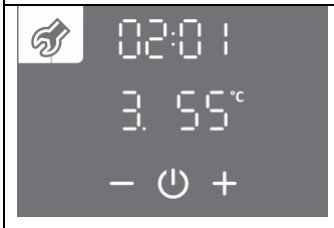
SETTING THE SPEED OF THE CIRCULATION PUMP
If there is a significant distance between the heat pump and the radiator, you can increase the speed of the circulation pump.

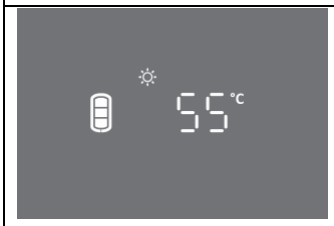
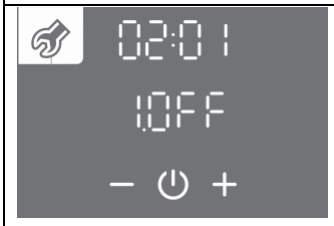
	• To enter the user menu hold (for 3 s) field no. 1. • By pressing field no. 1 again, you can move one step back, thus exiting the user menu.
	• The parameter group starts to flash. • By pressing + or – select the number of the parameter group 01. • Confirm the setting by pressing the ⏻ symbol.
	• The parameter number starts to flash. • By pressing + or – select the number of the parameter 11. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter value starts to flash. • By pressing field + or – set the speed of the circulation pump (min. 30%, max. 100%). • Store the setting by pressing the ⏻ symbol. • Exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.

PHOTOVOLTAICS MODE ("PV" FEATURE)

In the photovoltaics mode, you use the electric energy from your photovoltaic system. The system must allow at least 800 W of power.
If you don't want your heat pump to ever switch to the reserve mode of operation, disable the heater in the user menu (see chapter "RESERVE MODE OF OPERATION OF THE HEAT PUMP").

1. Connect external control via contact (2 - 2).Connection is described in chapter "CONNECTION OF EXTERNAL CONTROL OF THE "PV", "LT", "ECH" AND "ECHP" FEATURES".
2. The "PV" feature is enabled in the user menu.

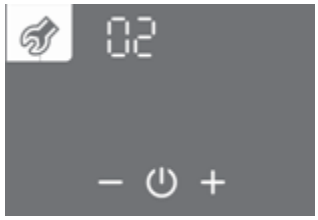
	• To enter the user menu hold (3 s) field no. 1. • By pressing field no. 1 again, you can move by one step back on each step, thus exiting the user menu.
	• Parameter group starts to flash. • By pressing + or – select parameter group number 02. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter number starts to flash. • By pressing + or – select parameter number 01 (PV). • Confirm the setting by pressing the ⏻ symbol.
	• By pressing + or – activate or deactivate the "ECPV" feature (ON - activation, OFF - deactivation). • Confirm the setting by pressing the ⏻ symbol. • If you set the "ECPV" feature to OFF (deactivation), the setting is completed after confirmation. You can exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.
	• By pressing field + or – select contact 2. • Confirm the setting by pressing the ⏻ symbol.
	• By pressing + or – set the temperature that the heat pump must maintain when electric energy from the photovoltaic system is available (contact 2 - 2 is connected). The factory setting is 55 °C. • Confirm the setting by pressing the ⏻ symbol.

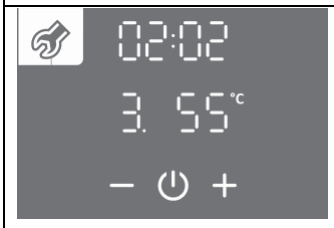
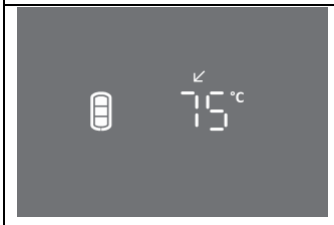
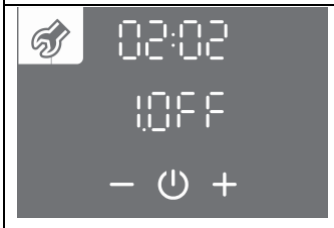
	• By pressing + or – set the temperature that the heat pump must maintain when electric energy from the photovoltaic system is not available (contact 2 - 2 is disconnected). You can set a temperature that is at least 5 °C lower than the temperature set in the previous step. The factory setting is 40 °C. • Confirm the setting by pressing the ⏻ symbol. • You can exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.
	• When the feature is enabled and contact 2 - 2 is made (when electric energy from the photovoltaic system is available) the symbol ☼ is on. • • When the feature is enabled and contact 2 - 2 is disconnected (when electric energy from the photovoltaic system is not available) the symbol ☼ flashes.
	• **Deactivation of the feature**: The feature can be deactivated by re-entering the user menu, where you set the feature to the OFF value.

OPERATION WITH REGARD TO THE ELECTRIC ENERGY TARIFF ("LT" FEATURE)

The purpose of this feature is to lower the cost of heating of domestic water even further. In the period of lower tariff, set a higher
temperature of water (factory setting is 55 °C), while in the period of higher tariff, the water temperature is set lower (factory setting is 40 °C).

1. Connect external control via contact (2 - 2).
   Connection is described in chapter "CONNECTION OF EXTERNAL CONTROL OF THE "PV", "LT", "ECH" AND "ECHP" FEATURES".
2. The "LT" feature is enabled in the user menu.

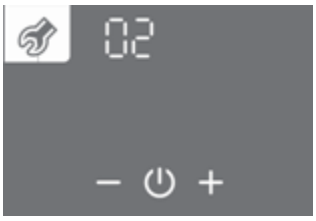
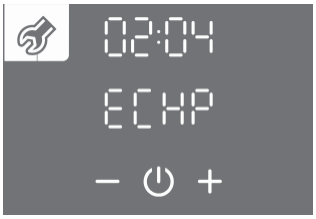
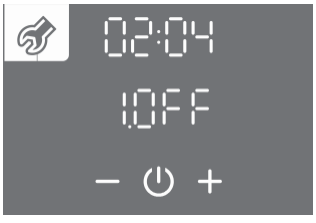
	• To enter the user menu hold (3 s) field no. 1. • By pressing field no. 1 again, you can move by one step back on each step, thus exiting the user menu.
	• Parameter group starts to flash. • By pressing + or – select parameter group number 02. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter number starts to flash. • By pressing + or – select parameter number 02 (Lt). • Confirm the setting by pressing the ⏻ symbol.

	• By pressing + or – activate or deactivate the "LT" feature (ON - activation, OFF - deactivation). • Confirm the setting by pressing the ⏻ symbol. • If the "LT" feature is set to OFF (deactivation), the setting is completed after confirmation. You can exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.
	• By pressing field + or – select contact 2. • Confirm the setting by pressing the ⏻ symbol.
	• By pressing + or – set the temperature that the heat pump must maintain when the tariff is low (contact 2 - 2 is connected). The factory setting is 55 °C. • Confirm the setting by pressing the ⏻ symbol.
	• By pressing + or – set the temperature that the heat pump must maintain when the tariff is high (contact 2 - 2 is disconnected). You can set a temperature that is at least 5 °C lower than the one set in the previous step. The factory setting is 40 °C. • Store the setting by pressing the ⏻ symbol. • You can exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.
	• When the feature is enabled and contact (2 - 2) is connected (low tariff) the symbol ↙ is on. • When the feature is enabled and contact (2 - 2) is not connected (high tariff) the symbol ↙ flashes.
	• **Deactivation of the feature:** The feature can be deactivated by re-entering the user menu, where you set the feature to the OFF value.

EXTERNAL CONTROL OF THE HEAT PUMP ("ECHP" FEATURE)

Use the "ECHP" feature when you want to control the heating of domestic water by means of an external signal. When contact 2-2 is made, domestic water is heated (to the set temperature) and when contact 2-2 is interrupted, domestic water is not heated (freeze protection is active and features are enabled that are tied to the operation of radiator heating if there is enough hot water in the water tank).
If you have a timer set on the heat pump, the heating of water when contact is made (2-2) will be carried out in accordance with the settings of the timer.

1. Connect external control via contact (2 - 2).
   Connection is described in chapter "CONNECTION OF EXTERNAL CONTROL OF THE "PV", "LT", "ECH" AND "ECHP" FEATURES".
2. The "ECHP" feature is enabled in the user menu.

	• To enter the user menu hold (3 s) field no. **1.** • By pressing field no. **1** again, you can move by one step back on each step, thus exiting the user menu.
	• Parameter group starts to flash. • By pressing + or – select parameter number 02. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter number starts to flash. • By pressing + or – select parameter number 04 (ECHP). • Confirm the setting by pressing the ⏻ symbol.
	• By pressing + or – activate/deactivate the "ECHP" feature (ON - activation, OFF - deactivation). • Store the setting by pressing the ⏻ symbol. • If the "ECHP" feature is set to OFF (deactivation), the setting is completed after confirmation. You can exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.
	• By pressing field + or – select contact 2. • Store the setting by pressing the ⏻ symbol. • You can exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.
	• When the feature is enabled and contact (2 - 2) is connected (external start-up) the abbreviation ECHP is on. The feature enables the heating of domestic water by means of the heat pump. • When the feature is enabled and contact (2 - 2) is disconnected (external shut-off) the abbreviation ECHP flashes. The feature disables the heating of domestic water by means of the heat pump. • If you press on the field with the abbreviation ECHP (on the main screen) the clock appears. • If you hold (for 3 s) the field with the abbreviation ECHP (on the main screen) you will enter the clock settings.
	• Deactivation of the feature: The feature can be deactivated by re-entering the user menu, where you set the feature to the OFF value.

CONNECTION OF EXTERNAL CONTROL OF THE "PV", "LT", "ECH" AND "ECHP" FEATURES

Under the cover (wall-mounted version or in the junction box (floor-standing version) a clamp is ready to connect the contact for controlling the "PV", "LT", "ECH" and "ECHP" features.
To connect the contact use a connecting cable with wires with a minimum diameter of 0.5 mm^2 (H05VV-F 2G 0.5 mm^2).
The contact must ensure current load of a minimum of 6 A (230 V).
The "PV", "LT", "ECH" and "ECHP" features are controlled by connecting/disconnecting the contact 2 and 2 (Fig. 14).

Only one of the "PV", "LT", "ECH" and "ECHP" features can be controlled at a time!

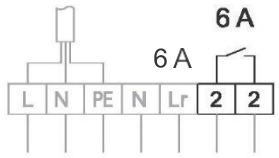
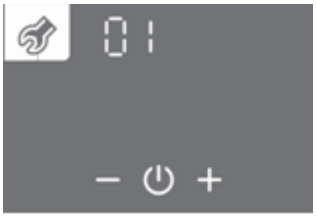


Fig. 14: Connection of a contact for controlling the "ECPV", "ECLT", "ECF" and "ECHP" features

Connection can be carried out by a trained professional only! Before connecting external control, the device must be disconnected from the power supply network!

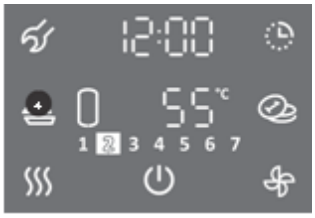
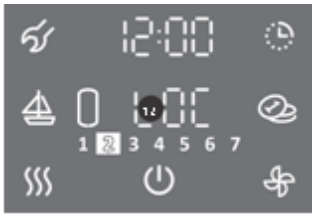
MANUAL RESERVE MODE OF OPERATION

If you want to disable the operation of the heat pump and heat your water only using the electric heater, turn on the manual reserve mode (the heater must be enabled, parameter 01:09).
Reserve mode of operation is a mode of operation using a heater, used when an error is detected on the aggregate section. In case of using the manual reserve mode of operation, please contact the service provider.

	• To enter the user menu hold (3 s) field no. 1. • By pressing field no. 1 again, you can move by one step back on each step, thus exiting the user menu.
	• Parameter group starts to flash. • By pressing + or – select parameter group number 01. • Confirm the setting by pressing the ⏻ symbol.
	• Parameter number starts to flash. • By pressing + or – select parameter number 08. • Confirm the setting by pressing the ⏻ symbol
	• By pressing + or – enable (ON) or disable (OFF) the manual mode of operation. • Store the setting by pressing the ⏻ symbol. • You can exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while. • When the manual reserve mode is switched on, the symbol ⊖ flashes on the display.

CHILD LOCK

The integrated child lock protects the device from unwanted modifications of settings or activation of features.

	• Hold (4 s) field no. 4.
	• In field no. 12 the word "LOC" appears. The main display is locked. • The symbol for power on/off works normally. The status of the heat pump is displayed as well (active components, features, time, errors, …). • Activation and setting of features is disabled. • By pressing field no. 12 ("LOC") the current temperature in the hot water tank is shown. • **Child lock deactivation**: Hold (for 4 s) field no. 4 again.

MAINTENANCE

The exterior of the heat pump should be cleaned with a mild detergent solution. Do not use solvents or abrasive cleaning agents.
By providing regular service checkups, you can ensure flawless operation and long life of the heat pump. The product is under warranty in accordance with the conditions from the warranty statement.

Before calling your service provider, check the following:
- Is everything OK with the power supply network?
- Is sufficient flow of heating source water ensured?
- Is the heating source water temperature appropriate?
- Is the compressor's operation audible?

Do not try to eliminate malfunctions by yourself, call your nearest authorized service provider

OPERATION ERRORS

Despite careful production and control, the heating pump can produce errors that must be solved by an authorised service provider.

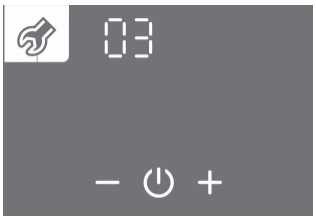
INDICATION OF ERRORS

- In case of a fault on the device, the beeper starts to beep, field no. **1** starts to flash, and an error code is indicated in field no. **17**. Once you press field no. **1** the beeping stops.

Error	Error description	Possible causes	Functioning during error	Solution
E01	Depleted Mg anode	No outlet from water storage tank for more than 14 days.	Appliance continues to function; basic function is guaranteed.	Let out a large amout of water from the hot water storage tank. If the error code is not deleted after the water has been let out, call the authorised service.
		Depleted magnesium anode.	Corrosion protection of the water storagetank not working.	Call the authorised service.
E02	/	/	/	/
E03	Bottom water sensor error	Temperature sensor fault.	The automatic radiator heating feature switches off (applies to models with a radiator). Hot water volume display is disabled – symbol flashing.	Call the authorised service. The error message disappears automatically once the fault has been eliminated.
E04	Middle water sensor error	Temperature sensor fault.	Hot water volume display is disabled – symbol flashing.	
E05	Upper water sensor error	Temperature sensor fault.	Hot water volume display is disabled – symbol flashing. Water heating switches off.	
E06	Heating source outlet sensor error	Temperature sensor fault.	Basic water heating is enabled, but within a narrower temperature range of the heat source.	
E07	Heating source inlet sensor error	Temperature sensor fault.	Basic water heating is enabled, but within a narrower temperature range of the heat source.	
E06 and E07	Heating source inlet and outlet sensor error	Temperature sensors fault.	Water heating by heat pump is switched off. Electric heater is switched on.	
E08	All water temperature sensors error	Temperature sensors fault.	Water heating is switched off.	
E08	All water temperature sensors error	Connector not in place on the electronics.	Water heating is switched off.	
E09	Domestic water temperature too high.	Temperature in the water storage tank is higher than 90 °C.	Water heating is switched off.	When the water is used up or the water temperature in the water tank drops to or below the set value, the error message disappears automatically. If the error message keeps reappearing, call the authorised service.
E10	/	/	/	/
E11	/	/	/	/
E12	/	/	/	/
E13	/	/	/	/
E14	/	/	/	/
E15	/	/	/	/
E16	/	/	/	/
E17	/		/	/

Error	Error description	Possible causes	Functioning during error	Solution
E18	No flow rate of heat source for over 5 seconds.	Heat source circulation pump fault.	Water heating by the heat pump system is switched off. Electric heater is switched on.	Check the operation of the circulation pump or the position of the valves. The error message disappears automatically once the fault has been eliminated, i.e. when flow rate is established.
		Fault on the electromagnetic valve on the heat source system (if applicable).		Check the position and functioning of the valves (if any) on the heating source system.
		Heat source system not deaerated.		Deaerate the heating source system. The error message disappears automatically once flow rate is established.
		Heat source pressure too low.		Fill the heating source system. The error message disappears automatically once the fault has been eliminated.
		Cleaning piece is clogged.		Clean the cleaning piece. The error message disappears automatically once the fault has been eliminated.
		Flow rate limiter is clogged.		Clean the flow rate limiter. The error message disappears automatically once the fault has been eliminated
		Flow switch fault.		Clean the flow switch and check its operation. The error message disappears automatically once the fault has been eliminated.
E19	No flow rate of heat source for over 15 minutes.	Heat source circulation pump fault.	Water heating by the heat pump system is switched off. Electric heater is switched on.	Check the operation of the circulation pump. Turn off the error message in the user menu.
		Fault on the electromagnetic valve or closed stop valve on the heat source system (if applicable).		Check the position and functioning of the valves (if any) on the heating source system. Turn off the error message in the user menu.
		Heat source system not deaerated.		Deaerate the heating source system. Turn off the error message in the user menu.
		Heat source pressure too low.		Deaerate the heating source system. Turn off the error message in the user menu.
		Cleaning piece is clogged.		Clean the cleaning piece. Turn off the error message in the user menu.
		Flow rate limiter is clogged.		Clean the flow rate limiter. Turn off the error message in the user menu.
		Flow switch fault.		Clean the flow switch and check its operation. Turn off the error message in the user menu.
E20	Flow rate fluctuation.	Flow rate fluctuates around the bottom limit of prescribed flow rate.	Water heating by the heat pump system is switched off. Electric heater is switched on.	Increase the flow rate.
		The system is poorly deaerated.	Water heating by the heat pump system is switched off. Electric heater is switched on	Deaerate the system.

DELETING ERROR WARNINGS

	• To enter the user menu hold (3 s) field no. 1. • By pressing field no. 1 again, you can move by one step back on each step, thus exiting the user menu.
	• Parameter group starts to flash. • By pressing + or – select parameter group number 03. • Confirm the setting by pressing the ⏻ symbol.
 	• Parameter number starts to flash. The parameter status is shown. • By pressing + or – you can move between parameters. • If E… appears in field no. 12 it means that there is an error of the parameter (see the table of errors). • If the display shows – – it means that the parameter has no errors.
	• Confirm the selection of the parameter by pressing ⏻ . • You can delete the parameter error by pressing the ⏻ symbol. • You can exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.

TECHNICAL CHARACTERISTICS

Model		CTB120IW	CTB120IWR	CTB200IF
Declared load profile		M	M	L
Energy efficiency class [1]		A+	A+	A+
Water heating energy efficiency (ηwh) [1]	[%]	134	131	165,5
Annual electricity consumption [1]	[kWh]	383	393	619
Daily electricity consumption [1]	[kWh]	1,808	1,866	2,905
Thermostat temperature settings	[°C]	55	55	55
Level of indoor sound power	dB(A)	51	51	41
Value of "smart"		0	0	0
Volume	[l]	119,5	117,0	200,0
Quantity of mixed water at 40 °C V40 [1]	[l]	157	153	259,7
Nominal pressure (sanitary water)	[MPa (bar)]	0,6 (6)	0,6 (6)	0,6 (6)
Weight / Filled with water	[kg]	68 / 188	78 / 195	85 / 285
Anti-corrosion protection of tank		Enamelled / MG Anode		
Insulation thickness	[mm]	40 – 85	40 – 85	60
Degree of protection		IP24	IP24	IP22
Max connected load	[W]	2380	2400	2400
Voltage		230 V / 50 Hz		
Number and power of heating elements	[W]	2 x 1000		
Electricity protection	[A]	16		
Adjusted water temperature	[°C]	55		
Maximum temperature (HP / el. heater)	[°C]	65 / 75		
Legionella control programme	[°C]	70		
Temperature range of installation	[°C]	2 / 40		
Heating time W25 / W10-55 [2]	[h:min]	4:42	4:19	06:22
Energy consumption in the selected cycle of emissions W25 / W10-55 [2]	[kWh]	1,40	1,46	2,2
COP_{DHW} (W25 / W10-55) [2]		4,20	4,03	5,4
Power in standby mode according to EN16147 [2]	[W]	10	11	16
Water connections (heating water)	["]	G 3/4	G 3/4	G 3/4
Operational flow rate of the source	[l/h]	200	200	180
Operation range – minimal flow heating source water	[l/h]	min. 120	min. 120	min. 120
Operation range – heating source water	[°C]	12 / 40	12 / 40	12 / 40
Refrigerating agent		R134a	R134a	R1234ze
Quantity of coolant	[kg]	0,550	0,550	0,850
Global warming potential		1430	1430	7
Carbon dioxide equivalent	[t]	0,787	0,787	0,006

1) By water source temperature of 10 °C and 10 °C DHW heated up to 55 °C regarding to EN16147 and commission communication (2014/C 207/03)

2) By water source temperature of 25 °C and 10 °C DHW heated up to 55 °C regarding to EN16147