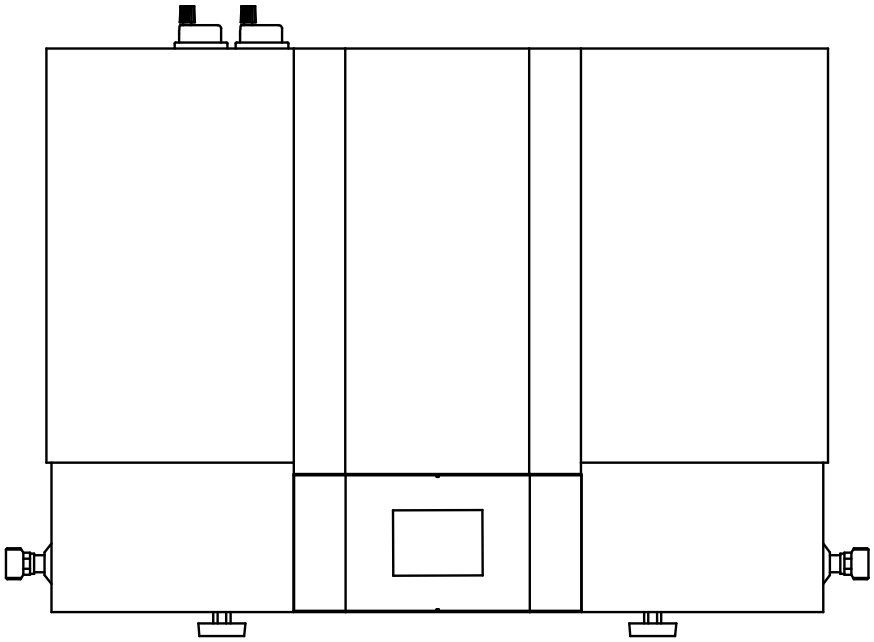


WARNINGS

⚠ 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.
⚠ The device must be transported in an upright position. As an exception it can be tilted up to 35° in any direction. Take care not to damage the housing and the vital parts of the device during transport.
⚠ The device is not intended for use in premises where corrosive and explosive substances are present.
⚠ Connection of the device to the power mains must take place in accordance with electrical installation standards.
⚠ Between the device and permanent fixture, please install a disconnect switch to separate all poles from the power supply network in accordance with the national installation regulations.
⚠ A damaged power cord must be replaced exclusively by the manufacturer, service provider or authorized personnel, in order to avoid danger.
⚠ To avoid damage of the heat pump's aggregate, the device must not be operated without a medium in the system! The system must be deaerated!
⚠ Installation should be carried out in accordance with the valid regulations and according to the instructions of the manufacturer. Installation must be performed by qualified personnel.
⚠ Elements in the electronic control unit are live also when the switch-off button (9) on the heat pump is pressed.
⚠ If an electric heater is used in the hot water tank, it must be protected by an additional thermal cut-off for protection in case of failure of the operating thermostat.
⚠ The device must be placed in a dry, non-freezing environment, if possible, in the vicinity of other heating sources, with a temperature above 5 °C. The device shall not be placed outdoors.
⚠ Please do not attempt to fix any defects of the device by yourself. Call the nearest authorised service provider instead.
⚠ The surface of the heat exchanger in the hot water tank must be at least 0.8 m^2!
⚠ In case of temperature drop of the additional heating source and enabled circulation of water through the heat exchanger in the hot water tank, uncontrolled loss of heat from the tank may occur. When connecting to other heating sources, correct temperature regulation must be ensured.
⚠ In case of connection to other heating sources, the ECHP feature must be activated! Combination of both sources can lead to overheating of the domestic water and, consequently, excessive pressures.
⚠ Use of a circulation conduit on the hot water tank leads to additional heat losses.
⚠ Do not cover or place objects on the heat pump.
⚠ Water in the pipe connection with the hot water tank can exceed 60 °C. Burn hazard!
⚠ Start using the device only after the installation and connection of all the safety elements.
⚠ All the connections on the water installation of the heat pump must be galvanically isolated.
⚠ The product contains fluorinated greenhouse gases. Hermetically closed.

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 Buyer, thank you for purchasing our product.
PRIOR TO THE INSTALLATION AND FIRST USE OF THE HEAT PUMP, PLEASE READ THESE INSTRUCTIONS CAREFULLY.

The heat pump has been manufactured in compliance with the relevant standards that allow the manufacturers the use of the CE symbol. Its technical characteristics are indicated on the data plate, located on the back side of the heat pump.

The heat pump must be connected by a qualified professional. **Interventions in its interior for repair purposes can only be performed by an authorised maintenance service provider.** Be especially careful when following instructions in case of faults and for the safe use of the heat pump.

Store this booklet in case you may have any doubts about the functioning or maintenance.
The installation manual and user manuals are available on our website **http://www.tiki.si**. Authorised maintenance personnel are available for occasional maintenance. They will help you with their vast experience.

The heat pump can also be used in combination with other heating sources.

FIELD OF USE

This type of heat pump is intended primarily for heating domestic water in households and other users, where the daily consumption of hot water (40 °C) does not exceed 400 to 700 l (recommended size of water tank from 120 l to 500 l, surface of heat exchanger in the hot water tank must be at least 0.8 m^2). **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.** As the heat pump cools its surroundings during operation, the benefit of using the heat pump is doubled (heating of water – cooling of room). The operation of the heat pump is completely automatic.

The device must be connected to a heat exchanger in the hot water tank. It needs power supply in order to operate. Inlet and outlet of air can also be carried out by inlet/outlet of air from another room. It is recommended to leave enough room above the device (see Figure 2). The heat pump may not be used for purposes other than those defined in these Instructions. The device is not designed for use in rooms where corrosive or explosive substances are present. The manufacturer shall not assume any liability for damages caused by incorrect installation or misuse that are not in compliance with the Instructions for installation and use.

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

The marking of your heat pump is indicated on the data plate, which is located on the back side of the device.

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 polystyrene, etc.) as these present a potential risk. Do not dispose of these materials in the environment.

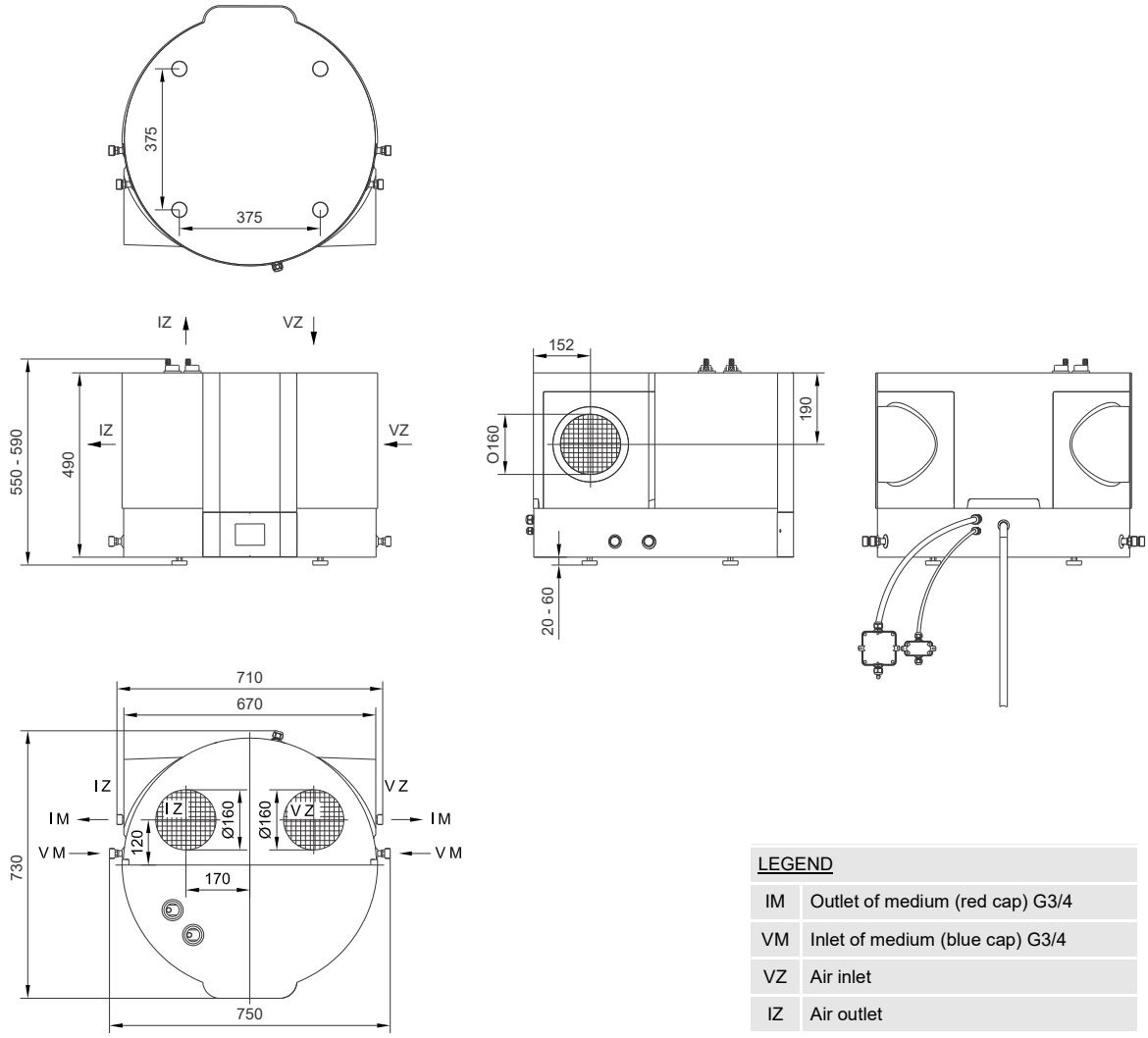
⚠ **The heat pump is not designed for use in rooms where corrosive or explosive substances are present.**

STORAGE AND TRANSPORT

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

⚠ **The heat pump must be transported in an upright position. As an exception it can be tilted up to 35° in any direction. Take care not to damage the housing and the vital parts of the device during transport.**

DIMENSIONS AND CONNECTIONS



LEGEND	
IM	Outlet of medium (red cap) G3/4
VM	Inlet of medium (blue cap) G3/4
VZ	Air inlet
IZ	Air outlet

Fig. 1: Connection and installation dimensions of the heat pump [mm]

INSTALLATION OF THE HEAT PUMP

The device must be placed in a dry, non-freezing environment, in the vicinity of other heating sources if possible, with a temperature above 5 °C. The device shall not be placed outdoors. Place the heat pump on a console shelf or atop of the hot water tank if that is possible. The device can be used with ambient or guided air. To prevent pressure depression in the building, inlet of fresh air must be enabled at all times. The recommended level of air exchange for an apartment building is 0.5. This means that the entire quantity of air in the building is replaced every 2 hours.

OPERATION USING AMBIENT AIR

In operation using ambient air, the domestic water is heated only using the energy of the air from the room where the heat pump is placed. The heat pump is placed in a dry, non-freezing environment, in the vicinity of other heating sources if possible, with temperatures ranging from 7 to 35 °C and a minimum volume of 20 m^3. Generally we recommend a big enough and well-ventilated room with temperature ranging between 15 and 25 °C, which represents optimum conditions for the operation of the heat pump. When selecting a room for the placement of the hot water tank and heat pump, great care must be taken that the room is dust-free, as dust negatively affects the performance of the heat pump.

Several manners of use of the suction and outlet opening are possible in the heat pump (see Figure 2).

For ambient air, it is most advisable to use the side connections for air inlet and outlet, as the mixing of air is minimised.

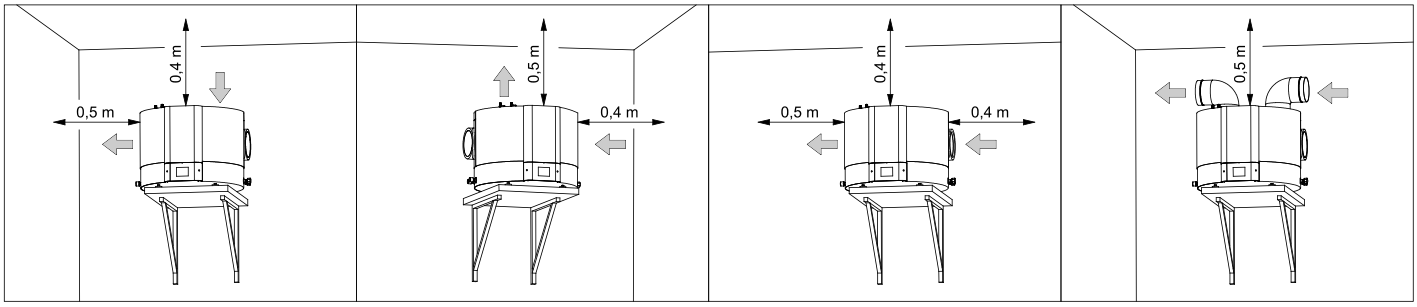


Fig. 2: Manners of use of suction and outlet openings

OPERATION USING GUIDED AIR

In operation using guided air, the heat pump captures and discharges air also from other premises via a pipeline system. It is advisable that the pipeline system is insulated, to prevent condensate to form inside the pipes. When capturing air from outside, the exterior part of the pipe must be covered with a mesh to prevent large particles and snow from entering the device.
To ensure constant efficient operation of the heat pump, you can build in directing flaps and take air from the room or from outside and then return it back to the premises or outside. The temperature of the intake air must meet the specifications of the device (see technical characteristics table).

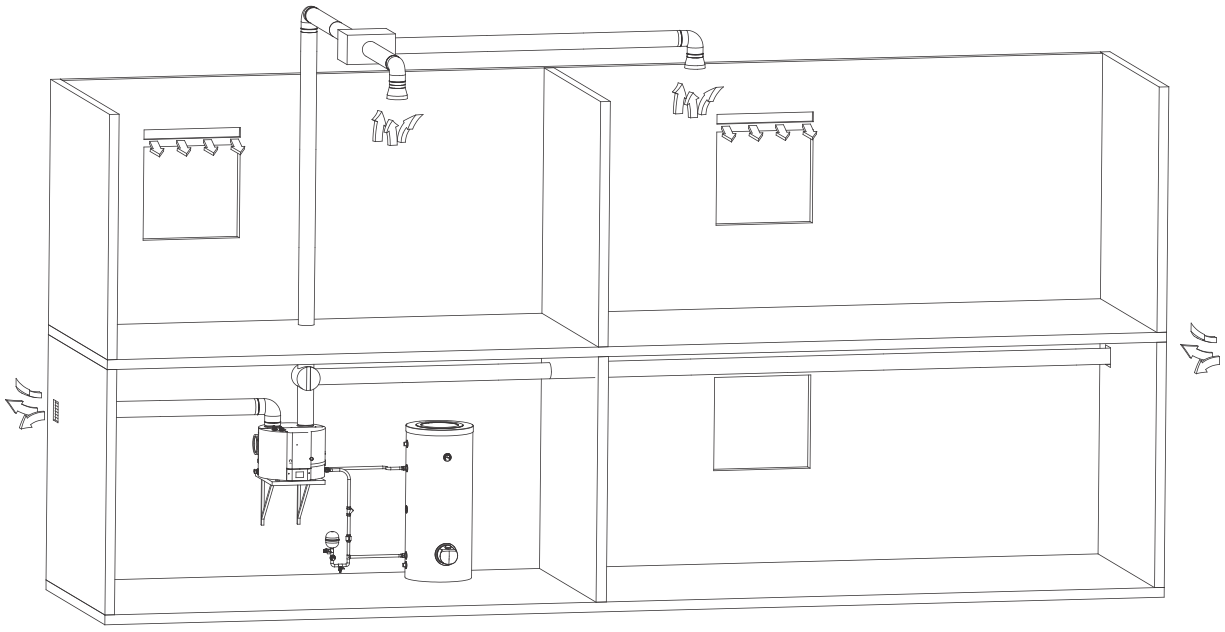


Fig. 3: Operation using guided air

DETERMINING PRESSURE DROPS IN THE PIPELINE SYSTEM FOR AIR INLET AND OUTLET

The heat pump enables different modes of installation of pipeline connections of inlet and outlet air. It is recommendable to use the connections that enable the simplest connection of the device of the channel system. When planning the pipeline system for inlet and outlet of air to and from the heat pump, it is of key importance to take into account the aerodynamic characteristic of the heat pump ventilator, which also results in the loss of static pressure. The aerodynamic characteristic of the pump is shown in the diagram and presented as pressure drop corresponding to the air flow. The operating point of the fan of the heat pump is at 100 Pa of static pressure or at air flow of 330 m^3/h. As the working drop of static pressure in the air pipeline system, the nominal operation is determined at Δp= 100 Pa. If the calculations show higher pressure drops, the speed of the fan can be increased. Increase of speed is efficient all the way to 80 %, and above this value the flow rate no longer increases, so elevation above this value is not advised, as it will only lead to increased noise.

The diagram shows the following zones:

- High efficiency zone – zone of high air flows (above 300 m^3/h) requires lower pressure drops (installation without or with short channels) and setting of the fan at 60 or 80 %.
- Operating zone – zone of medium air flows (between 200 and 300 m^3/h). This area represents a 40% setting of the fan and minimum pressure drops or 60 or 80 % and pressure drops between 50 and 300 Pa.
- Extended zone. It represents a wider range of settings and high pressure drops. Extended zone can be used only if the temperature of air is above 20 °C. If this condition is not met, efficiency will start to decline.

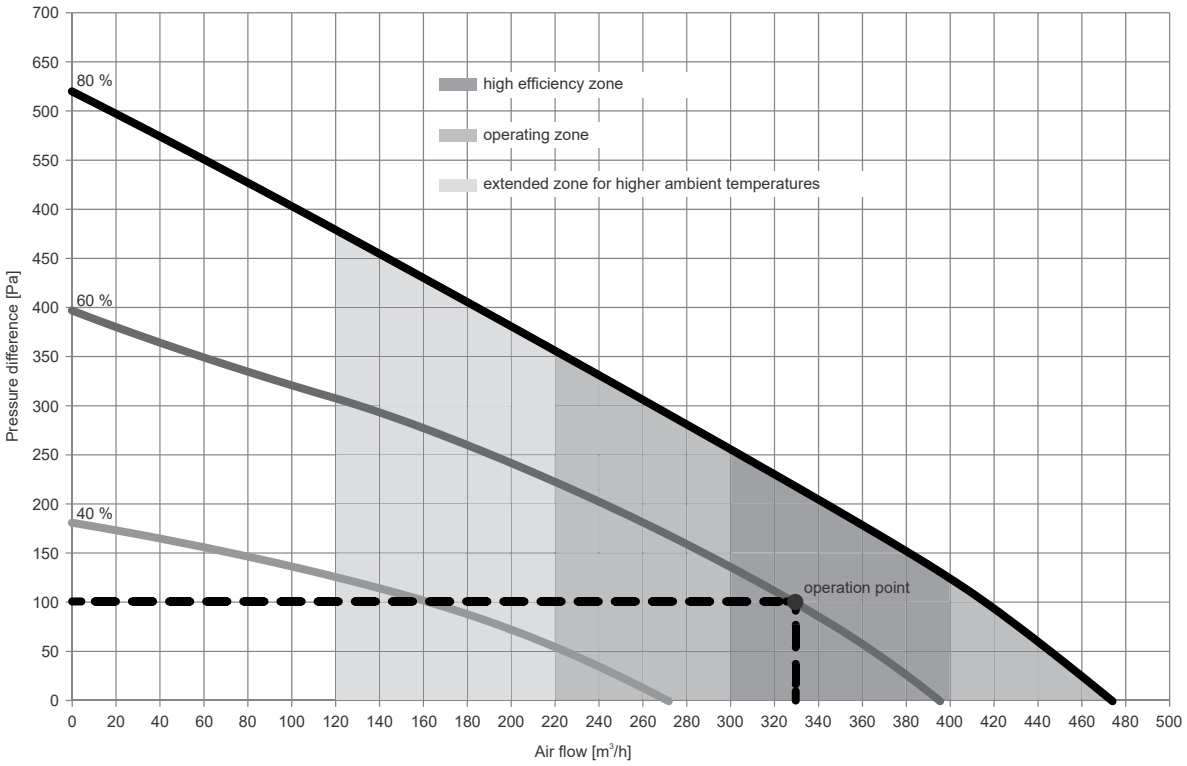
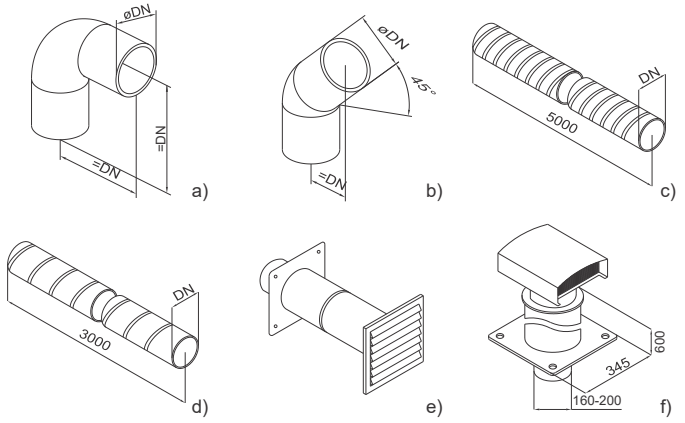


Fig. 4: Aerodynamic characteristic of the heat pump fan

Values of the total drop of static pressure are calculated by adding up the losses of an individual element built in the air pipeline system. Values of static pressure drops of an individual element (drops of static pressure of elements are indicated for internal diameter of 150 mm) are shown in the table below.

Types of elements and corresponding values of pressure drops



Type of element	Static pressure drop value
a) Elbow 90°	5 Pa
b) Elbow 45°	3 Pa
c) Flexible tube	5 Pa/m
d) Spiral tube	3 Pa/m
e) Suction grill	25 Pa
f) Roof vent for air outlet	10 Pa

Fig. 5: Schematic demonstration of the basic elements in a pipeline system for inlet and outlet of air

Calculations of the values of pressure drops are merely informative. For more precise calculation of air flows, the detailed characteristics of the elements must be taken into account or the designer must be consulted. After installation it is advisable to measure the air flows in the pipeline system. The total loss of static pressure is calculated by adding up the losses of static pressure in individual elements built into the pipeline system. The recommended nominal operation is at a total drop of about 100 Pa. If flow rates are reduced, the COP starts dropping.

Example of calculation

	Number of elements	Δp (Pa)	ΣΔp (Pa)
Elbow 90°	4	5	20
Flexible tube	9	5 Pa/m	45
Suction grid	1	25	25
Roof vent for air outlet	1	10	10
Total			100

⚠ Connecting the heat pump to the same pipeline system as a kitchen extractor fan or taking air out of several small apartments or suites is not allowed.

When the heat pump is operating, condensate is formed in the interior of the aggregate. It needs to be drained into the sewage system via a flexible Ø16 mm drain pipe for condensate at the back of the heat pump. The quantity of the condensate depends on the temperature and humidity of air.

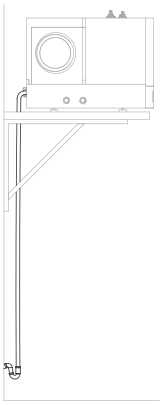
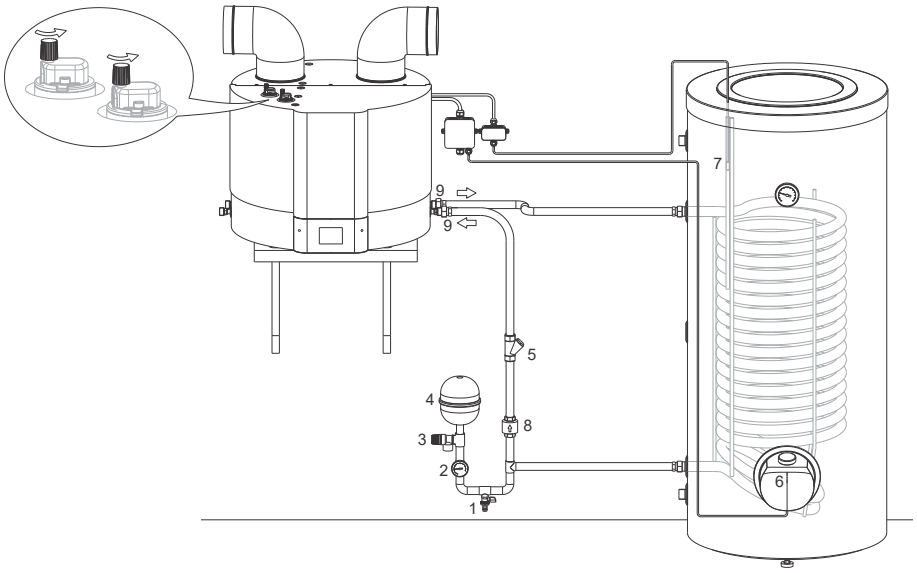


Fig. 6: Condensate drainage

To minimize the transfer of noise and vibrations through walls into the premises where this could be disturbing (bedroom, resting areas) please take the following measures:
- install flexible joints for hydraulic connections
- install a flexible tube for the pipeline of inlet/outlet air
- plan vibration insulation for wall openings
- plan noise dampers for inlet/outlet air
- pipelines for inlet/outlet air should be attached using noise dampers
- plan vibration insulation against the wall or floor
- use installation feet.

CONNECTING THE HEAT PUMP TO A HOT WATER STORAGE TANK

The heat pump must be installed higher than the heat exchanger of the hot water tank. Otherwise, a deaerator must be installed on the highest point of the pipeline connection. The surface area of the heat exchanger in the hot water tank must be at least 0.8 m^2. Medium inlet and outlet on the heat pump pipes are colour-coded. The medium inlet is marked with blue, and medium outlet is marked with red. It is recommended to insulate the pipeline connection. The pipeline connection between the heat pump and the hot water tank must include a safety valve and an expansion tank. Installing a safety valve is mandatory in order to assure safe operation (recommended: nominal pressure of 0.3 MPa (3 bar)). The outflow nozzle on the safety valve must have an outlet into the atmosphere. The volume of the expansion tank must be at least 5 % of the volume of the system (volume of the heat exchanger in the tank, pipeline and heat pump). The volume of the pipeline and heat exchanger in the heat pump is approximately 1 l. The pipeline connections must have a minimal diameter of 3/4", i.e. DN 25, which will ensure low enough pressure drops and consequently maximum distance of the aggregate from the heat exchanger will be 10 m.
At the lowest part of the pipeline it is recommended to install an outlet/filling valve. It is also recommended to build in a one-way valve at the entry side of the pipeline in the heat pump (see Figure 7a).
The temperature sensor must be installed in the upper half of the height of the heat exchanger and higher than the heater if installed and connected to the heat pump (see Figure 7a).



LEGEND	
1	Filling / outlet valve
2	Manometer
3	Safety valve
4	Expansion tank
5	Filter for impurities
6	Electric heater
7	Temperature sensor
8	One-way valve
9	Dielectric connector

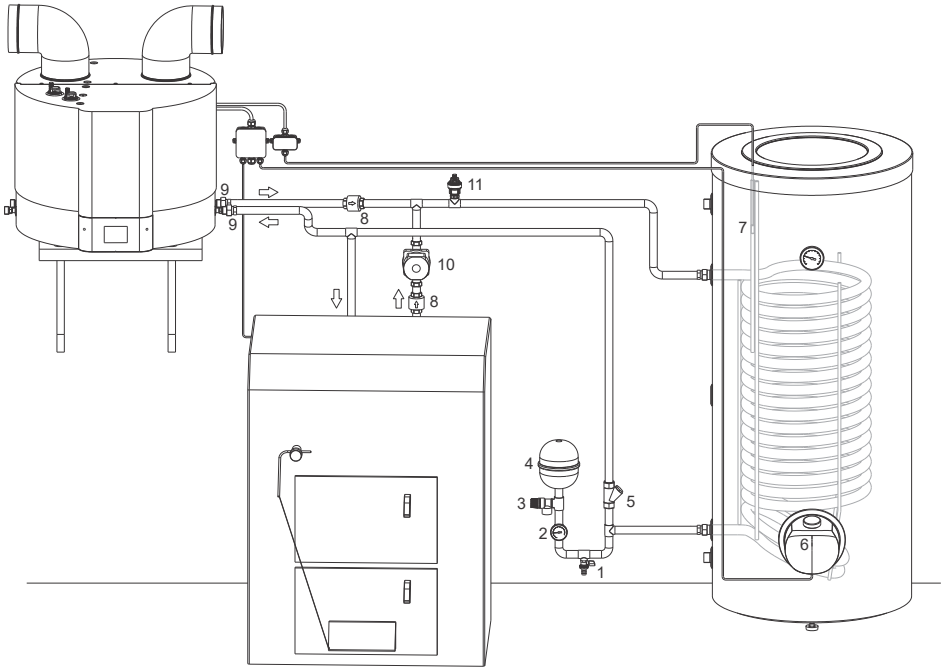
Fig. 7a: Connecting the heat pump to a hot water storage tank

⚠ **The heat pump may be connected to a hot water tank only via the heat exchanger within the hot water tank!**
⚠ **Due to the danger of damaging the aggregate, the heat pump cannot operate without a medium in the system!**
⚠ **The system must be deaerated! The deaerator valve must be open (Fig. 7a).**
⚠ **Before filling the system, it must be cleaned of all impurities and an impurity filter must be installed.**

CONNECTING THE HEAT PUMP TOGETHER WITH ANOTHER HEATING SOURCE

In this case the heat pump is a secondary source and is turned on when heating from another (primary) source (central heating boiler, solar collectors etc.) is not possible. To set the controls of the heat pump, see chapter “EXTERNAL CONTROLLING OF THE HEAT PUMP (ECHP FEATURE)”.

⚠ In case of connecting other sources of heat the ECHP feature must be activated! Combination of both sources can lead to overheating of domestic water and, consequently, too high pressures.

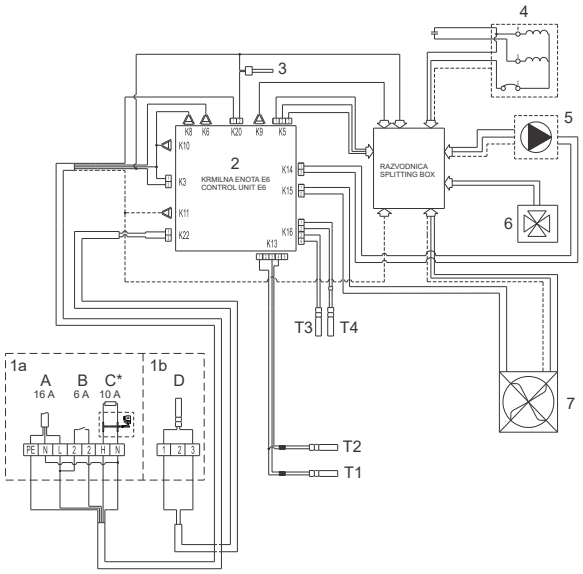


LEGEND	
1	Filling/outlet valve
2	Manometer
3	Safety valve
4	Expansion tank
5	Filter for impurities
6	Electric heater
7	Temperature sensor
8	One-way valve
9	Dielectric connector
10	Circulation pump
11	Deaerator

Fig. 7b: Connecting the heat pump to hot water storage tank in combination with another (primary) source of heating

CONNECTING TO THE POWER SUPPLY NETWORK

To connect the heat pump it is necessary to ensure wiring that is appropriate for 16 A load. Connection of the heat pump to the power supply network must be conducted in accordance with electrical installation standards. Between the heat pump and the permanent installation, an all-poles disconnect switch should be installed in accordance with the national installation standards.
In case of using an electric heater in the hot water storage tank it must be protected by a thermal cutoff. The thermostat on the hot water tank must be set to the maximum value. If the set temperature of the heat pump exceeds the temperature set on the hot water tank thermostat, the storage tank thermostat takes over the regulation.



LEGEND	
1a	Junction box
A	Connecting cable
B	Connection of the contact for controlling additional functions
C*	Connection of electric heater (max. 2000 W)
1b	Temperature sensor junction box
D	Temperature sensor
2	Control unit
3	Pressure switch
4	Compressor
5	Circulation pump
6	4-way valve
7	Fan
T1	Inlet water temperature sensor
T2	Outlet water temperature sensor
T3	Inlet air temperature sensor
T4	Evaporator temperature sensor

Fig. 8a: Electric circuit diagram

* If you connect the electric heater you must enable it in the user menu (see chapter “CONNECTING AN EXTERNAL ELECTRIC HEATER").

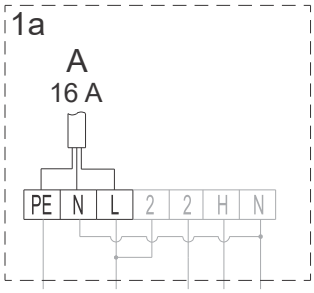


Fig. 8b: Connecting to power supply network (position A)

Before connecting to the power supply network a connection cable must be built in the junction box with a minimum diameter of at least 1.5 mm^2 (H05VV-F 3G 1.5 mm^2).

⚠ **Connection must be carried out by a trained professional.**

HEAT PUMP OPERATION

After the heat pump is connected to the heat exchanger of the hot water tank, the water and power supply network, and to the water-filled tank, it is ready to be operated. The heat pump can be operated using an LCD touch screen (Figure 9). Features and displays depend on the models.

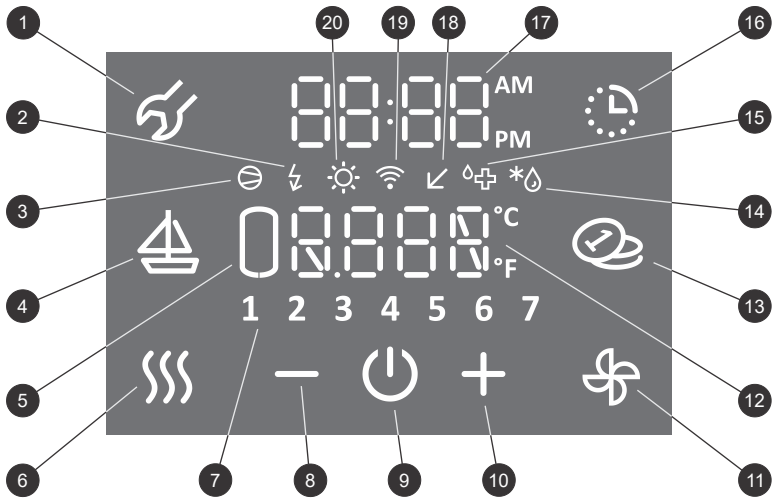
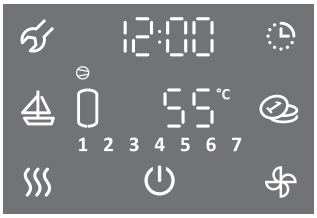


Fig. 9: Control display

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 (does not apply for TCA1ZVNT)
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	Activation of ventilation, Activation of ventilation in timer mode
12	Display and setting of temperature (°C/°F)
13	On/off "SMART" feature * depending on the model
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 * depending on the model
20	Signalisation of the operation of the PV feature

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.**

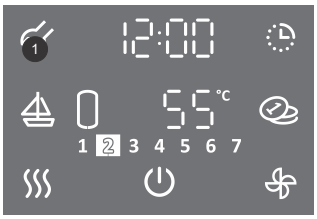
After starting the heat pump, the compressor and fan of the heat pump always operate for a minimum of 5 min (minimum time for operation of compressor).

After shutting off the heat pump, the compressor and fan don't operate for at least 20 minutes (minimum time for compressor standby). If a request to activate the compressor is made, this does not happen. The ⊖ symbol flashes on the screen.
After standby, the compressor and fan activate automatically. The ⊖ symbol is displayed.

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 9).
- 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!

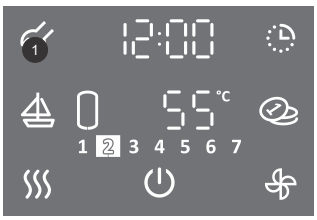


Some parameters and features are set up in the user menu.
- You can enter the user menu by holding (for 3 s) the field no. 1 (for setting the parameters and features see next chapters).

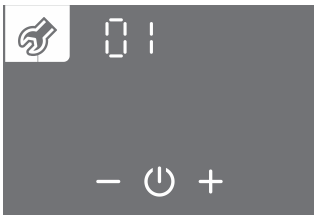
List of parameters and features in the user menu

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)
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)

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.

OPERATION OF THE HEAT PUMP AT LOWER AND HIGHER TEMPERATURES OF AMBIENT AIR

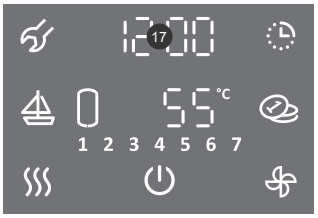
a) low-temperature version of the heat pump with connected and enabled electric heater

When the device is started, the ventilator starts first. If the temperature of the incoming air is lower than -7 °C or higher than 35 °C, the fan shuts off and the electric heater is switched on. The heat pump operates in the reserve mode (the ϟ symbol is displayed). The possibility of switching to the normal mode is checked cyclically. If the temperature of the incoming air is higher than -7 °C or lower than 35 °C the heat pump switches to the normal mode of operation (the ⊖ symbol is shown). The heater switches off.
At lower air temperature, the evaporator defrosting cycle is started if necessary (the *◊ symbol is shown). Defrosting lasts until the conditions are met for normal operation of the heat pump. After successful defrosting, the heat pump reverts back to normal operation.
If defrosting is unsuccessful, the unit reports an error. The field no. **1** on the display starts to flash, and a continuous beeping noise is heard. In field no. **12** the error code **E10** is displayed (see chapter "OPERATION ERRORS"), and the device automatically switches to heating with an electric heater (symbol ϟ is displayed).

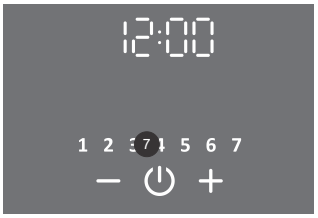
b) low-temperature version of the heat pump without a connected electric heater

When the device is started, the ventilator starts first. If the temperature of the incoming air is lower than -7 °C or higher than 35 °C, the fan shuts off. In these conditions the domestic water is not heated. The possibility of switching to the normal mode is checked cyclically. If the temperature of the incoming air is higher than -7 °C or lower than 35 °C the heat pump switches to the normal mode of operation (the ⊖ symbol is shown). At lower air temperature, the evaporator defrosting cycle is started if necessary (the *◊ symbol is shown). Defrosting lasts until the conditions are met for normal operation of the heat pump. After successful defrosting, the heat pump reverts back to normal operation (the symbol ⊖ is shown).
If defrosting is unsuccessful, the unit reports an error. The field no. 1 on the display starts to flash, and warning beeps are heard. In field no. 17 the error code E10 is displayed (see chapter "OPERATION ERRORS").

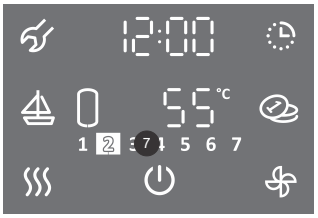
SETTING THE HOUR AND DAY OF THE WEEK



- Hold (for 3 s) field no. **17**.



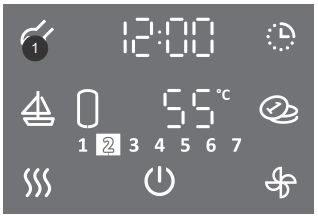
- The hour segment starts to flash.
- By pressing **+** or **–** set the hour.
- Confirm the setting by pressing the ⏻ symbol.
- The minutes segment starts to flash.
- By pressing **+** or **–** set the minutes.
- Confirm the setting by pressing the ⏻ symbol.
- The day of the week starts to flash (field 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).

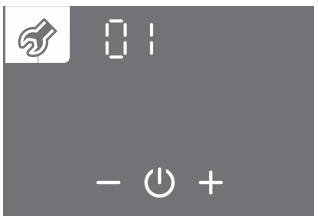
- The change of time display 12/24 can be set in the user menu.

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.

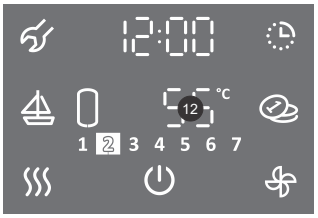


- The parameter group starts to flash.
- By pressing **+** or **–** select the number of the parameter group 01.
- Confirm the setting by pressing the ⏻ symbol.

- 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

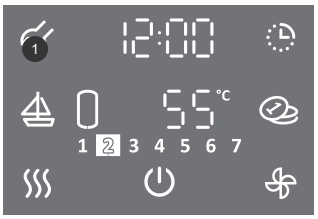


- Press field no. **12**.

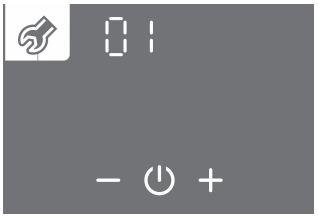
- Field **12** starts to flash.
- By pressing **+** or **–** set the desired temperature. Factory setting of the temperature is 55 °C.
- Store the setting by pressing the ⏻ symbol.

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

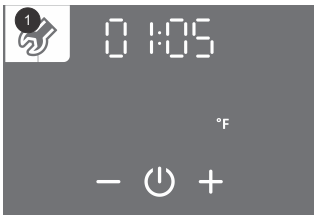


- To enter the user menu hold (for 3 s) field no. **1**.
- By pressing field no. **1** again, you can move one step back, thus exiting the user menu.



- The parameter group starts to flash.
- By pressing **+** or **–** select the number of the parameter group 01.
- Confirm the setting by pressing the ⏻ symbol.

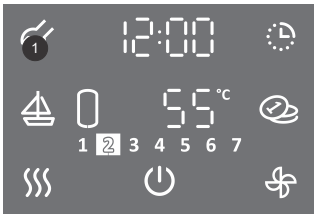
- The parameter number starts to flash. At the same time the current value of the parameter is shown.
- By pressing **+** or **–** select the number of the parameter 05.
- Confirm the setting by pressing the ⏻ symbol.



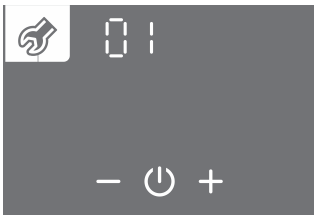
- Parameter value starts to flash.
- By pressing **+** or **–** select the display of temperature either in °C or °F.
- Store the setting by pressing the ⏻ symbol.
- Exit the user menu by pressing field no. 1 (moves you one step back) or wait for the unit to exit the menu automatically after a while.

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** again, you can move one step back, thus exiting the user menu.



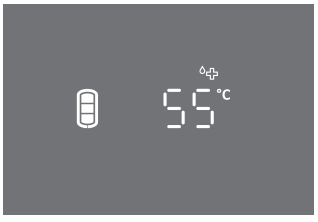
- The parameter group starts to flash.
- By pressing **+** or **–** select the number of the parameter group 01.
- Confirm the setting by pressing the ⏻ symbol.

- The parameter number starts to flash. 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

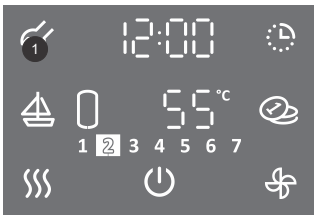
If the water in the tank does not reach 65 °C for 14 consecutive days, the anti-legionella programme switches on and heats the water to 70 °C (if an electric heater is connected) or up to 65 °C (if electric heater is not connected) and maintains it for 60 minutes.



- During the operation of the anti-legionella programme the symbol is displayed.

⚠ Warning: 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 90 days) or shutdown of the anti-legionella programme can be set in the user menu.



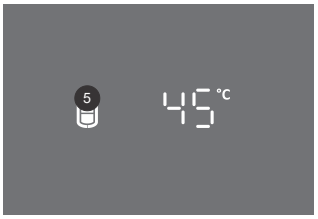
- To enter the user menu hold (for 3 s) field no. **1**.
- By pressing field no. **1** again, you can move one step back, thus exiting the user menu.

- 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 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 HEAT PUMP (NOT APPLICABLE TO TCA1ZVNT)

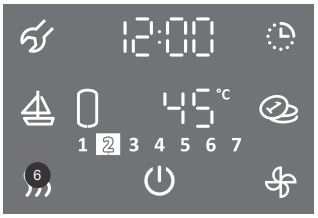


Field no. **5** shows the symbol:

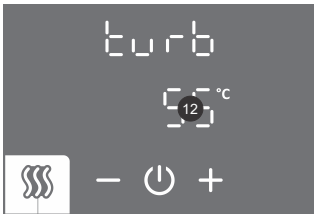
- no hot water
- small quantity of hot water
- ...
- large quantity of hot water

"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**.



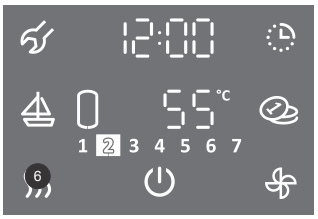
- Field no. **12** starts to flash.
- By pressing **+** or **–** set the temperature of the "TURBO" feature.
- Store the setting by pressing the ⏻ symbol.

- 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).

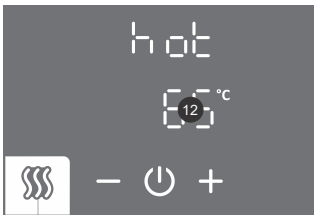
In versions without a heater, the "TURBO" feature is not enabled.

"HOT" FEATURE

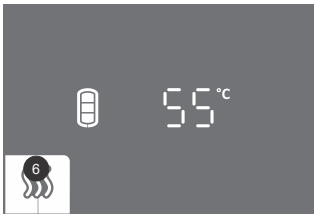
The "HOT" feature can be used if you want to heat the water to a temperature higher than the currently set temperature. If the symbol ⦚ in field no. **6** is not visible, the "HOT" feature is not available.



- Briefly press field no. **6**.



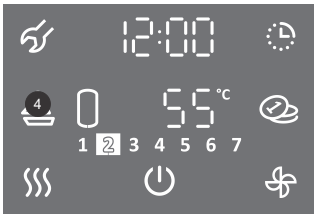
- Field no. **12** starts to flash.
- By pressing **+** or **–** set the temperature of the "HOT" feature.
- Store the setting by pressing the ⏻ symbol.



- 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**.

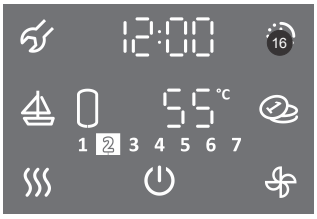
- Field no. **12** starts to flash.
- By pressing **+** or **–** set the number of days of your vacation.
- Store the setting by pressing the ⏻ symbol.

- 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).

Heat pump models without a heater
If a heat pump is without a heater, the minimum temperature is maintained by operation of the heat pump. If the ambient temperature is outside the heat pump's zone of operation, freeze protection will not work!

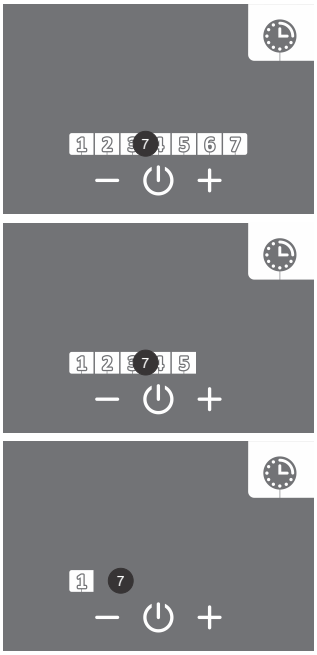
TIMER FEATURE

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 shut-down. 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 take into account 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.



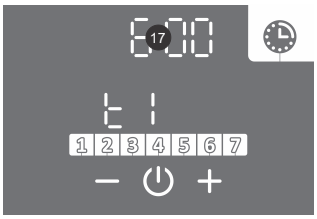
1. Hold (for 3 s) field no. **16**.

SELECTING THE TIMER MODE OF OPERATION

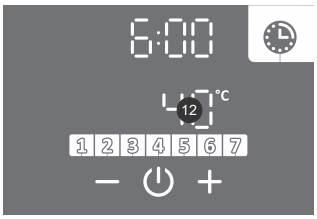


2. Field no. **7** starts to flash.
3. By pressing **+** or **–** select from among three timer options:
   - timer mode for the entire week (in field no. **7** the numbers from 1 to 7 flash),
   - timer mode of operation for the period between Monday and Friday and from Saturday to Sunday (in field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

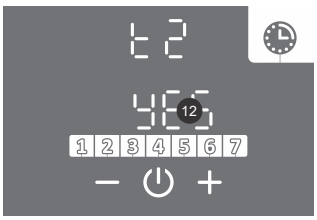
TIMER MODE FOR THE ENTIRE WEEK



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.

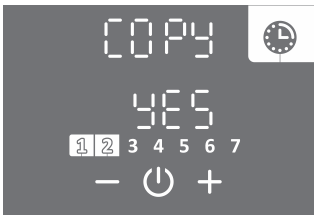


11. Field **12** starts to flash.
12. By pressing **+** or **–** select whether you want to complete the setting or set the next time point t2 (t3, t4) (YES - NO). If you select NO the setting of the selected segment will be finished. If you select YES, set the other time points as per the above procedure (from step 5 to 13) – max. 4.
13. Confirm the setting by pressing the ⏻ symbol.

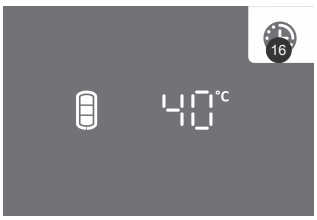
TIMER MODE OF OPERATION FOR THE PERIOD BETWEEN MONDAY AND FRIDAY AND FROM SATURDAY TO SUNDAY
To set the time points for the period from Monday to Friday, use steps from 5 to 13.

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.



14. 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.
15. 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.

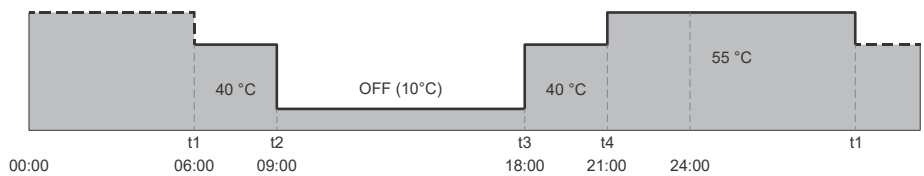


Fig. 10: Example of setting the timer

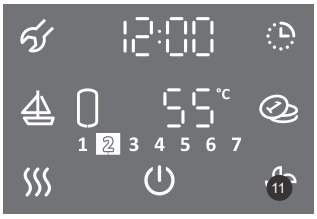
VENTILATION" FEATURE

The "VENTILATION" feature can be used if you want additional ventilation of premises during the time when the heat pump is not heating water. You can select between manual activation, timer and external control of the VENTILATION feature.

The set features of heating of domestic water always have priority before the set features of heating!

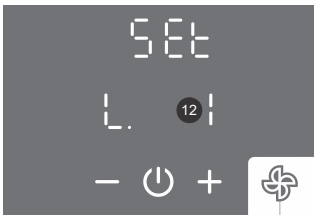
a) MANUAL ACTIVATION OF "VENTILATION"

In the “VENTILATION " feature you can set the duration and speed of operation of the fan. If the symbol in field no. **11** is not visible, the "VENTILATION" feature is not available.

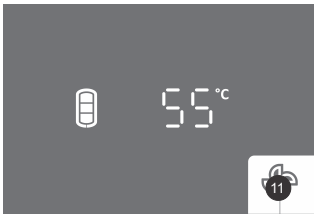


- Briefly press field no. **11**.

- Field no. **12** starts to flash.
- By pressing **+** or **–** set the duration of the “VENTILATION" feature. Up to 30 minutes can be set with steps of 5 min, and duration of more than 30 minutes can be set with steps of 10 minutes. After maximum setting of time, the word ON appears on the display, meaning constant operation of the fan until manual deactivation of the feature.
- Confirm the setting by pressing the ⏻ symbol.



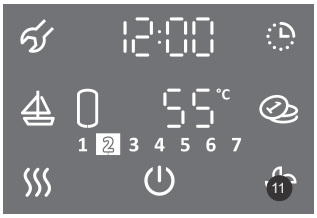
- Field no. **12** starts to flash.
- By pressing **+** or **–** set the fan speed. You can select between three levels of speed (L. 1 – low speed, L. 2 – medium speed, L. 3 – high speed).
- Confirm the setting by pressing the ⏻ symbol.



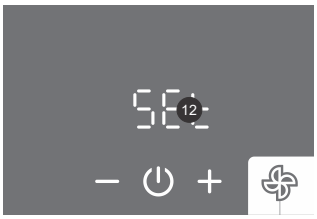
- During the operation of the feature, field no. **11** is illuminated.
- The ventilation can be switched off by pressing field no. **11** (main display).

b) “TIMER – VENTILATION” FEATURE

In the “TIMER – VENTILATION” feature you can set the time points for fan operation. For each point you can set the time, speed of the fan or shutdown of the fan. The feature enables four time points a day. 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. **11** is not visible, the “TIMER – VENTILATION” feature is not available.

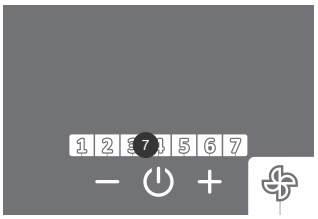


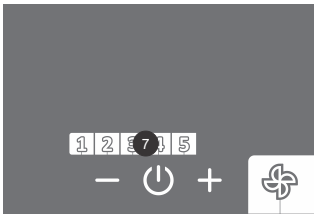
1. Hold (for 3 s) field no. **11**.



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

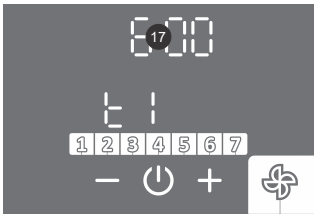
SELECTING TIMER MODE OF OPERATION



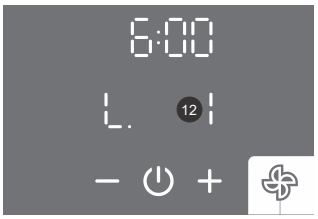


5. Field no. **7** starts to flash.
6. By pressing **+** or **–** select between three options of timer modes of operation:
   - timer mode of operation for the whole week (in field no. **7** the numbers 1 to 7 flash),
   - timer mode of operation for the period between Monday and Friday and from Saturday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

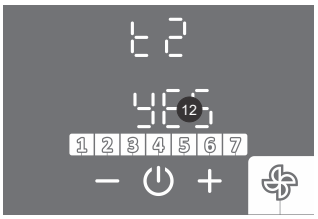
TIMER MODE OF OPERATION FOR THE ENTIRE WEEK



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 **+** or **–** set the speed of the fan during the first time point t1. You can select between three levels of speed (L. 1 – low speed, L. 2 – medium speed, L. 3 – high speed). and shut-off (off).
13. Confirm the setting by pressing the ⏻ symbol.

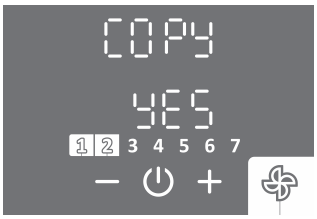


14. Field no. **12** starts to flash.
15. By pressing **+** or **–** select whether you want to complete the setting or set the next time point t2 (t3, t4) (YES - NO). If you select "no" the setting of the selected segment will be completed. If you select "YES" set the following time points (max 4) as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

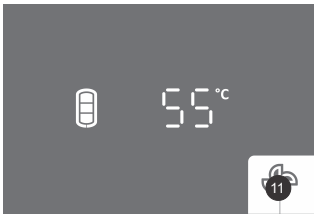
TIMER MODE OF OPERATION FOR THE PERIOD BETWEEN MONDAY AND FRIDAY AND FROM SATURDAY TO SUNDAY
To set the time points for the period Monday – Friday, use steps 8 to 16.

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.



17. 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.
18. Confirm the setting by pressing the ⏻ symbol.



- During the operation of the feature, field no. **11** is illuminated.
- The feature "TIMER - VENTILATION" can be deactivated by pressing field no. **11** (main display).

Example:
time point t1: time 06:00, set fan speed L. 3 (high speed),
time point t2: time 09:00, fan off (OFF),
time point t3: time 18:00, set fan speed L. 2 (medium speed),
time point t4: time 21:00, fan off (OFF).

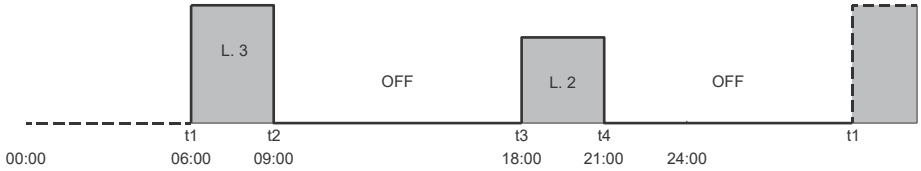
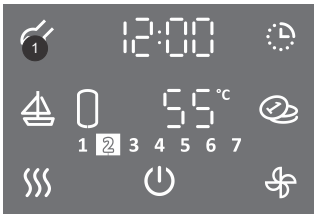


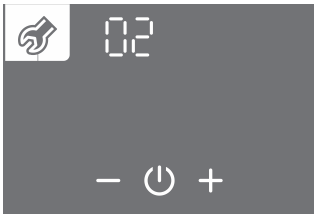
Fig. 11: Example of setting the timer – ventilation feature

c) EXTERNAL CONTROL OF THE "VENTILATION" FEATURE ("ECF" FEATURE)
In this case the "VENTILATION" feature is controlled by an external signal (e.g.: manual activation/deactivation with an external switch, automatic activation/deactivation, started by a sensor (CO_2 sensor etc. …).

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

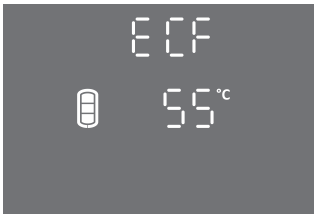
- Parameter number starts to flash.
- By pressing **+** or **–** select parameter number 03 (ECF).
- Confirm the setting by pressing the ⏻ symbol.

- By pressing **+** or **–** activate/deactivate the "ECF" feature (ON - activation, OFF - deactivation).
- Confirm the setting by pressing the ⏻ symbol.

- If you set the "ECF" 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 **+** or **–** enable contact 2.
- Confirm the setting by pressing the ⏻ symbol.

- By pressing **+** or **–** set the speed of the fan. You can select between three levels of speed (L. 1 – low speed, L. 2 – medium speed, L. 3 – high speed).
- 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 made (external signal for activation) the abbreviation **ECF** is displayed.
- When the feature is enabled and contact 2 - 2 is not made (external signal for deactivation) the abbreviation **ECF** flashes.

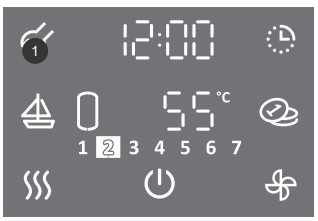
- If you press on the field displaying **ECF**, time is displayed.
- If you hold (for 3 s) the field displaying **ECF** you will enter the time settings.

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

PHOTOVOLTAICS MODE ("PV" FEATURE)

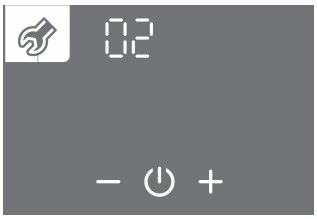
In the photovoltaics mode, you use the electric energy from your photovoltaic system. The system must allow at least 800 W of power.
If you don't want your heat pump to ever switch to the reserve mode of operation, disable the heater in the user menu (see chapter "CONNECTING THE EXTERNAL HEATER").

1. Connect external control via contact (2 - 2).
Connection is described in chapter "CONNECTION OF EXTERNAL CONTROL OF THE "PV", "LT", "ECF" 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 "PV" feature (ON - activation, OFF - deactivation).
- Confirm the setting by pressing the ⏻ symbol.

- If you set the "PV" 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 **+** or **–** enable 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.

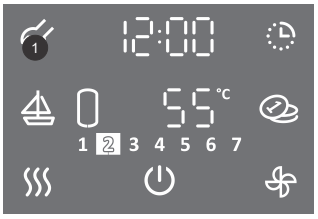
- When the feature is enabled and contact 2 - 2 is disconnected (when electric energy from the photovoltaic system is not available) the symbol ☼ flashes.

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

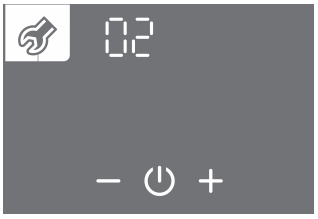
OPERATION WITH REGARD TO THE ELECTRIC ENERGY TARIFF ("LT" FEATURE)

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", "ECF" 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.



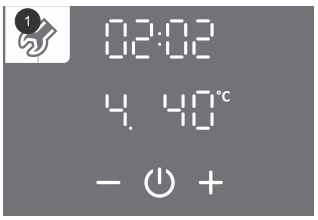
- Parameter group starts to flash.
- By pressing **+** or **–** select parameter group number 02.
- Confirm the setting by pressing the ⏻ symbol.

- Parameter number starts to flash.
- By pressing **+** or **–** select parameter number 02 (Lt).
- Confirm the setting by pressing the ⏻ symbol.

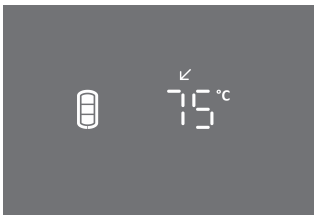
- By pressing **+** or **–** activate or deactivate the "LT" feature (ON - activation, OFF - deactivation).
- Confirm the setting by pressing the ⏻ symbol.
- If the "LT" feature is set to OFF (deactivation), the setting is completed after confirmation. You can exit the user menu by pressing field no. **1** (moves you one step back) or wait for the unit to exit the menu automatically after a while.

- By pressing **+** or **–** enable 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.



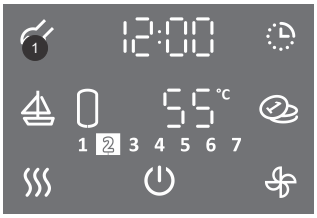
- When the feature is enabled and contact (2 - 2) is connected (low tariff) the symbol ↙ is on.
- When the feature is enabled and contact (2 - 2) is not connected (high tariff) the symbol ↙ flashes.

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

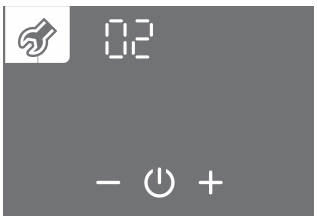
EXTERNAL CONTROL OF THE HEAT PUMP ("ECHP" FEATURE)

Use the "ECHP" feature when you have an additional “primary” source of heating of domestic water (central heating furnace etc.) in addition to the heat pump. The feature enables heating of domestic water by heat pump only when primary source heating is not available. The signal for the activation of heating domestic water by the heat pump is controlled by the “primary” source. When contact 2 - 2 is connected, domestic water is heated by the heat pump, and when the contact 2-2 is disconnected, the water is heated by the “primary” source of heating.
The set features that are tied to the operation of the heat pump’s fan operate unaffectedly also during the time when the water is heated by the “primary source”. If you have a timer set on the heat pump, the heating of water during the connected 2-2 contact will be carried out according to the timer settings.

1. Connect external control via contact (2 - 2).
Connection is described in chapter "CONNECTION OF EXTERNAL CONTROL OF THE "PV", "LT", "ECF" 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.

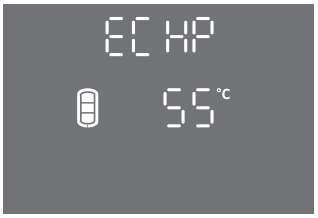


- Parameter group starts to flash.
- By pressing **+** or **–** select parameter number 02.
- Confirm the setting by pressing the ⏻ symbol.

- 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 + or – enable 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. However, features tied to the operation of the fan of the heat pump (e.g. ventilation) are enabled.
- If you press the field with the ECHP abbreviation, the clock appears.
- If you hold (for 3 s) the ECHP abbreviation, you 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", "ECF" AND "ECHP" FEATURES

In the junction box there is a clamp for connecting the contact for control of the "PV", "LT", "ECF" and "ECHP" features.

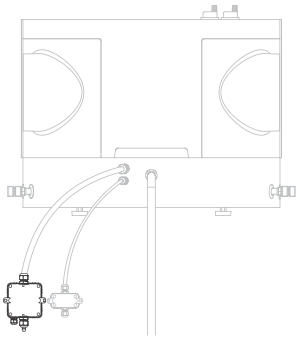


Fig. 12: Junction box for connecting external control of the "PV", "LT", "ECF" and "ECHP" features

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", "ECF" and "ECHP" features are controlled by connecting/disconnecting the contact 2 and 2 (pos. B, Fig. 13).
Only one of the "PV", "LT", "ECF" and "ECHP" features can be controlled at a time.

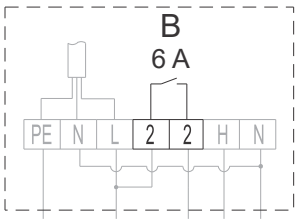


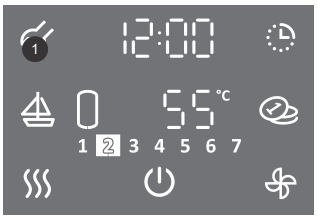
Fig. 13: Connection of a contact for controlling the "PV", "LT", "ECF" and "ECHP" features

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

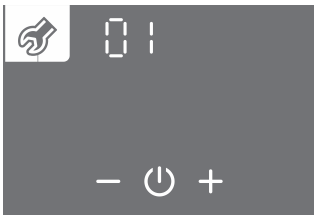
SETTING THE SPEED OF THE FAN

If you want to set the speed of the fan manually, be sure to take into account the aerodynamic characteristics of the fan in the heat pump (see chapter “DETERMINING PRESSURE DROPS IN THE PIPELINE SYSTEM FOR AIR INLET AND OUTLET”).
When the pressure drop is determined, select the mode in which the fan will operate. This determines the speed of the fan’s operation. The mode can be selected using the **diagram (Fig. 4)** showing the aerodynamic characteristics of the fan in relation to air flow and pressure drop in the pipeline system.
With the progression of aerodynamic characteristics from the lowest to the highest, the noise of the system progresses as well. Between the aerodynamic characteristics of 80 % and 100 % there is an area where increased noise level is detected.

The speed of the fan can be set 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 01.
- Confirm the setting by pressing the ⏻ symbol.

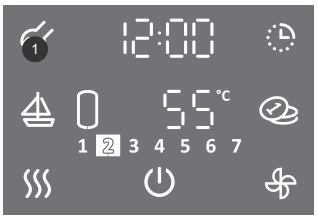
- Parameter number starts to flash.
- By pressing **+** or **–** select parameter number 03.
- Confirm the setting by pressing the ⏻ symbol.

- By pressing **+** or **–** set the speed of the fan from 40 to 100% or select automatic adjustment of the fan speed (Auto). Automatic adjustment of fan speed is not possible in TCA1ZVNT.
- 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.

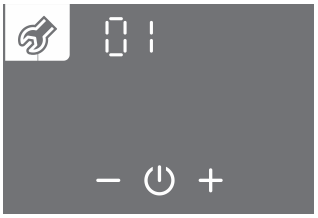
AUTOMATIC VENTILATION FEATURE

The purpose of this feature is to prevent condensation of air under the lid of the heat pump. Ventilation occasionally starts at air temperatures exceeding 25 °C.

The automatic ventilation feature can be enabled/disabled 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 01.
- Confirm the setting by pressing the ⏻ symbol.

- Parameter number starts to flash.
- By pressing **+** or **–** select parameter number 02.
- Confirm the setting by pressing the ⏻ symbol.

- By pressing **+** or **–** select whether the automatic ventilation feature should be on (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.

CONNECTING AN EXTERNAL ELECTRIC HEATER

The heat pump enables you to connect an external heater with a max. power of 2000 W. In the junction box there is a clamp ready to connect the heater (pos. C, Fig.14).

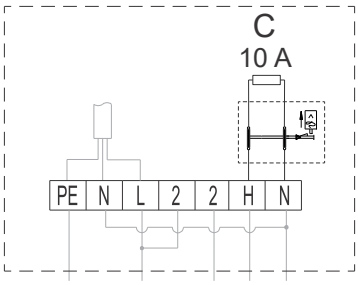


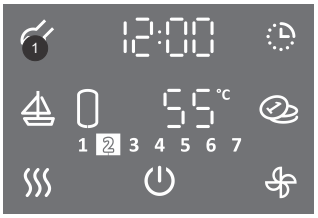
Fig. 14: Connecting electric heater (position C)

The thermostat on the hot water tank must be set to the maximum value. If the set temperature of the heat pump exceeds the temperature set on the thermostat of the hot water tank, the temperature regulation is taken over by the thermostat of the hot water storage tank.

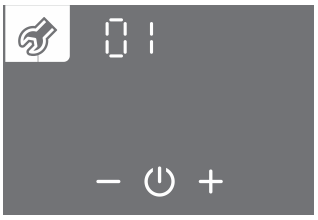
⚠ **Connection must be carried out by a trained professional! Before connecting the electric heater, the device must be disconnected from the power supply network!**

⚠ **In case of connecting the electric heater in the hot water storage tank, it must be protected by a thermal cut-off!**

The heater is enabled/disabled in the user menu.
Before changing the parameter, the "TURBO" and "HOT" features must be switched off (see chapters ""TURBO" FEATURE" and ""HOT" FEATURE").



- 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.



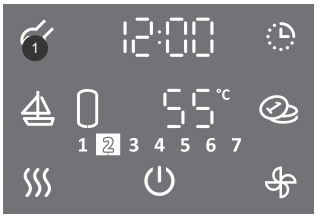
- Parameter group starts to flash.
- By pressing **+** or **–** select parameter group number 01.
- Confirm the setting by pressing the ⏻ symbol.

- Parameter number starts to flash.
- By pressing **+** or **–** select parameter number 09.
- Confirm the setting by pressing the ⏻ symbol.

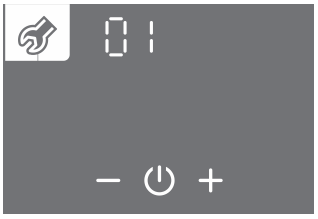
- Parameter value starts to flash.
- By pressing **+** or **–** select if the heater is connected (YES - NO).
- Store the setting by pressing the ⏻ symbol.
- You can exit the user menu by pressing field no. **1** (moves you one step back) or wait for the unit to exit the menu automatically after a while.

MANUAL RESERVE MODE OF OPERATION (MODELS WITH A CONNECTED AND ENABLED ELECTRIC HEATER)

If you want to disable the operation of the heat pump and heat water only using your electric heater, activate the manual reserve mode of operation.
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.



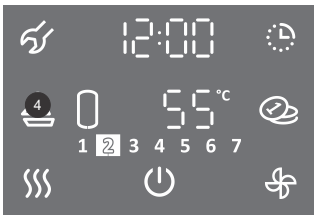
- Parameter group starts to flash.
- By pressing **+** or **–** select parameter group number 01.
- Confirm the setting by pressing the ⏻ symbol.

- Parameter number starts to flash.
- By pressing **+** or **–** select parameter number 08.
- Confirm the setting by pressing the ⏻ symbol.

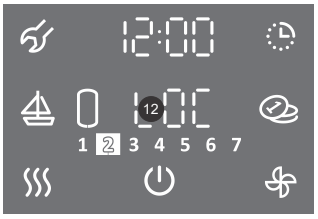
- By pressing **+** or **–** enable (ON) or disable (OFF) the manual mode of operation.
- Store the setting by pressing the ⏻ symbol.
- You can exit the user menu by pressing field no. **1** (moves you one step back) or wait for the unit to exit the menu automatically after a while.
- When the manual 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

Clean the exterior of the heat pump with a soft cloth and mild liquid detergents. Do not use cleaning agents that contain alcohol or abrasives. If the heat pump is exposed to dust the evaporator coils can clog, which has a detrimental effect on its operation.

Despite careful production and control, certain problems and faults in the heat pump's operation may arise, which usually require an intervention of an authorised service provider.

Before reporting a fault, make sure to check the following:
- Is the power supply in order?
- Is outlet air obstructed (evaporator may be frozen)?
- Is the ambient temperature too low (evaporator may be frozen)?
- Are there audible sounds coming from the compressor and fan?
- Is there uncontrolled inlet of air from the hot water storage tank?

⚠ **Please do not attempt to fix any defects on the heat pump by yourself. Call the nearest authorised service provider instead.**

OPERATION FAULTS

Despite careful production and control, problems and faults in the heat pump's operation may arise, which require an intervention of an authorised service provider.

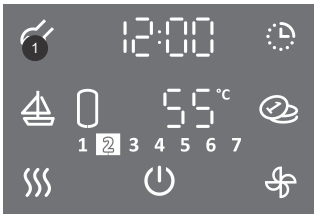
Indication of errors

- 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.

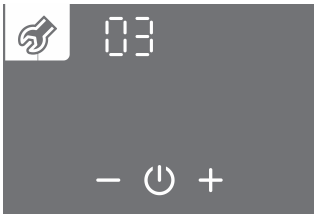
Error	Error description	Possible cause of error	Functioning of the device in case of error	Solution
E02	Error of the temperature sensor for domestic water.	Temperature sensor is not connected, bad electrical connection in the clamp.	Water heating turns off.	Have a trained professional check the connection of the temperature sensor. You are advised to first call the installer of your device. The error code switches off automatically once the cause is eliminated.
		Temperature sensor fault.	Water heating turns off.	Call the authorised service provider. The error code switches off automatically once the cause is eliminated.
E03	Error of the temperature sensor at the condenser outlet.	Temperature sensor fault.	Device continues to operate, basic function is guaranteed. Circulation pump works at maximum power. This decreases the energy efficiency of domestic water heating.	Call the authorised service provider. The error code switches off automatically once the cause is eliminated.
E04	Error of the temperature sensor at the condenser inlet.	Temperature sensor fault.	Device continues to operate, basic function is guaranteed. Circulation pump works at maximum power. This decreases the energy efficiency of domestic water heating.	Call the authorised service provider. The error code switches off automatically once the cause is eliminated.
E05	/			
E06	Error of the temperature sensor of the evaporator.	Temperature sensor fault.	Device continues to operate, basic function is guaranteed in the narrow temperature zone.	Call the authorised service provider. The error code switches off automatically once the cause is eliminated.
E07	Error of the temperature sensor of inlet air.	Temperature sensor fault.	Device continues to operate, basic function is guaranteed in the narrow temperature zone of inlet air.	Call the authorised service provider. The error code switches off automatically once the cause is eliminated.
E08	/			
E09	Domestic water overheating.	Temperature in the tank is higher than 90 °C.	Water heating turns off.	When the water is used up or the temperature in the tank drops to or below the set value, the warning switches off automatically. In case the overheating code appears repeatedly, call the authorised service provider.
E10	Unsuccessful defrosting cycle.	Not enough heat in the hot water tank for defrosting.	Automatic additional start-up of electric heater in the hot water tank (if connected). The heat pump and electric heater work simultaneously.	Error code switches off automatically after 20 minutes. The defrosting cycle repeats.
E11	Unsuccessful consecutive defrosting cycles.	Not enough heat in the hot water tank for defrosting.	Until the error is eliminated, the heating of water by the heat pump system is switched off. The electric heater in the hot water tank switches on (if connected).	Call the authorised service provider. The error code is switched off by the service provider.

Error	Error description	Possible cause of error	Functioning of the device in case of error	Solution
E12	Too low temperature of water in the condenser.	The condenser sensor sensed too low water temperature. Danger of freezing in the condenser.	Circulation pump operates to prevent the freezing of water in the condenser.	After switching off the circulation pump the error code switches off automatically.
E13	No circulation of water through the condenser.	Heat pump's water system is not filled with water.	Heating of water with the heat pump's system switches off. Electric heater switches on (if connected).	Have a trained professional fill the heat pump's water system with water. You can delete the error code in the user menu (see chapter "DELETING ERROR WARNINGS").
		Heat pump's water system is not deaerated.	Heating of water with the heat pump's system switches off. Electric heater switches on (if connected).	Have a trained professional deaerate the heat pump's water system. You can delete the error code in the user menu (see chapter "DELETING ERROR WARNINGS").
		One or more of stop valves of the water system is in closed position.	Heating of water with the heat pump's system switches off. Electric heater switches on (if connected).	Open the stop valves of the heat pump's water system to enable circulation of water. You can delete the error code in the user menu (see chapter "DELETING ERROR WARNINGS").
		Pressure in the heat pump's water system is too low.	Heating of water with the heat pump's system switches off. Electric heater switches on (if connected).	Have a trained professional fill the heat pump's water system to the appropriate pressure. You can delete the error code in the user menu (see chapter "DELETING ERROR WARNINGS").
		Circulation pump defect.	Heating of water with the heat pump's system switches off. Electric heater switches on (if connected).	Call the authorised service provider. You can delete the error code in the user menu (see chapter "DELETING ERROR WARNINGS").
E14	Pressure in the heat pump's cooling system is too high.	Heat pump's water system is not deaerated.	Heating of water with the heat pump's system switches off. Electric heater switches on (if connected).	Have a trained professional deaerate the heat pump's water system. The error code switches off automatically once the cause is eliminated.
		Pressure in the heat pump's water system is too low.	Heating of water with the heat pump's system switches off. Electric heater switches on (if connected).	Have a trained professional fill the heat pump's water system to the appropriate pressure. The error code switches off automatically once the cause is eliminated.
		Circulation pump defect.	Heating of water with the heat pump's system switches off. Electric heater switches on (if connected).	Call the authorised service provider. The error code switches off automatically once the cause is eliminated.
E15	Several consecutive shutoffs of heat pump due to excessive pressure of the heat pump's cooling system.	Repeating error E14	Heating of water with the heat pump's system switches off. Electric heater switches on (if connected).	You can delete the error code in the user menu (see chapter "DELETING ERROR WARNINGS").
E16	Defrosting protection.	During the defrosting cycle, the condenser may freeze.	Heating of water with the heat pump's system switches off. Electric heater switches on (if connected).	You can delete the error code in the user menu (see chapter "DELETING ERROR WARNINGS").
E17	Heat pump's cooling system error.	Insufficient quantity of coolant in the heat pump system.	Heating of water with the heat pump's system switches off. Electric heater switches on (if connected).	You can delete the error code in the user menu (see chapter "DELETING ERROR WARNINGS"). If the error code appears repeatedly, call the authorised service provider.

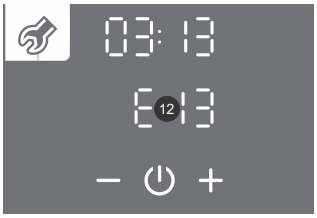
DELETING ERROR WARNINGS

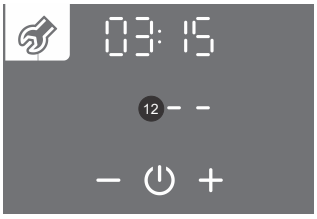


- To enter the user menu hold (3 s) field no. **1**.
- By pressing field no. **1** again, you can move by one step back on each step, thus exiting the user menu.



- 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 OF THE APPLIANCE

Type		TCA1ZVNT + VLG 300B1-1G
Profile of use		XL
Energy efficiency class [1)]		A+
Energy efficiency of the heating of water ηwh [1)]	%	149,2
Annual consumption of electric energy [1)]	kWh	1122
Daily consumption of electric energy [1)]	kWh	5,261
Set thermostat temperature	°C	55
Level of noise power indoors / Sound pressure at 1m [3)]	dB (A)	59/48
Smart value		0
Storage volume	l	276,0
Mixed water at 40 °C V40 [1)]	l	411
Reference surface area of heat exchanger	m^2	2,5
Technical properties		
COP_{DHW} A20 / W10-55 [1)]		3,6
Heating time A20 / W10-55 [1)]	h:min	08:58
Consumption of energy at heating A20 / W10-55 [1)]	kWh	3,66
Consumption of energy at selected exhaust cycle A20 / W10-55 [1)]	kWh	5,27
COP_{DHW} A2 / W10-55		2,3
COP_{DHW} A7 / W10-55		3,0
COP_{DHW} A14 / W10-55		3,5
Heating power A20 / W35 [2)]	kW	1,75
COP A20 / W35 [2)]		4,36
Heating power A20 / W45 [2)]	kW	1,65
COP A20 / W45 [2)]		3,61
Heating power A20 / W55 [2)]	kW	1,54
COP A20 / W55 [2)]		3,00
Heating power A20 / W65 [2)]	kW	1,46
COP A20 / W65 [2)]		2,51
Standby power [1)]	W	28,9
Coolant		R134a
Coolant quantity	kg	0,450
Global warming potential		1430
Carbon dioxide equivalent	t	0,644
Operation range - air temperature	°C	-7 / 35
Maximum temperature of domestic water heated by heat pump	°C	65
Nominal volume flow rate of air	m^3/h	330
Flow rate of water through heat exchanger (PWM regulation)	l/h	200 - 400
Maximum pressure of water in pipeline connection	MPa (bar)	1 (10)
Electrical characteristics		
Nominal electr. power of compressor	W	475
Maximum connection power [4)]	W	2750
Maximum allowed power of electric heater	W	2000
Voltage / frequency	V/Hz	230/50
Electrical protection	A	16
Level of moisture protection		IP24
Connection dimensions		
Height	mm	550
Width	mm	750
Depth	mm	730
Connections on heat pump (left and right side)		G3/4
Dimensions of air connections	mm	Ø160
Net weight	kg	41

[1)] at inlet air temperature of 20 °C, 58% humidity and entry temperature of water 10 °C heating of water to 55 °C in accordance with the EN16147 standard
[2)] in accordance with EN14511:2018
[3)] as per EN12102:2013
[4)] version with heater

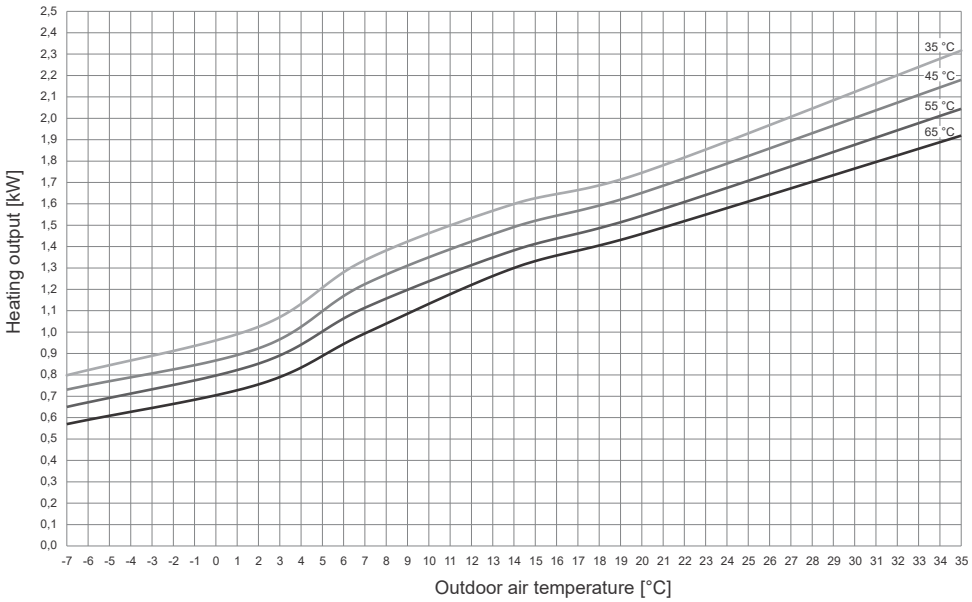


Diagram 1: Heating power in accordance with EN14511

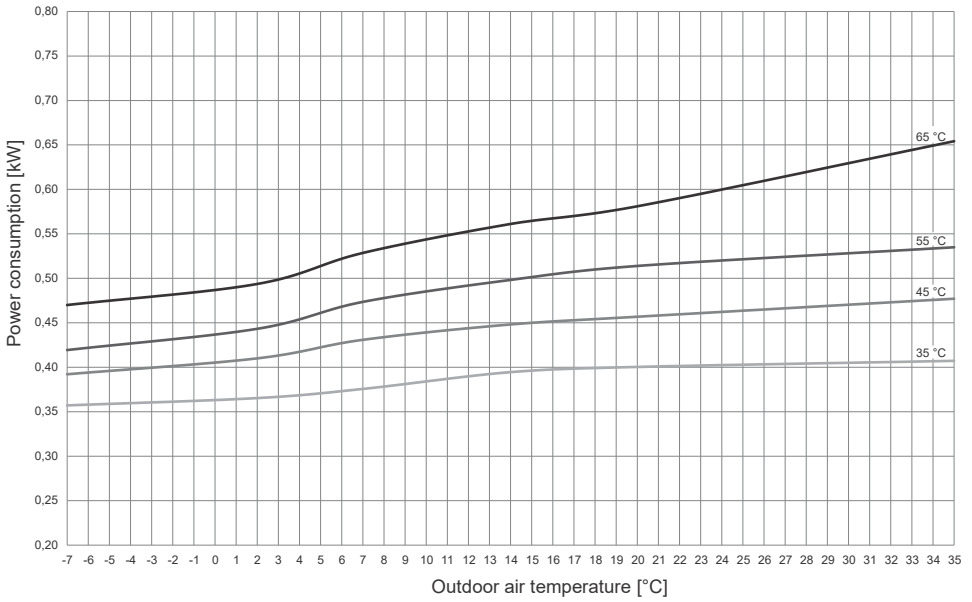


Diagram 2: Consumption of electrical power in accordance with EN14511

WE RESERVE THE RIGHT TO MAKE CHANGES THAT DO NOT AFFECT THE FUNCTIONALITY OF THE APPLIANCE.
Instructions for use are also available on our website http://www.tiki.si.

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