

Operation and Installation Manual

EcoWell

Sanitary Water Heat Pump

- with 276 l enamelled tank and solar connections
- with 208 l enamelled tank without solar connections



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NOTICE

Do not release R134a into the atmosphere:
R134a is a fluorinated greenhouse gas according to Kyoto Protocol and has a global warming potential (GWP) of 1430.

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1 Safety

1.1 Intendend use

Your WATERKOTTE sanitary water heat pump is used for space heating and cooling, and heating of domestic water.

Project planning of the heat source system must be performed in compliance with the technical information provided by WATERKOTTE for layout of heat source systems.



NOTICE

Risk of total loss!

The device may only be switched on when the hydraulic circuits are **completely filled and vented**, and all electrical connections are properly.

To prevent injury to the user, other people, or property damage, the following instructions must be followed. Incorrect operation due to ignoring of instructions may cause harm or damage.

Install the unit only when it complies with local regulations, by-laws and standards. Check the main voltage and frequency. This unit is only suitable for earthed sockets, connection voltage 220 – 240 V ~ / 50Hz.

The following safety precautions should always be taken into account:

Be sure to read the following WARNING before installing the unit.

Be sure to observe the cautions specified here as they include important items related to safety.

After reading these instructions, be sure to keep it in a handy place for future reference.

1.2 Basic safety precautions

1.2.1 Keep information available

In addition to the operating manual, also furnish operating instructions in terms of Labour Protection Law and Work Equipment ordinance.

Keep all safety and operating signs on the heat pump in fully legible condition at all times. Replace damaged or illegible signs immediately.

1.3 Before initial use

Before initial use of your WATERKOTTE sanitary water heat pump, familiarise yourself with:

- Operating and control elements of your WATERKOTTE heat pump
- Equipment of heat pump
- Operation of heat pump
- Immediate surroundings of heat pump
- Safety devices of heat pump

Before initial start, perform the following steps:

- Ensure that all safety devices are installed and function as intended.
- Check heat pump for visible damage. Remedy any detected defects immediately. Heat pump must be in perfect condition during operation!
- Ensure that only authorised personnel is in the work area of the heat pump and that no other persons are endangered when heat pump is started.
- Remove all objects and other materials that are not required for operation of the heat pump from the work area of the heat pump.

1.3.1 Environmental protection

- Observe the regulations regarding waste avoidance and proper waste recycling or disposal when performing any kind of work on and with the heat pump.
- Ensure that particularly during installation and maintenance work, as well as when placing out of operation, pollutants such as grease, oil, refrigerant, solvent- containing cleaning fluids, etc. do not contaminate the ground or enter the sewer system!
These materials must be collected, stored, transported and disposed of in appropriate containers.

1.3.2 Modifications and repairs on the heat pump

For safety reasons, no unauthorised modifications shall be performed on the heat pump.

Thus, all intended modifications are subject to written approval by WATERKOTTE.

Use only original spare parts from WATERKOTTE.

Original spare parts are specially designed for your heat pump. Externally procured parts provide no guarantee that they are designed and manufactured in compliance with relevant usage and safety requirements.

Parts and special equipment not delivered by WATERKOTTE are not approved for use on the heat pump.

1.4 Hazards

Observe the following points to avoid life-threatening injuries and damages to the heat pump during operation:

DANGER

Warning! Risk of electric shock!

Do not use water or other liquids to clean the unit!

Keep all electrical supply units locked at all times!

Any work on the electrical equipment of the heat pump shall only be performed by professional electricians!

DANGER

Warning! Danger of suffocation!

The packaging is not a toy. Dispose of packaging in an environmentally friendly.

DANGER

Warning! The unit is no intended for use by children

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

DANGER

RISK OF DEATH!

Toxic combustion gases - eg. For example, toxic carbon monoxide may be drawn from the chimney or duct into the living spaces.

When operating the DHW heat pump and a room-air-dependent fireplace in the same room or in the ventilation system, great care should be taken.

Refer to the valid fireplace ordinance and ask in case of doubt your competent chimney sweep.

WARNING

Risk of burns!

During operation, surface temperatures (compressor and pressure line) can climb above 100 °C or drop below 0 °C.

Do not remove housing cover during operation!

Allow heat pump to cool down before removing cover.

⚠ WARNING**Risk of injury!**

Risk of chemical burns when skin comes in direct contact with lubricant leak.
Wear suitable clothing when performing maintenance work on the heat pump!

⚠ WARNING**Risk of injury in case of leakage in cooling circuit!**

Skin contact with refrigerant may cause freezing of tissue and frostbites. High vapour concentrations can cause headaches, dizziness, fatigue, nausea and even unconsciousness. Irregular heartbeat (arrhythmia).
Avoid contact with refrigerant! Do not expose to heat, sparks, naked light or other ignition sources!

⚠ WARNING**Do not put your fingers or others into the fan, or evaporator.**

The inside parts of the heat pump may run at high speed or high temperature, they could cause serious injury. Do not remove the grills on the fan outlet and top cover.

The hot water probable need to mix with cold water for terminal usage, too hot water (over 50 °C in the heating unit may cause injury).

The installation height of power supply should be over 1.8m, if any water may spatter, the unit can be safe from water.

NOTICE**Risk of total loss!**

The heat pump is not a toy!

Keep children away from the heat pump, in particular from the operating input device (touch screen). Read the accompanying technical manual.

NOTICE**Electrostatic charge!**

Electronic components can be damaged by electrostatic processes.
Ground yourself before touching electronic components.

NOTICE**Risk of total loss!**

Repeated restart of heat pump can result in total loss!

In case of heat pump failure, before restart an inspection by qualified and authorised personnel must be performed.

NOTICE**Risk of total loss!**

The device may only be switched on when the hydraulic circuits are **completely filled and vented**, and all electrical connections are properly.

1.5 Specific types of hazards

To avoid damage to machine or life-threatening injuries during installation of machine, the following points must be observed:

- Machine parts that are improperly placed or incorrectly attached can fall down or overturn.
- Sharp-edged machine parts that are still exposed and accessible can result in injury.
- Incorrectly installed lines (e.g. insufficient bending radius) can cause smouldering and cable fires.
- Do not tear off the labels on the unit. The labels are for the purpose of warning or reminding, keeping them can ensure your safe operations.
- In time of transport, the heat pump must be placed in the upright position and can be leant up to 35° in all directions upon exception.
- The heat pump must not be placed in a closed space, containing corrosive and explosive materials.
- The connection of the heat pump to the power supply must be performed in accordance with the standards for electrical installations. An appliance for the disconnection from the electrical network must be installed between the heat pump and the electrical network in accordance with the national installation regulations.
- It is obligatory to install a safety valve with a rated pressure of 0.6 MPa (6 bar) on the inlet pipe of the heat pump of the closed pressure system to prevent the elevation of pressure in the tank by more than 0.1 MPa (1 bar) above the rated pressure.
- Water may drip from the outlet opening of the safety valve, so the outlet opening should be set to atmospheric pressure. The outlet of the safety valve should be installed facing downwards and in a non-freezing area. To ensure proper functioning of the safety valve, the user should perform regular controls to remove limescale and make sure the safety valve is not blocked. Do not install a stop valve between the heat pump and the safety valve, because it will impair the pressure protection of the storage tank!
- Elements of the electronic control unit are under voltage even after the heat pump has been switched off (9).
- The hot water tank is protected in case of failure of the operating thermostat with an additional thermal cut-out. In case of thermostat failure water in the storage tank may reach the temperature of up to 100 °C in accordance with safety standards. The possibility of such temperature overload should be taken into consideration in the execution of plumbing.
- Should you choose to disconnect the power, the storage tank should be drained thoroughly before the onset of freezing conditions.
- Water from the storage tank is drained through the cold water inlet pipe of the tank. For this purpose, a special fitting (T-fitting) with an outlet valve must be mounted between the safety valve and the cold water inlet pipe.

- Please, do not try to fix any defects of the heat pump on your own. Call the nearest authorised service provider.
- Connection of the heat pump to the same pipeline with the kitchen vent, the ventilation system of smaller apartments is not allowed.
- The decline in temperature of an additional heating source and the enabled water circulation via the heat exchanger can cause an uncontrolled removal of heat from the water tank. When connecting to other heating sources it is necessary to ensure proper temperature regulation of the additional heating source.
- When connecting to sources of solar energy as an external heating source the aggregate of the heat pump must be disconnected. The combination of both heating systems can lead to overheating of water and consequently to excessive pressure.
- Circulation leads to additional heat loss in the water tank.

1.6 Operator's duty of care

National regulations must be applied and complied with when commissioning and operating this heat pump. The system operator is responsible for this.

Your WATERKOTTE heat pump has been designed and built on the basis of a risk analysis and after careful selection of standards to be observed.

Thus, your heat pump is state-of-the-art and provides for maximum safety. In practice, however, this safety can only be ensured by taking all necessary measures. As operator of the heat pump it is your responsibility to plan these measures and oversee their implementation.

You must ensure that:

- The heat pump is only used as intended (see also chapter 1.1).
- The heat pump is only operated in perfect, fully functional condition and safety devices are checked regularly to ensure that they are working properly.
- The operating manual is available in perfect condition at the heat pump at all times.
- The heat pump is operated, maintained and repaired only by adequately qualified and authorised personnel.
- None of the safety and warning notices on the heat pump are removed or damaged.

This storage tank has been manufactured in compliance with the relevant Standards, which allow the manufacturer the use of the CE sign. The technical characteristics of the product are listed on the label attached to the protective cover.

The connection of the storage tank with the heat pump to the plumbing and power networks must be carried out by qualified staff only. Any intervention performed on the tank during service or removal of limescale must be carried out by an authorised service provider. Be especially careful when following instructions for potential errors and safe use of the heat pump.

Store this booklet for times of doubt upon the functioning or maintenance. The installation manual is available on our webpage <http://www.gorenje.com> or the webpages per country in the service and support section.

Authorised maintenance personnel are available for occasional maintenance. They will help you with their vast experience.

The hot water storage tank is designed in a manner which allows using the following heating sources:

- Central heating storage,
- Solar power,
- Electrical heater.

2 Functional principle of heat pump



The hot water heat pump is one of the most economical systems to heat the water for family domestic use. Using free renewable energy from the air, the unit is highly efficient with low running costs. Its efficiency can be up to 3 ~ 4 times more than conventional gas boilers or electrical heaters.

This unit is designed for production of sanitary water in households and at premises where daily consumption of hot water (50 °C) does not exceed 400 l to 700 l. The set temperature should suffice 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 or increase the number of operating hours. Because during its operation the heat pump cools its surroundings, the usefulness of the heat pump is doubled (heating water - cooling air). The operation of the heat pump is completely automatic.

The appliance must be connected to water supply mains and to the power supply grid. The air intake and air exhaust may also be provided by designing the inlet and outlet drain from and to the adjacent room. For easier control, it is recommended to leave enough room above the appliance (Fig. 2). The heat pump may not be used for purposes other than those defined in these Instructions. The unit is not designed for industrial use or 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.

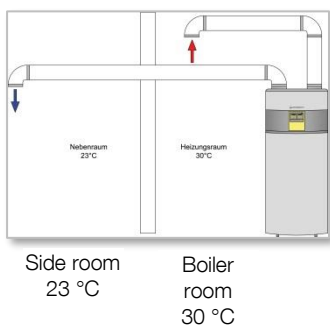
The instructions for use are a component and important part of this product and must be delivered to the customer. Read the warnings carefully, as they contain important directions related to safety during operation, use and maintenance.

Keep these Instructions for later use.

The marking of the heat pump is stated on the nameplate located on the bottom side of the unit, between both inlet pipes for sanitary water.

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

2.1 Waste heat can be useful heat



Units can be installed near the kitchen, in the boiler-room or the garage, basically in every room which has a large number of waste-heat so that the unit has the higher energy efficiency even with very low outside temperatures during the winter.



RISK OF DEATH!

Toxic combustion gases - eg. For example, toxic carbon monoxide may be drawn from the chimney or duct into the living spaces.

When operating the DHW heat pump and a room-air-dependent fireplace in the same room or in the ventilation system, great care should be taken.

Refer to the valid fireplace ordinance and ask in case of doubt your competent chimney sweep.

NOTICE

The heat pump must not be placed in a closed space, containing corrosive and explosive materials.

2.2 Hot water and dehumidification



Units can be placed in the laundry room or clothing room. When it produces hot water it lowers the temperature and dehumidifies the room as well. The advantages can be experienced particularly in the humid season.

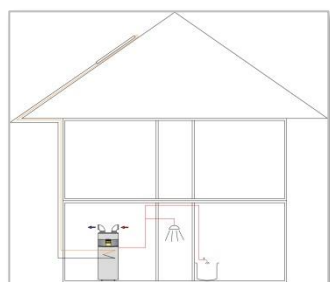
2.3 Storage room cooling

Units can be placed in the storage room as the low temperature keeps the food fresh.

2.4 Hot water and fresh air ventilation

Units can be placed in the garage, gym, basement etc. When it produces hot water, it cools the room and supplies fresh air.

2.5 Compatible with different energy sources



The EcoWell 300 units can be compatible with solar panels, external heat pumps, boilers or other different energy sources.

2.6 Ecological and economical heating

Units are the most efficient and economical alternative to both fossil fuel boilers and heating systems. By making use of the renewable source in the air, it consumes much less energy.

2.7 Other features

Enamelled tank and a magnesium stick assure the durability of components and the tank.

Highly efficient compressor with the R134a refrigerant.

Electrical element available in the unit as a back-up, assuring constant hot water even in extreme cold winters.

2.8 Scope of delivery

Before starting the installation, please make sure that all parts are found inside the box.

Description	Unit
EcoWell WATERKOTTE sanitary water heat pump	1
Operation and Installation Manual	1

3 Storage and transportation

The heat pump may only be stored in a vertical position in a dry and clean room.

With this type of handling, it is advised that the maximum permissible inclination angle of 35 degrees is not exceeded. If transport in an inclined position cannot be avoided, the unit should be taken into operation one hour after it has been moved into final position



DANGER:

Due to the high center of gravity, low overturning moment, the unit must be secured against tipping over.

4 Dimensions and connections

4.1 EcoWell 200 / 300

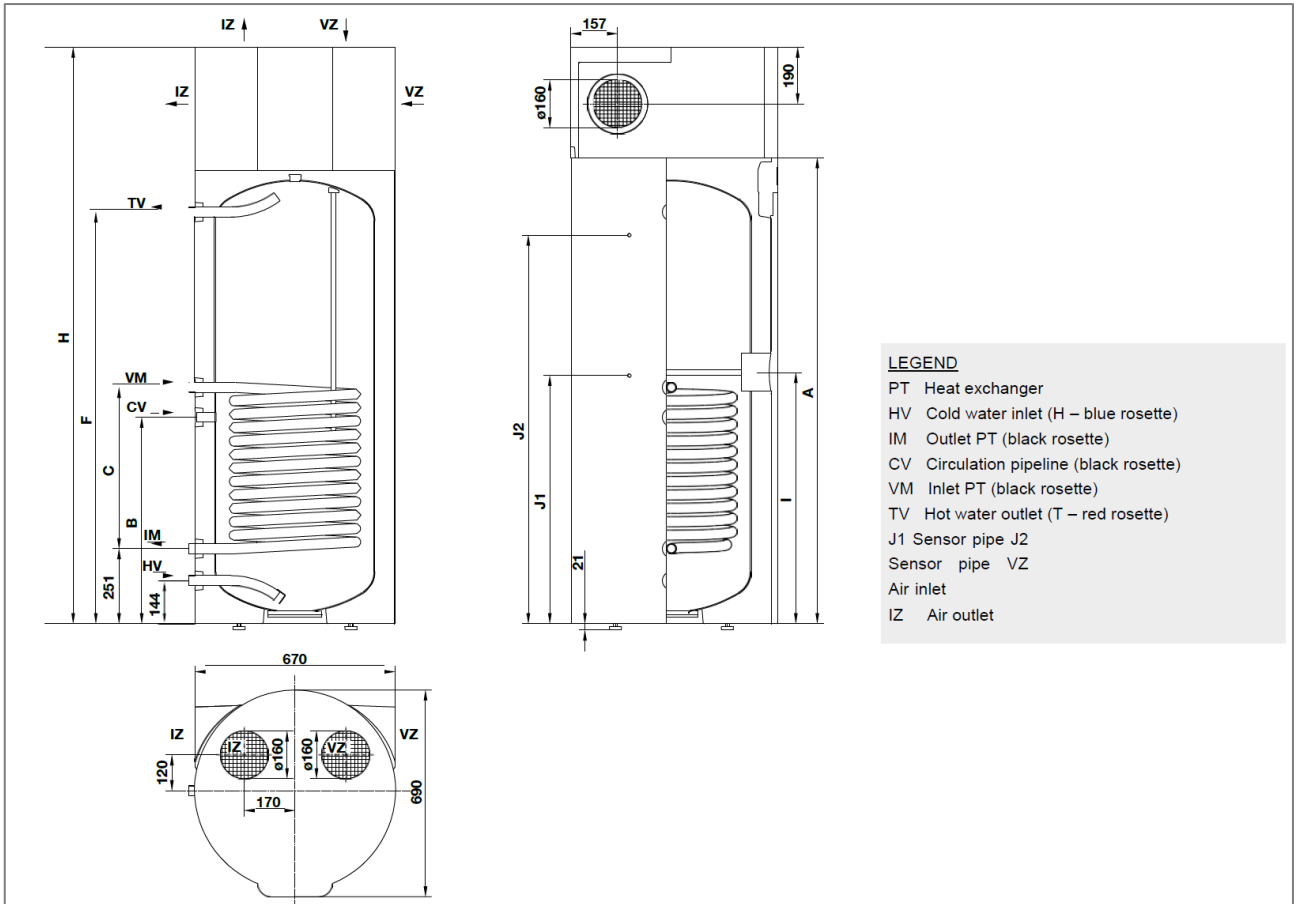


Figure 1: Dimensions EcoWell (series 200 without heat exchanger)

	EcoWell 200	EcoWell 300
A (mm)	1170	1560
B (mm)	580	690
C (mm)	/	1020
F (mm)	975	1375
H (mm)	1540	1930
l (mm)	615	840
J1 (mm)	/	790
J2 (mm)	/	1300
HV	G1	G 1
IM	/	G 1
CV	G3/4	G3/4
VM	/	G 1
TV	G 1	G 1

4.2 Installation

NOTICE

To ensure a safe installation, note the following points:

- Do not install the unit yourself. Incorrect installation could cause injury due to fire, electric shock, the unit falling or leakage of water. Consult the dealer from whom you purchased the unit or a specialized installer.
- Do not move/repair the unit yourself. If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard. Improper movement or repair on the unit could lead to water leakage, electrical shock, injury or fire.
- Install the unit securely in a place. When insufficiently installed, the unit could fall causing injury.
- The bearing surface should be flat to bear the weight of the unit and suitable for installing the unit without increasing noise or vibration.
- When installing the unit in a small room, please take measures (like sufficient ventilation) to prevent the asphyxia caused by the leakage of refrigerant.

NOTICE

ATTENTION:

- The one-way safety valve must be installed. If not, it could cause damage to the unit, or even hurt people. The set point of this safety valve is 0.7 MPa. For the installation place please refer to the pipeline connection sketch.
- The discharge pipe connected to the one-way safety valve is to be installed in a continuously downward direction and in a frost-free environment.
- The water may drip from the discharge pipe of the one-way safety valve and that this pipe must be left open to the atmosphere.
- The one-way safety valve is to be operated regularly to remove lime deposits and to verify that it is not blocked. Please beware of burn, because of the high temperature of water.
- In order to prevent damage, when operating the device in combination with a solar thermal system, the flow temperature of the solar system must be limited to 75 °C.
- The tank water can be drained through the drainage hole on the bottom of the tank.
- After all the pipes installed turn on the cold water inlet and hot water outlet to fill the tank. When there is water normally following out from water outlet, the tank is full. Turn off all valves and check all pipes. If any leakage, please repair.
- If the inlet water pressure is less than 0.15 MPa, a pressure pump should be installed at the water inlet. For ensure the long safety using age of tank at the condition of water supply hydraulic higher than 0.65MPa, a reducing valve should be mounted at the water inlet pipe.
- Filters are needed in the air inlet. If the unit is connected with ducts, filter in there must be put forward to the air inlet of duct.
- To fluently drain condensate water from evaporator, please install the unit at the horizontal floor. Otherwise, please make sure the drain vent is at the lowest

place. Recommending the inclination angle of unit to be ground should no more than 2 degree.

4.3 Environmental conditions for installation

When selecting the installation site, observe the minimum volume under consideration of the refrigerant applied (as per EN 378-1).

In the case of the EcoWell hot water heat pump, this amounts to 4.4 m³ of room volume.

The room must be dry. Room temperature should be between +5 °C and +25 °C. It must be ensured that the heat extracted from the room is always supplied.

4.4 Wall clearance for service works

Take into account when establishing the minimum clearances to walls and ceilings in the box below (for example, the exchange of magnesium anode).

4.5 Air inlet and outlet

If air inlet and/or outlet pipes are connected, portion airflow and capacity in heat pump unit will lose.

If the unit connects with air ducts it should be

- DN 160 mm for pipes
- or 160 mm internal diameter flexible hose.

Total length of the ducts should not be longer than 8 m or the maximum static pressure should not exceed than 60 Pa. Be in mind of bending site of the duct no more than 4 m.

- When cooled air is discharged through pipes, they should be provided with insulation.

4.6 Other heating sources – sensor installation

On the left side of the hot water storage tank are two openings (J1, J2), where the sensors for the control system of the connection of the hot water tank to other heating sources. The maximum diameter of the probe is 8 mm. The length of the sensor tube is 180 mm. Insert the sensor into the tube and attach it:

- if you install the sensor into a higher position, the thermostat will respond faster, the operation period of the circulation pump will be shorter, the difference between the water temperature in the storage tank and the temperature of the heating source after the shutdown of the thermostat will be higher. Consequently, the quantity and the temperature of hot water in the storage tank will be lower.
- if you install the sensor in a lower position, the operation period of the circulation pump will be longer, the difference between the water temperature in the storage tank and the temperature of the heating source after the shutdown of the thermostat will be lower. Consequently, the quantity and the temperature of hot water in the storage tank will be higher.

4.7 Installation of the heat pump

The heat pump can be used using the ambient air or air from other premises.

To prevent pressure depression in the building, fresh air must be regularly supplied to the premises. Refer to the calculation of the professional installer.

Note:

Each heat pump is factory-tested in detail. For this purpose, the heat pump is filled with water. Despite subsequent cleaning of the water connections, there may be slight harmless deposits on the connections. These do not represent a defect in the system.

4.8 Operation using ambient air

In this type of operation, the device heats domestic water using only the amount of energy generated by the air from the room where the device is installed. The heat pump must be installed in a dry, frost-free room, possibly in the vicinity of other heating sources with the temperature ranging between 7 and 35 °C and a minimum volume of 20 m².

For optimal performance of the heat pump, we recommend a sufficiently large and well ventilated room with the temperature ranging between 15 °C and 25 °C.

When selecting a place for installation, particular attention should be paid that the selected air intake location is dust free, because dust has adverse effects on the heat pump performance. Because pressure drop does not occur with the ambient air operation it is reasonable to reduce the fan speed from factory settings of 60 % to 40 % to reduce noise.

There are several inlet and outlet openings possible with this model (see figure).

Elbows are more suitable for ambient air operation and must be installed on the heat pump and turned so that they prevent the mixing of air.

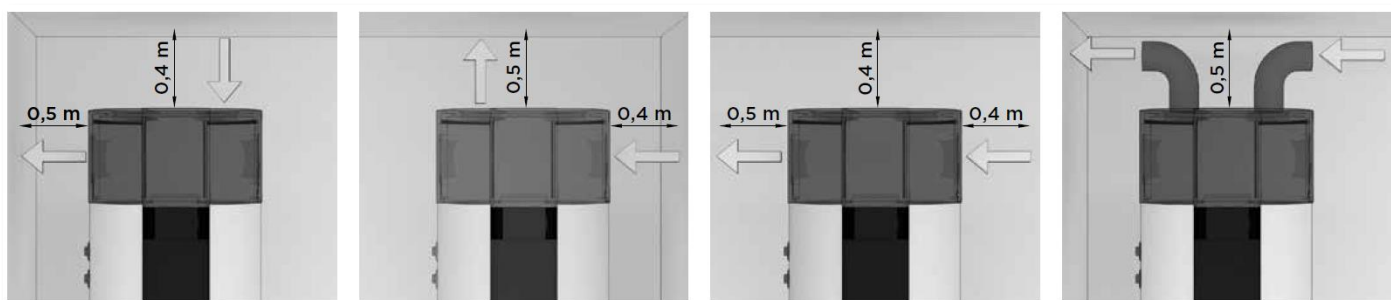


Figure 2: Options of inlet and outlet openings

4.9 Operation using air from other premises

In this type of operation, the heat pump uses air from other premises via a pipeline system. It is advisable to insulate the pipeline system to prevent the formation of condensate. In case of using air from outside, the external part must be covered so as to prevent the intrusion of dust or snow into the appliance.

To make sure the operation of the pump is effective at all times, you can install dampers to take air from the premises and then return it either to the premises or outside. The temperature of the taken air must correspond with the standards of the specification of the product (see table with technical characteristics).

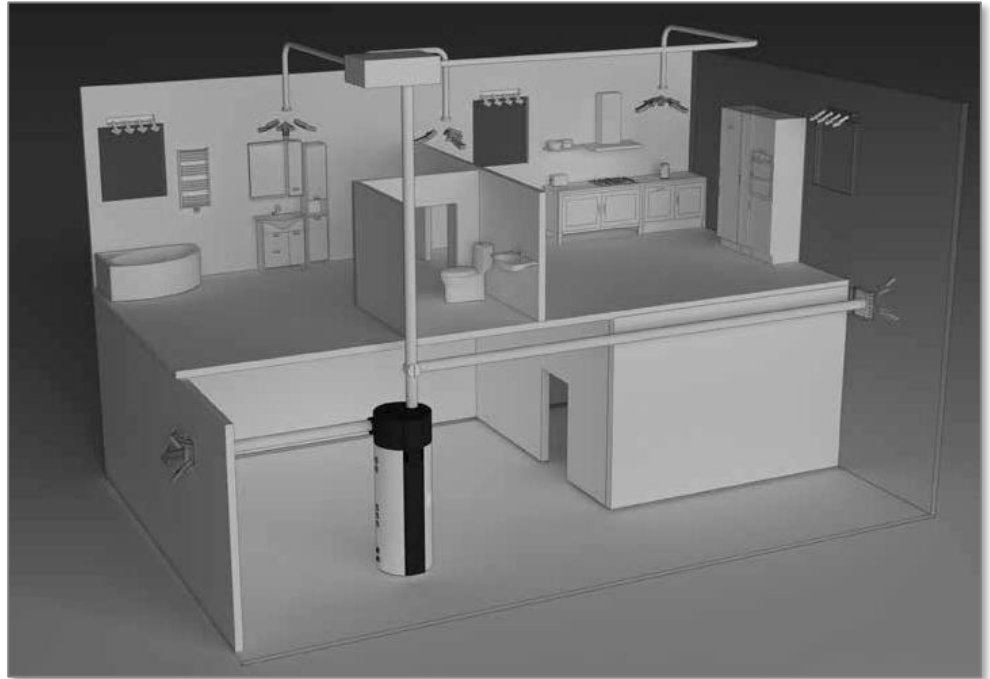


Figure 3: Operation using air from other premises

4.10 Determining pressure loss in the air inlet and outlet

The heat pump offers various installation options of connection of the air inlet and outlet pipelines. We recommend the connection options, which enable the simplest installation of the appliance to the pipeline system. When designing the pipeline system for air inlet and outlet to and from the heat pump it is essential to consider the aerodynamic characteristics of the heat pump fan, where the static pressure loss occurs.

The aerodynamic characteristics are displayed in a graph as a pressure drop in relation to airflow. The operating point of the heat pump fan is at 100 Pa of static pressure or at airflow of 330 m³. Working drop of static pressure in an air pipeline of heat pumps is considered $\Delta p = 100$ Pa. If the calculations show higher pressure drops, the fan speed can be increased. The increase of the fan speed is effective up to 80 %. The airflow does not increase above this level, therefore we advise against further increase for it will only cause higher levels of noise.

The diagram shows the following areas:

High-efficiency area - area of high airflow rates (over 300 m³) requires lower pressure drops (pipeline free or short pipeline) and fan settings to 60 % or 80 %.

Middle-efficiency area - area of middle airflow rates (between 220 and 300 m³/h), 40 % fan settings, minimum pressure drop, 60 % or 80 % of settings and pressure drops between 50 and 300 Pa.

Expanded area for higher ambient temperatures – a wider range of settings and high pressure drops. These settings may be in use only with air temperature over 20 °C, otherwise an efficiency decline occurs.

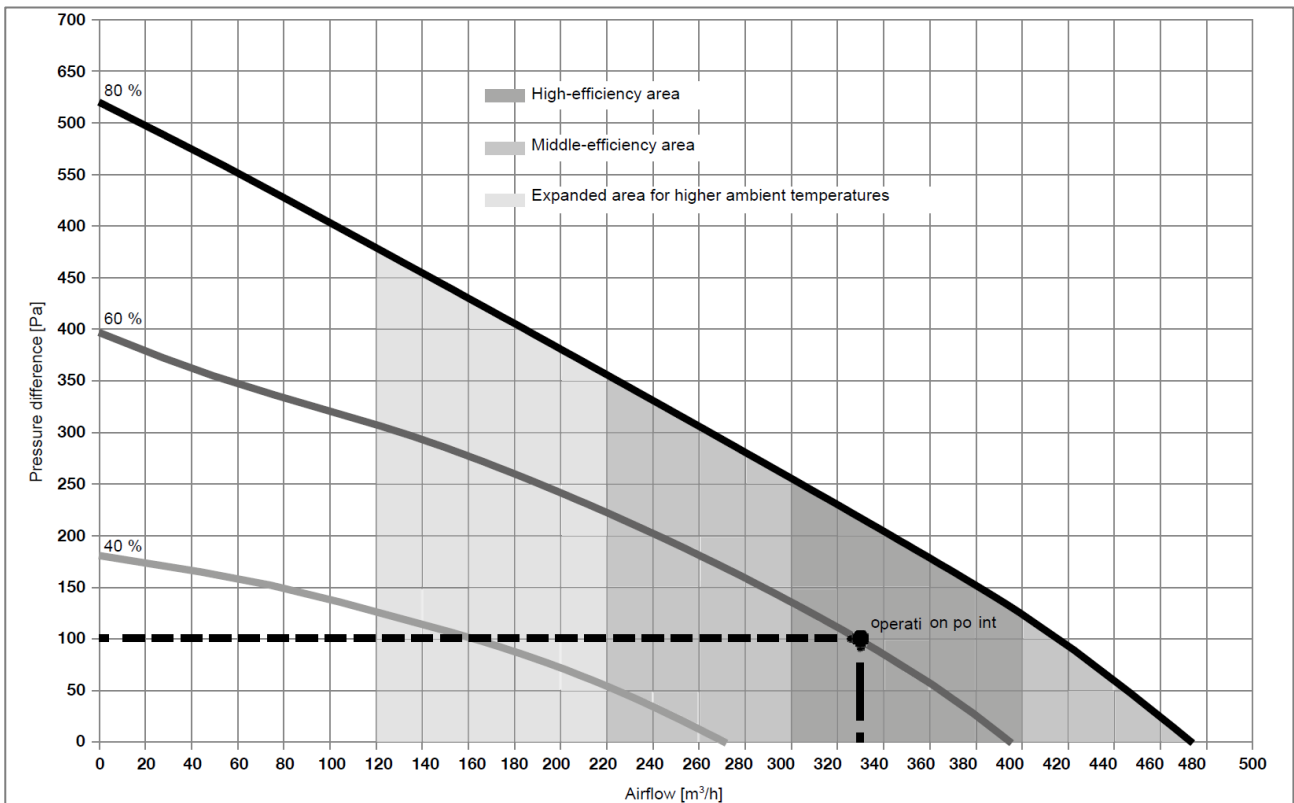


Figure 4: Aerodynamic characteristics of heat pump fan

- Values of total static pressure drop are calculated by adding up pressure drops of each individual element, installed in the air pipeline system. Values of pressure drops of each individual element (diameter 150 mm) are presented in the following table.

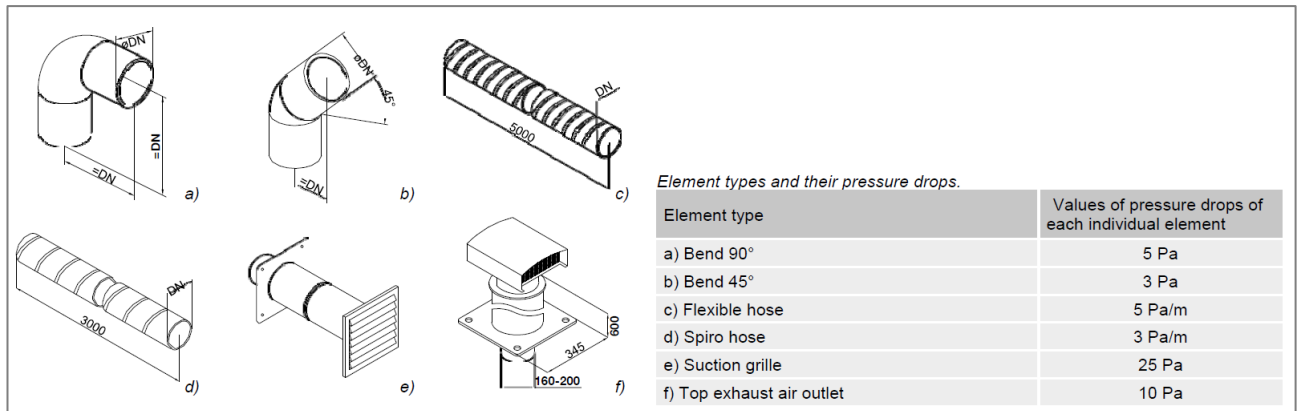


Figure 5: Diagram of the elements of the air inlet and outlet pipeline system

The calculations of the pressure values are informative. More accurate calculations of airflows require more detailed characteristics of individual elements or information from the developer. After the installation we recommend measurements of the airflow in the pipeline system. Values of total static pressure drop are calculated by adding up pressure drops of each individual element, installed in the air pipeline system. Recommended nominal operation is at the sum total of ca. 100 Pa. In case of airflow decrease COP drops.

Calculation example

	Number of elements	Δp (Pa)	$\Sigma \Delta p$ (Pa)
Bend 90°	4	5	20
Flexible hose	9	5 Pa/m	45
Suction grille	1	25	25
Top exhaust air outlet	1	10	10
Sum total			100

NOTICE

Connection of the heat pump to the same pipeline with the kitchen vent, the ventilation system of smaller apartments is not allowed.

During operation of the heat pump condensate forms in the aggregate. The condensate should be drained to the sewage system via flexible tube \varnothing 16 mm on the rear side of the heat pump. The quantity of condensate depends on air temperature and humidity or air.

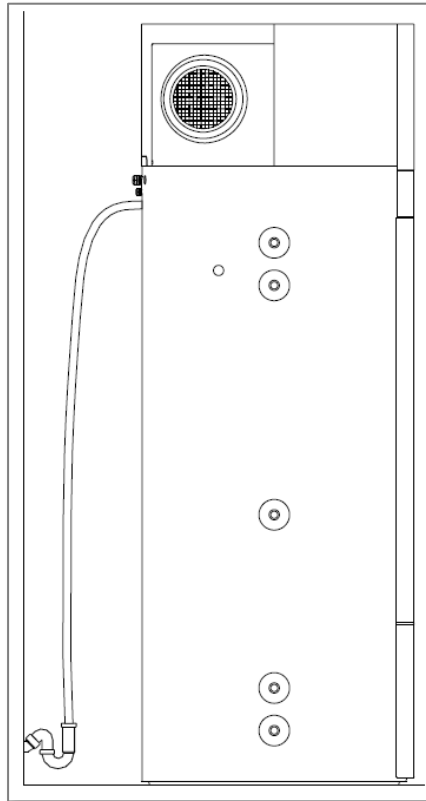


Figure 6: Connection to water supply mains - condensate outlet

To reduce noise and vibrations of the installed fan take the following steps to prevent the noise and vibrations to be transmitted through walls into rooms, where it would be disturbing (bedrooms, restrooms):

- install flexible connectors for hydraulic jacks
- install flexible pipes for air inlet and outlet
- isolate the vibrations for wall transmitters
- provide silencers for air inlet and outlet
- air inlet and outlet pipes attach with vibration silencers
- predict isolation of vibrations via floor
- use support elements.

5 Water loop connection

Installation to the heating system (flow and return) as well as hot and cold water must be performed in accordance with the connection diagrams. In doing so, the guidelines of the applicable drinking water ordinance (according to DVGW) must be observed.

NOTICE

Danger of destruction due to bad water quality!

Regarding the water quality, the following limit values are to be taken into account for the storage tanks:

- electrical conductivity: 455 $\mu\text{S}/\text{cm}$
- chloride content: 250 mg/l

Please pay attention to the below points when connecting the water loop pipe:

- Try to reduce the water loop resistance
- Make sure there is nothing in the pipe and the water loop is smooth, check the pipe carefully to see if there is any leak, and then pack the pipe with the insulation.
- Install the single way valve and safety valve in the water circulation system.
- The nominal pipe wide of the field- installed sanitary installations must be selected on the basis of the available water pressure and the expected pressure drop within the piping system.
- The water pipes may be of the flexible type. To prevent corrosion damage, make sure that the materials used in the piping system are compatible.
- When installing the pipe-work on the customers' site, any contamination of the piping system must be avoided.

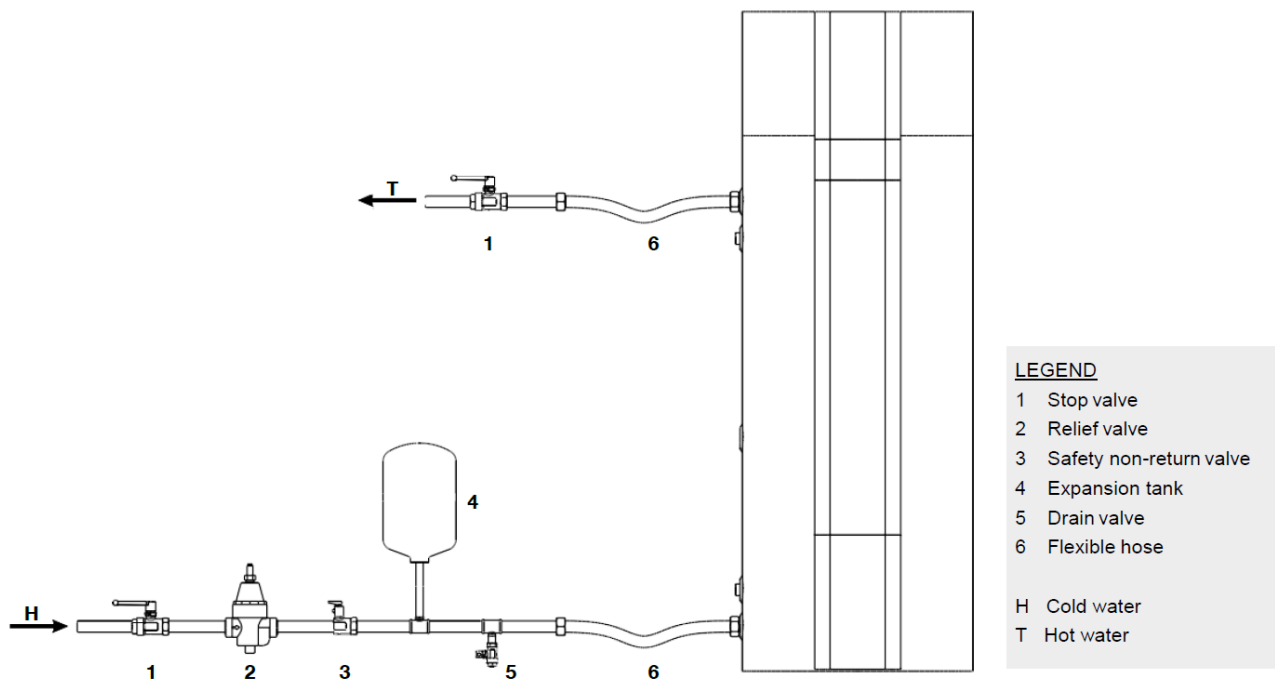


Figure 7: Connection (stop valve 6 bar)

NOTICE**Attention**

Operation without water in water tank may result in damage of the heat pump and the auxiliary e-heater!

5.1 Safety valve

Installing a safety valve is mandatory in order to assure safe operation. The valve prevents an increase of the pressure in the boiler above the nominal pressure. The outflow nozzle on the safety valve must have an outlet into the atmosphere. To assure correct operation of the safety valve, check the valve regularly and, if necessary, remove the limescale and check that the safety valve is not blocked. When checking the valve, push the lever or unscrew the nut of the valve (depending on the type of the valve) and open the drain from the safety valve.

Water must flow from the valve nozzle, showing that the valve operation is faultless. During the heating of water, the water pressure in the hot water tank is increased up to the level present in the safety valve. Since the system prevents backflow of water into the water supply mains, water may be dripping from the outlet opening on the safety valve. The dripping water may be drained via trap into the drains; the trap is mounted under the safety valve. The outlet pipe, which is mounted under the safety valve, must be directed downwards, in a place with a temperature above freezing.

If the installation does not allow draining of the water from the safety valve into the drains, dripping can be avoided by installing an expansion vessel onto the heat pump inlet pipe. The volume of the expansion vessel must be ca. 5 % of the hot water tank volume.

The heat pump is designed for connection to indoor water supply mains without using the relief valve if the pressure in the supply mains is lower than prescribed on the appliance. If the pressure is higher, a relief valve needs to be installed so as to provide that the pressure at the inlet to the hot water tank does not exceed the nominal pressure.

5.2 Water affusion and water emptying

5.2.1 Water affusion

If the unit is used for the first time or used again after emptying the tank, please make sure that the tank is full of water before turning on the power.

- Open the cold water inlet and hot water outlet.
- Start the water affusion. When there is water normally flowing out from the hot water outlet, the tank is full.
- Turn off the hot water outlet valve and water affusion is finished.

NOTICE**Attention! Risk of total loss!**

Operation without water in water tank may result in damage of auxiliary e-heater! Make sure that tank and hydraulic circuit are always filled with water during operation.

5.2.2 Water emptying

If the unit needs cleaning or moving the tank should be emptied.

- Close the cold water inlet
- Open the hot water outlet of the tank
- Start the water emptying through the valve of the drainpipe

5.3 Connection to other heat sources

The hot water storage tank with the heat pump is designed for the provision of domestic hot water through the heat exchanger with different heating sources (e.g. central heating, solar power, etc.).

Connection options to different heating sources are shown below.

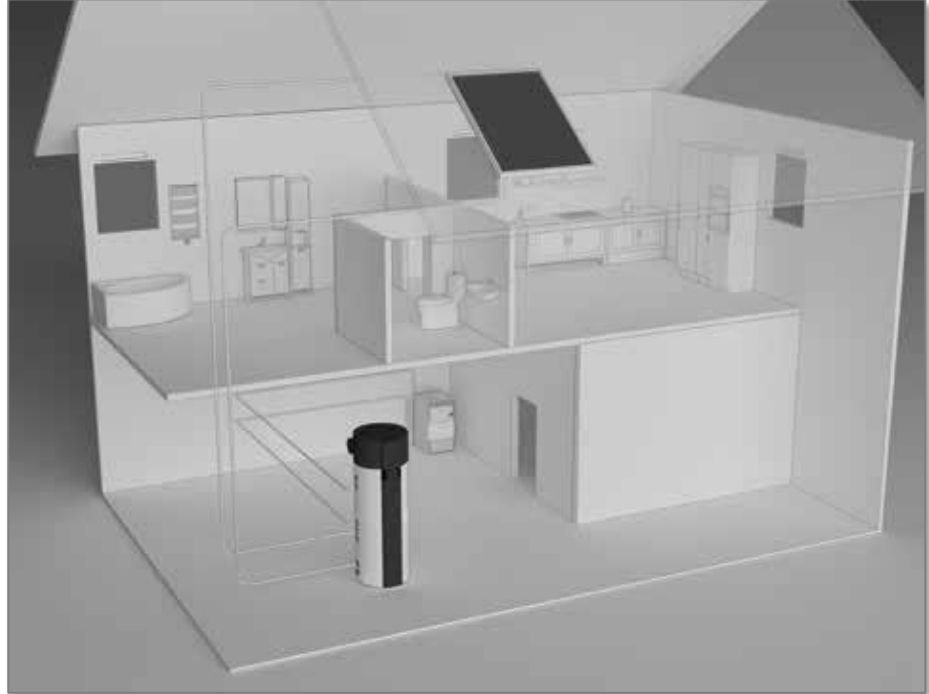


Figure 8: Connection to the central heating

With a temperature decline of an additional heating source and with an enabled water circulation through the heat exchanger proper temperature control of the additional source must be ensured.

NOTICE

Attention! Risk of total loss!

If the additional energy source is solar power, the operation of the aggregate of the heat pump must be shut off. The combination of two heating sources can lead to overheating of the hot water and thus to excessive pressures.

Note: The circulation pipeline causes additional temperature decline in the hot water storage tank.

6 Connection to the power supply network

In order to connect the hot water storage tank with the heat pump to the power supply network first install an electrical socket suitable for the current load of 16 A.

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

- The installation height of the mains connection should be more than 1.8 m, so that the device is protected against any splash water.
- The appliance shall be installed in accordance with national wiring regulations. The unit must always have an earthed connection. If the power supply is not earthed, you may not connect the unit. Perform electrical work according to the installation manual and be sure to use a dedicated section, fused C16A.
- The unit must be installed a creepage breaker near the power supply and must be effectively earthed. The specification of the creepage breaker is 30 mA, less than 0.1 sec.

NOTICE

Risk of total loss!

If the capacity of the power circuit is insufficient or there is an incomplete electrical circuit, it could result in a fire or an electric shock. Never use an extension cable to connect the unit to the electric power supply.

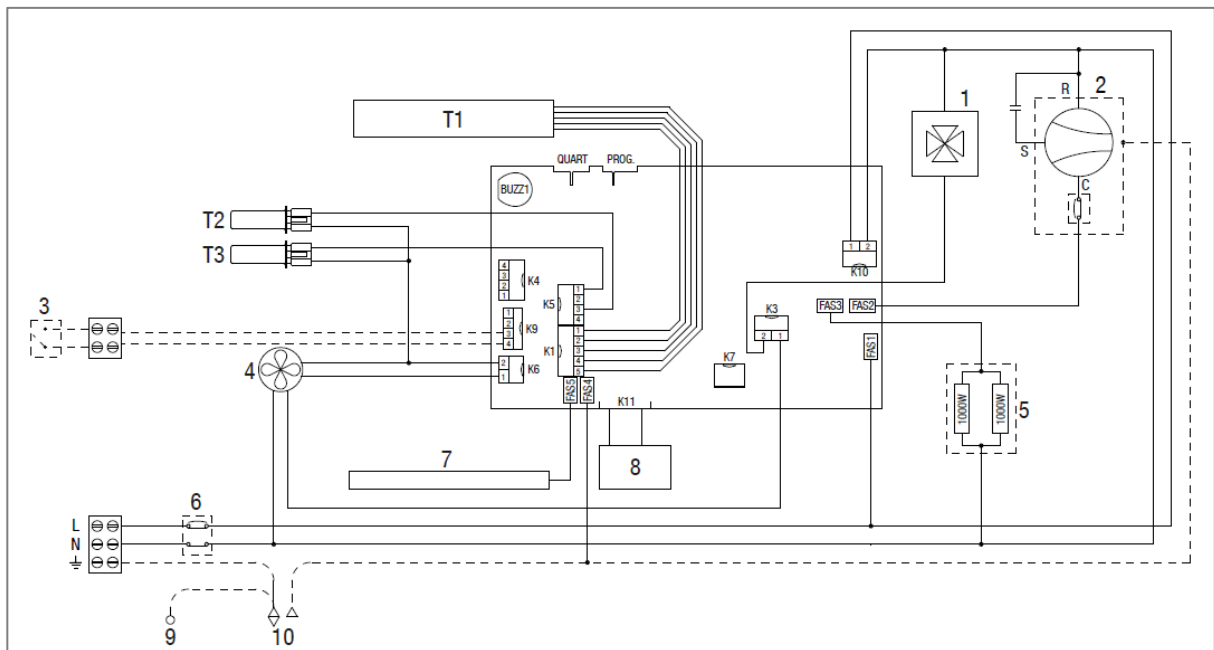


Figure 9: Connection to the power supply

T1	Temperature sensor (tank)	5	Electric heating element (2 x 1000 W)
T2	Temperature sensor (evaporator)	6	Thermal cut out (temperature)
T3	Temperature sensor (environment)	7	Mg anode
1	4 way valve	8	LCD touch screen
2	Compresso	9	Housing ground (in case of metal casing)
3	PV function	10	Boiler ground
4	Fan		

6.1 Cable list EcoWell



6.2 Photovoltaic control line



Warning! Risk of electric shock!

Keep all electrical supply units locked at all times!

Any work on the electrical equipment of the heat pump shall only be performed by professional electricians!

All plug connections used in the heat pump control may not be connected or disconnected under voltage – disconnect mains voltage.

The connection of the control cable of the PV function has to be made at the terminals under the PV cover.

- In case of voltage free contact between clamps 1 and 2 PV is activated (see Figure 12).
- In case of voltage free contact between clamps 1 and 2 field 1 is displayed.
- The voltage free contact requires 800 W of electrical power.
- PV is deactivated in default settings.
- PV is activated in the installation menu with the activation of parameter 34.
- Set PV functions prior to time settings.
- PV mode does not affect the backup mode.
- The antilegionelle cycle is performed regardless the state of the PV mode.
- PV operation (activated):
PV is activated and the operation of the heat pump is allowed. The heat pump heats the water to the maximum temperature (see technical characteristics table). The heater is deactivated.
No contact between PV clamps and the heat pump operation is allowed. The heat pump heats the water temperature up to 40 °C.

6.2.1 Opening the EPP-maintenance cover

Models 300 I

- To remove a small part of the maintenance cover, pull on the bottom side.
- To remove the larger part of the maintenance cover, pull on the bottom side. Take reverse steps for closing the cover.

Models 200 I

- The 200 I models do not have a short EPP maintenance cover.
- Remove the maintenance cover pulling on the bottom side.

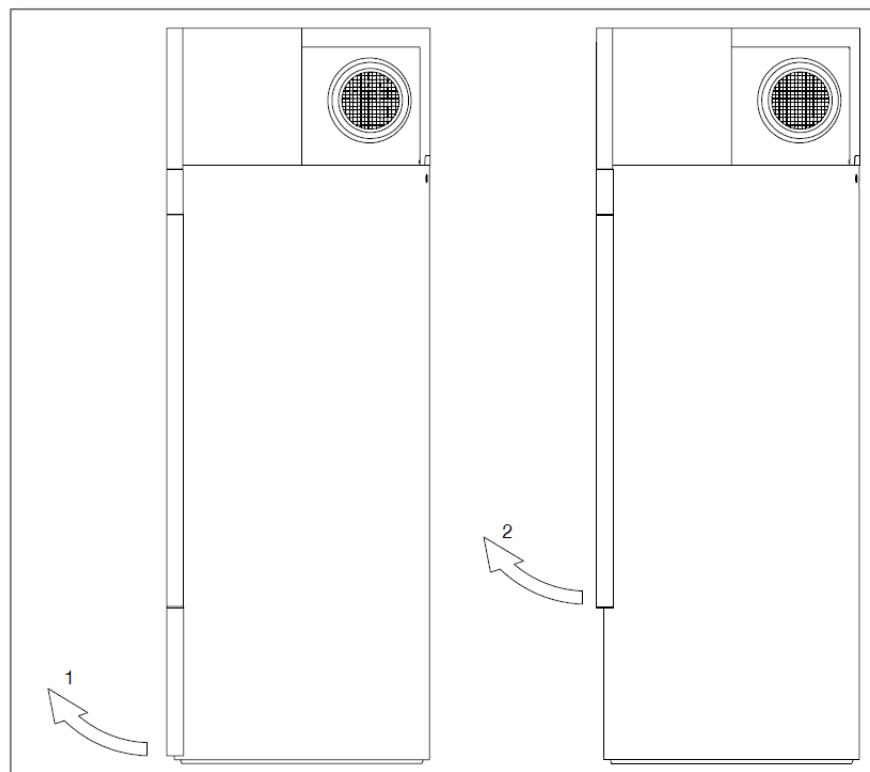


Figure 10: Opening the EPP maintenance cover

6.2.2 Connection PV module (Photovoltaik)

The connection of the PV module to the heat pump must be performed by a qualified expert. On the back side of the heat pump, there is a PV connection port. On the back of the heat pump is a cable gland for the introduction of the cable connection.

Use a connection cord (minimum inner cross-section 0,5 mm², H05VV-F 2G 0,5 mm² and maximum external cross-section of 10 mm). The PV terminal is located under the EPP service cover (see 6.2.1).

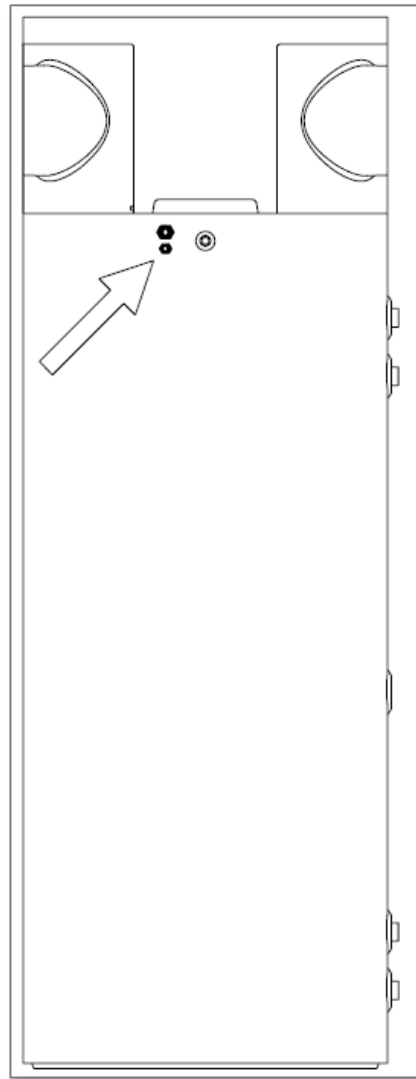


Figure 11: PV cable entry

6.2.3 Clamps (PV)

Connect the cord to the clamp, located under the control unit. The connection location is marked with PV. Use ports 1 and 2.

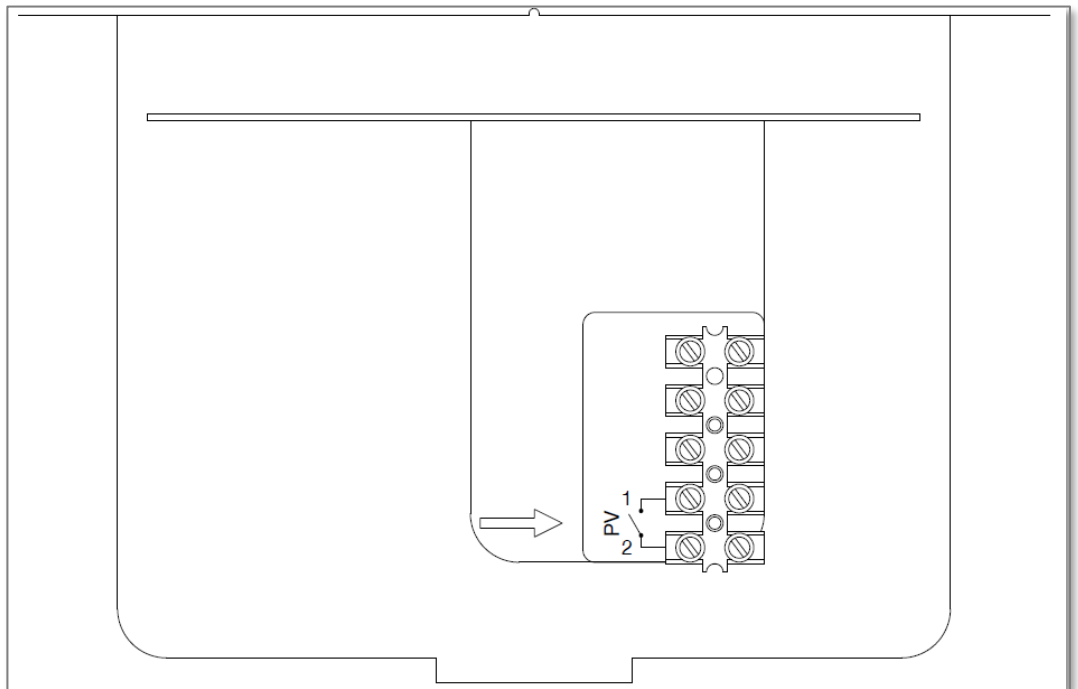
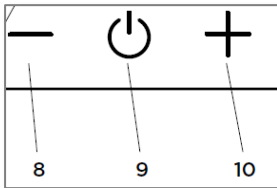


Figure 12: Connection of the PV module (Photovoltaik)

7 Initial operation

7.1 Checks before startup



- Check if any water flows out from the hot water outlet.
- Make sure that the tank is full of water before turning on the power.
- Check the power system, make sure that the power supply is normal and the wire connection is ok.
- Check the inlet water pressure; make sure that the pressure is sufficient.
- Check the unit; make sure everything is ok before turning 'ON' the power of the unit, check the light on the wire controller when the unit runs.
- Use the wire controller to start the unit (9).
- Listen to the unit carefully when turning 'ON' the power of the unit (9). Turn the power 'OFF' when you hear an abnormal sound (9).
- Measure the water temperature, to check the undulation of the water temperature.
- Once the parameters have been set, the user cannot change the parameters optionally. Any work on the equipment of the heat pump shall only be performed by service experts.

8 Operation

WARNING

Risk of scalding!

There is hot water mixed with cold water. Too hot water (above 50 °C) in the heating unit can cause scalding.

Install faucets with anti-scald.

The heat pump can be operated using an LCD touch screen. If you press anywhere on the screen, the screen lights up. When the screen is lit up, the operation fields are active.

When the heat pump is connected to the water and power supply mains and the boiler is filled with water, the heat pump is ready to be used. The heat pump heats the water in the range 10 °C - 65 °C. From 65 °C - 75 °C the water is heated by electrical heaters.

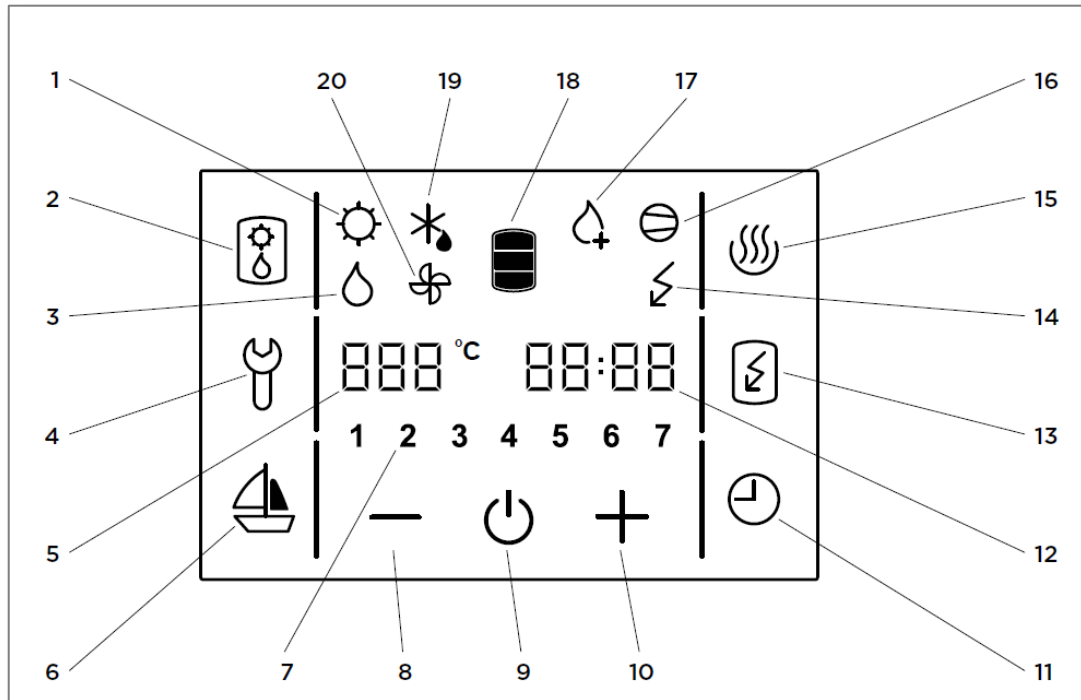


Figure 13: Operation display

LEGEND

- 1 Signalization of the operation of solar collectors
- 2 Alternative source of heating/turned on
- 3 Signalization of the backup operation
- 4 Indication, overview of operation errors, entrance into the service menu
- 5 Display and setup of temperature in °C
- 6 Start and setup of the VACATION programme
- 7 Day of the week (1 .. Monday, ..., 7 .. Sunday)
- 8 Reducing the value
- 9 Heat pump on/off switch
- 10 Increasing the value
- 11 TIMER start and setup
- 12 Time setup and display
- 13 Start-up of quick heating "TURBO"
- 14 Indicator of the heating element operation
- 15 Start-up of heating to the maximum temperature level
- 16 Signalization of compressor operation
- 17 Signalization of anti-legionella programme operation
- 18 Warm water quantity display
- 19 Signalization of defrosting
- 20 Signalization of fan operation

8.1 Starting / stopping the heat pump

To start the heat pump, hold field no. 9.

When the appliance is switched on, the fan starts first and operates for one minute (symbol no. 20 is displayed). If the temperature of inlet air is appropriate, the controlling unit switches on the compressor and the heat pump operates in normal mode (symbols 16 and 20 are displayed). The heat pump is on, the screen remains unlit and inactive.

In 60 seconds after the last touch of the screen, the illumination and activity of the screen are turned off, but that does not affect the operation of the heat pump. Pressing anywhere on the screen re-activates the screen and its illumination.

If trying to start up at a lower temperature, please see chapter "Operation at lower temperatures".

- By holding field no. 9, the heat pump is switched off.
- The appliance stops functioning and the only field visible on the screen is field no. 9. (If you switch off the heat pump for a longer period of time, the water must be drained from the pump if there is any danger of freezing).

8.2 Power failure protection

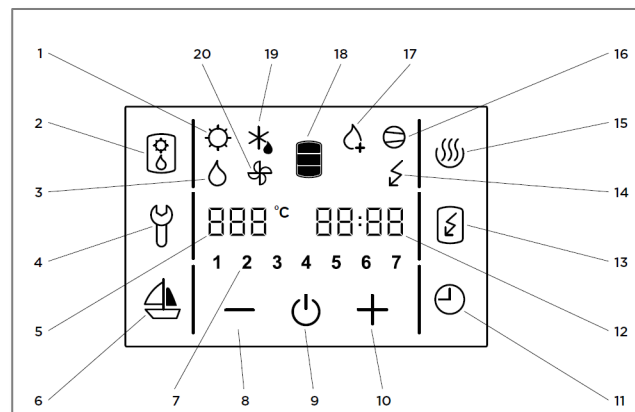
In case of power failure, the settings remain stored for up to 23 hours.

After restarting, the heat pump operates in the same mode it was operating in before the power failure.

8.3 Operation at lower temperatures

When the appliance is switched on, the fan starts first and operates for one minute (symbol no. 20 is displayed). If the temperature of inlet air is lower than -7 °C, the fan is turned off. Domestic water is heated with heaters. The heat pump operates in the reserve mode (symbol no. 14 is displayed).

The possibility of switching to normal mode is checked every 2 hours by switching on the fan for one minute. If the temperature of inlet air is higher than -7 °C, the heat pump switches to normal mode of operation (symbols 16 and 20 are displayed). The heaters switch off. The heat pump is on, the screen remains unlit and inactive.



At lower air temperatures, the evaporator defrosting cycle is started if necessary. Symbol no. 19 is displayed on the screen. The fields 2, 4, 6, 11, 13 and 15 remain inactive. Defrosting takes place until the conditions for normal operation of the heat pump are achieved.

After successful defrosting, the heat pump returns to normal operation (symbols 16 and 20 are displayed).

If defrosting is unsuccessful, the controlling unit displays an error message. Field no. 4 starts flashing, accompanied by warning beeps. By pressing field no. 4 the warning beeps can be turned off. Error code E247 appears in field no. 12 and the pump switches automatically to heating with electric heaters. The screen displays symbol no. 14. The error code can be deleted at any time by pressing field no. 4. Field no. 12 resumes to displaying time.

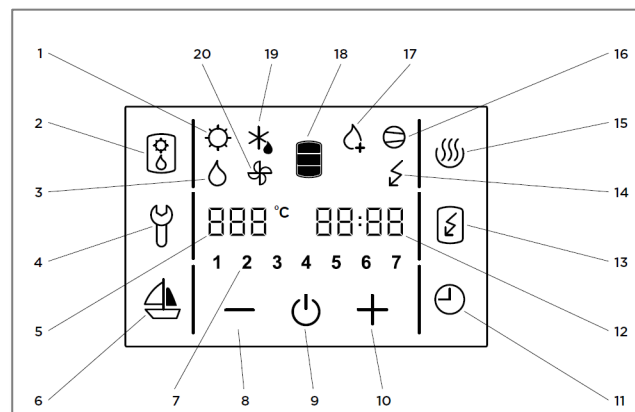
8.4 Setting the clock and day of the week

Procedure:

- Hold field no. 12, until field no. 7 shows a flashing number of the day of the week.
- By pressing + or – you can set the number of the day of the week (1 – Monday, ..., 7 – Sunday).
- Press field no. 12 again (flashing hour setting is displayed).
- By pressing + or – set the hour (by holding + or – you can speed up the setting).
- Press field no. 12 again.
- Flashing minute setting is displayed.
- By pressing + or – set the minutes (by holding + or – you can speed up the setting).
- The setting is stored when you press field no. 12, or when the field stops flashing.

8.5 Setting the temperature

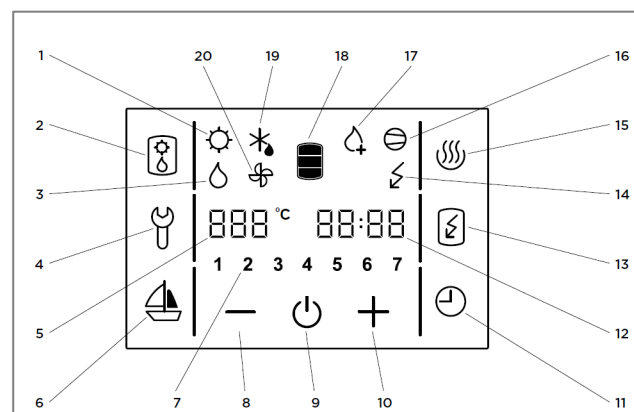
- Preset to economic temperature of 55 °C.
- Press field no. 5 (the set temperature starts blinking).



- By pressing + or – you can change the temperature setting from 10 °C to 75 °C or 10 to 65 °C.
- The setting is stored by pressing field no. 5 again, or when field no. 5 stops flashing. After a few seconds, the display shows the actual temperature. The set temperature should suffice 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 or increase the number of operating hours.
- In case of power failure, the last stored value is restored.

8.6 Switching on the "TURBO" mode

- If you need more warm water than the heat pump can heat up in a short period of time, press field no. 13 (switches on the "TURBO" mode). The heat pump and heater work simultaneously. The screen shows symbols no. 14, 16 and 20. When the temperature reaches 55 °C the heat pump returns to the mode used before the "TURBO" mode.



8.7 Switching on the "HOT" mode

- If you want to heat the water to the maximum temperature of 75 °C, press field no. 15. The heat pump will heat water to 55 °C. The screen displays symbols no. 16 in 20. When the temperature in the boiler reaches 55 °C the electric heater turns on to heat the temperature up to 75 °C. The screen displays the symbol no. 14. When the temperature reaches 75 °C the heat pump returns to the mode used before the "HOT" mode.



Figure 14: Temperature settings, switch on „TORBO“ and „HOT“ mode

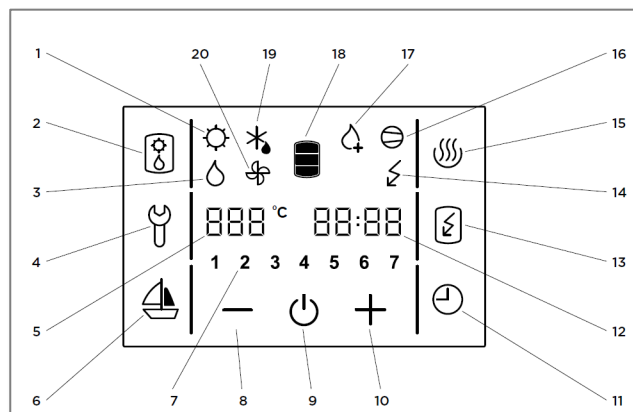
8.8 Display of the quantity of water in the heat pump

The display shows the symbol 18:

- no warm water

- low quantity of warm water

- high quantity of warm water



8.9 Setting the vacation mode

In the vacation mode, you can set the number of days (maximally 100), when the heat pump shall maintain the minimal temperature of water (approximately 10 °C).

- Hold field no. 6 for a while (fields 5 and 6 start to flash).
- Pressing fields + or – you can set the number of vacation days shown in field no. 5.
- Pressing field no. 6 again, or when field no. 6 stops flashing, the set number of days is stored.
- If you set the value to 0, then the heat pump will resume its normal operating mode after confirming the setting, and illumination of field no. 6 will turn off.
- After the set number of days has elapsed, the heat pump returns to the normal mode and illumination of field no. 6 turns off.

8.10 Setting the TIMER mode

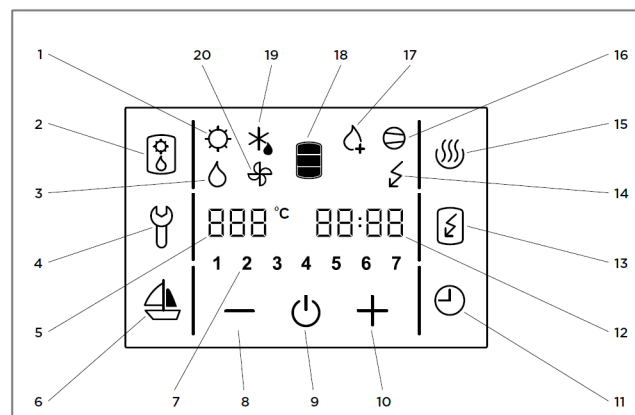
In the TIMER operating mode, you can set the times when the heat pump will start and stop. For each timer combination you can set up to three time periods in which the heat pump will not heat the water.

a) Setting the timer combinations

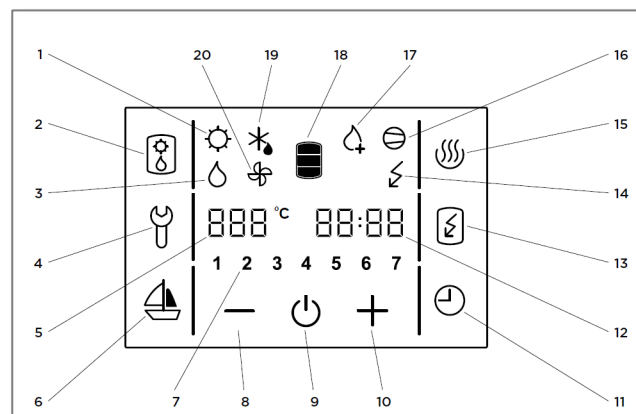
- Hold field no. 11 for a while (fields 7 and 11 start to flash). Pressing fields + or – choose among three timer modes of operation:
- Timer mode of operation of the heat pump for the entire week (numbers 1-7 flash in field no. 7),
- Timer mode of operation of the heat pump for Monday to Friday and Saturday to Sunday (numbers 1-5 and then 6 and 7 flash in field no. 7),
- Timer mode of operation of the heat pump for each day at a time (individual numbers 1-7 flash in field no. 7). Press field + or – to select each day of the week.
- To set the time, press field no. 12.
- On the field no. 5, the text 1OF appears and field no. 12 starts to blink.

By pressing fields + or – set the time of shutdown.

- Press field no. 12 again.



- On the field no. 5, the text 1ON appears and field no. 12 starts to blink. By pressing fields + or – set the time of start-up.
- By pressing field no. 12 again, you can use the above procedure to set the second and third period.
- If you do not want to set the second and third periods, confirm the setting by pressing field no. 11 or wait for field no. 12 to stop flashing and the setting to be saved automatically. .By pressing fields + or – set the time of start-up.
- To set the second and third periods, set the start and end of periods 2 and 3 and confirm the setting following the procedure described above by pressing field no. 11 or wait for field no. 12 to stop flashing and the setting to be saved automatically.
- To set the timer operating mode "for each day of the week" or "for the period from Monday to Friday and from Saturday to Sunday", set all 3 time periods following the procedure described above.



8.13 User levels (professional information)

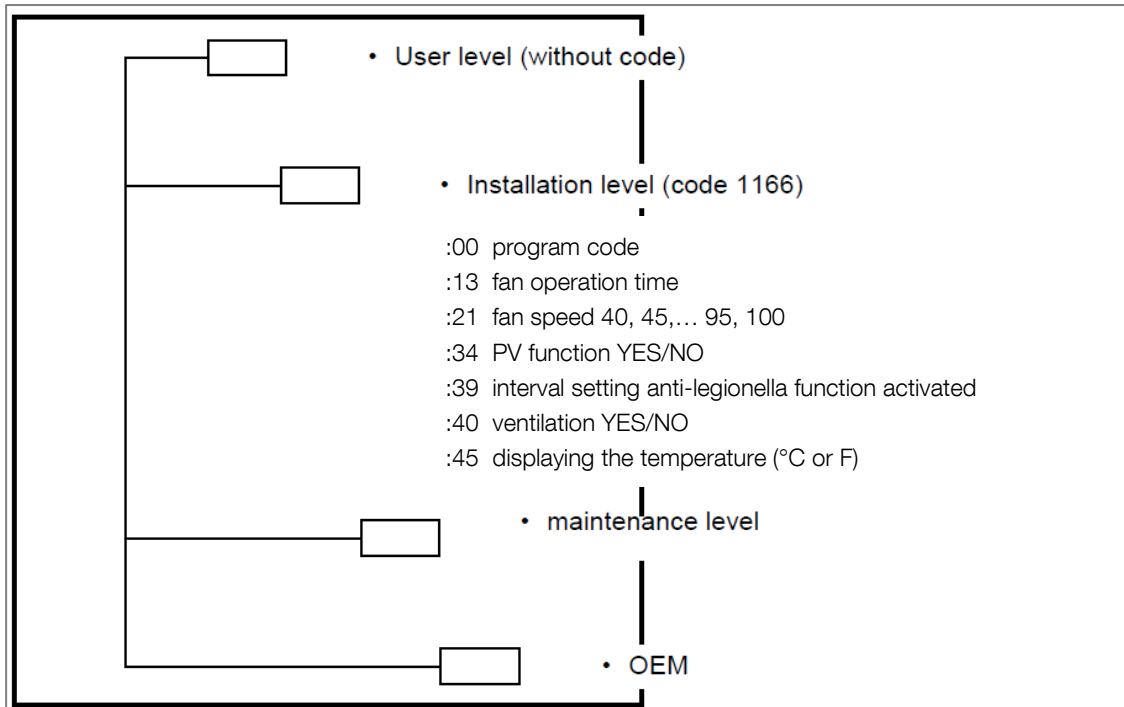


Figure 16: User levels

8.13.1 Maintenance level access

- Pressing field no. 4, you can activate the maintenance mode (Figure 10).
- A display menu with an inscription “code” in the filed CLOCK appears. Enter the maintenance code (fields FN1, FN2, FN3, FN4, FN5 in FN6 for numbers 1, 2, 3, 4, 5, 6).

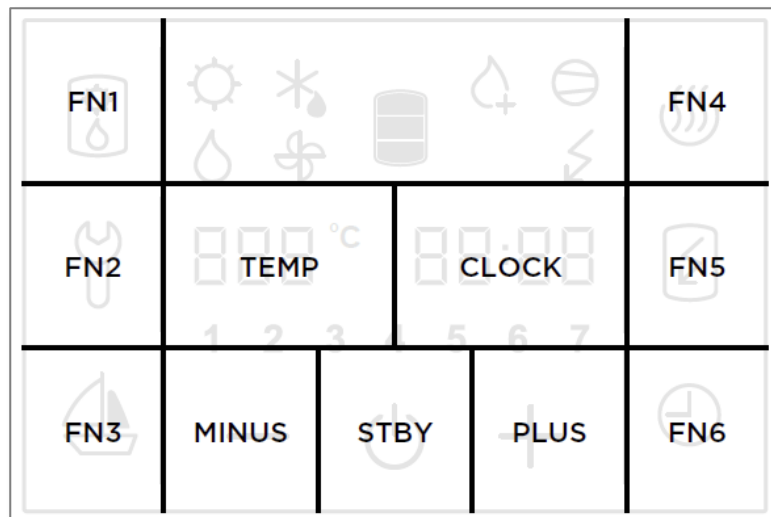


Figure 17: Fields display

- If you do not press any field for 10 s, the programme returns to the start menu.
- If the code is incorrect, the programme returns to previous operation.

- If the code is correct, the first parameter appears on the display. The number on the right is the serial number of the parameter and the field on the left is intended for its value.
- The first parameter :00 is a version of a software code and serves information purposes only.
- By pressing the right number (Field CLOCK in Figure 17) you proceed to the next parameter.

8.13.2 Installation level (Code 1166)

After the first code entry for the installation level the programme allows access to the following parameters:

- :00 programme code
- :13 setting the fan operating time
- :21 fan speed 40, 45, ..., 95, 100
- :34 PV function YES/NO
- :39 interval setting for anti-legionella function activation
- :40 ventilation YES/NO
- :45 temperature settings °C or °F

8.14 Setting the fan operating time (parameter :13)

After selecting the parameter (:13), press (+) or (-) to set the desired fan running time (default: 30 minutes). You can set up to 30 minutes in 5 minute increments and 30 minutes in 10 minute increments. For maximum time setting, ON is displayed, i.e. the fan runs constantly until the function is switched off manually.

When the running time of the fan is set, it is automatically saved with a short time delay or by pressing field 4.

8.15 Fan speed settings (parameter :21)

Select the parameter :21 and set the fan speed by pressing (+) or (-) (40 % - 100 %). See the numerical value settings on the left side in field 5. When the fan speed is set, you can save the changes by waiting a few moments or by pressing no. 4.

8.16 PV function activation (photovoltaics) (parameter :34)

Yes – activated

No – deactivated

8.17 Anti-legionella function (parameter :39)

Select the parameter (:39) and set the interval for the anti-legionella function activation (0 to 60 days) by pressing (+) or (-). See the numerical value settings on the

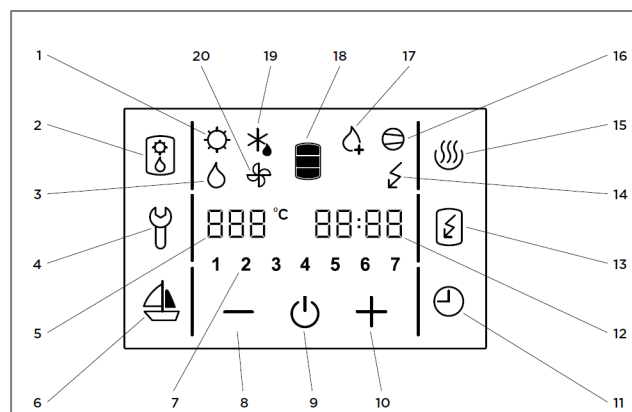
left side in field 5. When the interval of the anti-legionella function activation is set, the changes are saved automatically after a few moments, or manually by pressing field no. 4. If the parameter (:39) is set to 0, the anti-legionella function is inactive.

- Factory settings of the anti-legionella function activation: Every 14 days of the heat pump operation, if the water temperature in the previous 2-week period did not exceed 65 °C continuously for at least an hour.
- The anti-legionella function works only when the heat pump is switched on. When activated, symbol no. 17 is displayed.
- The anti-legionella function can be activated manually by pressing field no. 15.
- The anti-legionella function can be disabled by switching off the heat pump when pressing field no. 9.

WARNING

Warning scalding hazard!

After being heated with the anti-legionella function, the water temperature in the boiler is 65 °C or more (regardless of the basic setting of the water temperature in the appliance).



8.18 Fan aktivation (parameter :40)

Yes – activated

No – deactivated

8.19 Select temperature display (parameter :45)

After selecting the parameter (:45), press (+) or (-) to select the temperature display in °C or °F (default is °C).

When the desired temperature display mode is selected, it is automatically saved with a short delay or by pressing field 4.

8.20 Ventilation

The function is activated by briefly pressing field 2. The function switches off automatically after the time set in parameter :13 (standard 30 minutes, see Setting the running time of the fan, parameter :13).

Symbol 2 is active and is displayed.

If you briefly press the field again, the function is switched off.

If you switch off the heat pump with the ON/(OFF) switch, this function is also switched off.

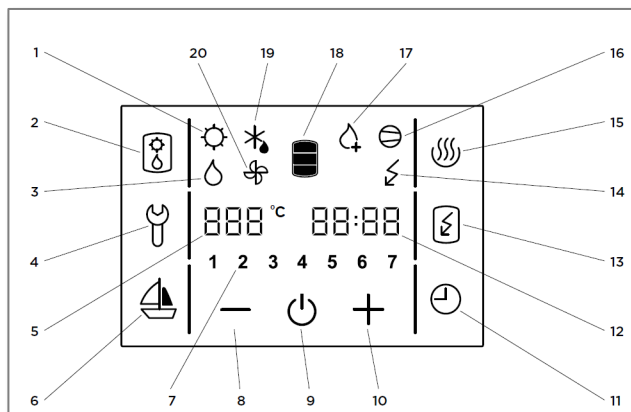
In the event of a power failure during the ventilation function, the ventilation function remains active after the power supply is switched back on until the set interval has expired. In the event of an error, the function is switched off.

The ventilation function cannot be switched on:

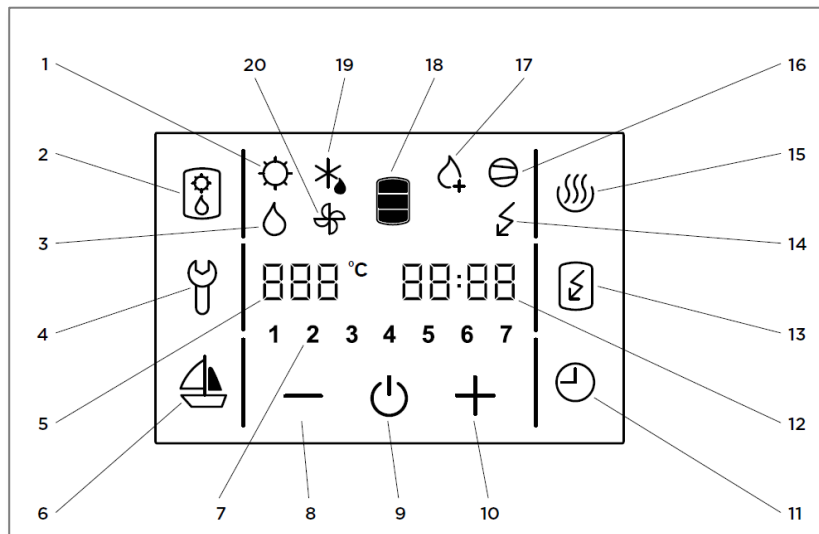
- If an error occurs;
- If the anti-Legionella function is active;
- During defrosting.

8.21 Backup mode

- Activate backup mode by pressing field no. 2.
- Backup mode uses heaters and is activated when an error occurs on the aggregate. The water is heated with heaters.
- By pressing field no. 2 backup mode is deactivated.
- Symbol 3 is displayed.



8.22 Operation display



(20) Fan on/off:

- activated – control field 20 is displayed
- deactivated – control field 20 is not displayed

(19) Defrosting:

- activated – control field 19 is displayed
- deactivated – control field 19 is not displayed

(17) Antilegionella programme:

- activated – control field 17 is displayed
- deactivated – control field 17 is not displayed

(16) Heat pump:

- activated – control field 16 is displayed
- deactivated – control field 16 is not displayed

(14) Electrical heater:

- activated – control field 14 is displayed
- deactivated – control field 14 is not displayed

(9) On/off:

- activated – control field 9 and other fields are displayed
- deactivated – control field 9 is displayed

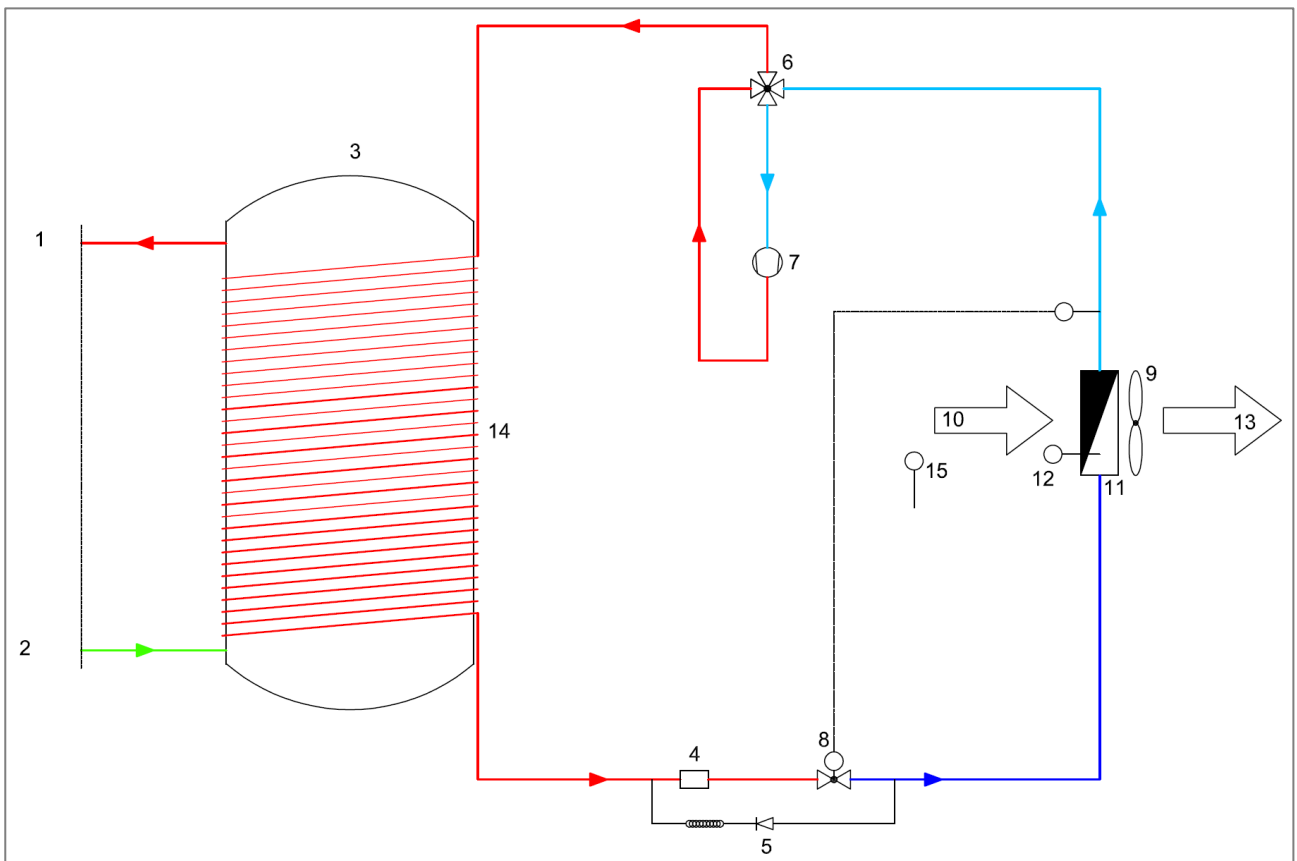
(2) Ventilation on/off (by pressing field no. 2):

- activated – control field 2 is displayed

(3) Backup mode on/off (by pressing field no. 2):

- activated – control field 3 is displayed
- deactivated – control field 3 is not displayed

8.23 Refrigeration circuit EcoWell



Components in the refrigeration circuit

1	Hot water OUT
2	Cold water IN
3	Domestic hot water tank
4	Filter
5	Check valve
6	4 way valve
7	Compressor
8	Thermostatic expansion valve
9	Fan
10	Air intake
11	Evaporator
12	Temperature sensor (Evaporator)
13	Air outtake
14	Condensor
15	Temperature sensor air intake

9 Service, maintenance and inspection



After the connection to the water supply mains and other heating sources the hot water tank with the heat pump is ready for use.

By providing regular service check-ups, you can ensure flawless operation and long life of the heat pump. The warranty for the product is subject to the conditions of the warranty statement.

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



Warning! Risk of electric shock!

Do not clean the device when the operating voltage is switched on.

Disconnect the device from the power supply by pulling the power plug from the outlet. Note a possible residual voltage on the capacitors.

Any work on the electrical equipment of the heat pump shall only be performed by professional electricians!

If there is any possibility the water in the tank could freeze, you must drain the water from the tank.

- **Procedure:**

Open the hot water lever at one of the mixing batteries, connected to the hot water tank.

- The water is drained via a drain valve on the inlet water pipe.

To clean the exterior of the heat pump, use a soft cloth and a mild detergent. Avoid cleaning agents containing alcohol and abrasive cleaners. If the heat pump was exposed to dust, evaporator lamellas might become blocked, which can have a detrimental effect on the functioning of the heat pump.

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

Before calling your maintenance provider, check the following:

- Is everything OK with the power supply network?
- Is the air outlet obstructed (evaporator can freeze)?
- Is ambient temperature too low (evaporator can freeze)?
- Can you hear the operation of the compressor and fan?



Risk of injury!

Do not try to eliminate malfunctions by yourself.

Call your nearest authorized service provider!

- Check the water supply and air vent frequently, to avoid lack of water or air in the water loop.
- Clean the water filter to keep a good water quality. Lack of water and dirty water can damage the unit.
- Keep the unit in a place where it is dry and clean, and which has good ventilation. Clean the heat exchanger every one to two months.
- Check each part of the unit and the pressure of the system. Replace the defect part if there is any, and recharge the refrigerant if it is required.
- Check the power supply and the electrical system, make sure the electrical components are good, and the wiring is well. If there is a damaged part or a

strange smell, please replace it in time.

- Do not turn the power 'OFF' when you use the unit continuously, or the water in the pipe will freeze and split the pipe.
- If the heat pump is not used for a long time, please drain out all the water from the unit and seal the unit to keep it good. Please drain the water from the lowest point of the boiler to avoid freezing in winter. Water recharge and full inspection on the heat pump is required before it is restarted.
- It is recommended to clean the tank and e-heater regularly to keep an efficient performance.
- It is recommended to set a lower temperature to decrease the heat release, prevent scale and save energy if the outlet water is sufficient.
- Clean the air filter regularly to keep an efficient performance.

9.1 Magnesium stick

The magnesium stick is used for corrosion protection. It is placed in the water storage. It can help to extend the life of the tank. Check the magnesium stick every 6 months.

9.1.1 Replacing the magnesium stick (information for professional service personal)

- Turn the unit off (OFF) and unplug the power cord.
- Remove the cover (top)
- Drain all water from the tank.
- Remove the old magnesium stick from the tank.
- Insert the new magnesium stick.
- Fill water again.



Figure 18: Position magnesium stick (see arrow)

10 Troubleshooting

WARNING

Do not continue to run the unit when there is something wrong or there is a strange smell.

The power supply needs to be shut 'OFF' to stop the unit; otherwise this may cause an electrical shock or fire.

This section provides useful information for diagnosing and correcting certain troubles which may occur. Before starting the troubleshooting procedure, carry out a thorough visual inspection of the unit and look for obvious defects such as loose connections or defective wiring.

DANGER

Warning! Risk of electric shock!!

When carrying out an inspection on the switch box of the unit, always make sure that the main switch of the unit is switched off.

Any work on the electrical equipment of the heat pump shall only be performed by professional electricians!

The guidelines below might help to solve your problem. If you cannot solve the problem, consult your installer/local dealer:

- No image on the controller (blank display). Check if the main power is still connected.
- One of the error codes appears, consult your local dealer.
- The scheduled timer does work but the programmed actions are executed at the wrong time (e.g. 1 hour too late or too early). Check if the clock and the day of the week are set correctly, adjust if necessary.

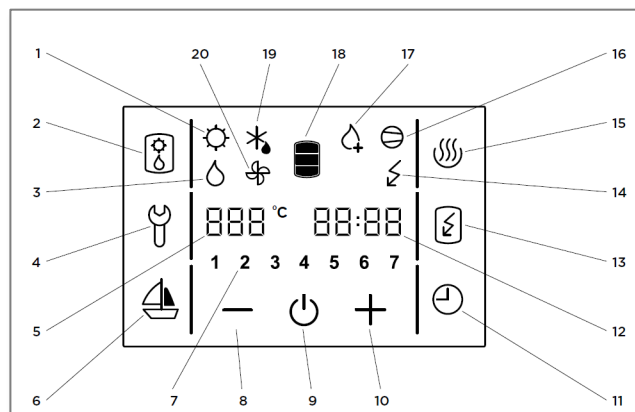
11 Operation errors

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

11.1 Indication of errors

In case of an error on the appliance, the beeper starts beeping and field no. 4 starts flashing. When you press field no. 4 the error code is displayed in field no. 12.

Error	Description	Solution
E004	Freezing. The error appears if the temperature in the heat pump is below 5 °C.	Call the service.
E005	Overheating (temperature > 75 °C, electronic regulator failure).	Unplug the heat pump from the power supply. Call the service.
E007	Volume and/or temperature sensors error.	Call the service.
E042	Anti-legionella function error.	Press field no. 4 to restart.
E247	Defrosting error.	Automatically turns on heating with the electric heater. When the error is deleted, the aggregate resumes its normal operation.
E361	External air sensor error.	Call the service (automatically switches to the electric heater).
E363	Defrosting sensor error.	Call the service (automatically switches to the electric heater).
E004	Freezing. The error appears if the temperature in the heat pump is below 5 °C.	Call the service.



12 Technical data

Type		EcoWell 200	EcoWell 300
Use profile		L	XL
Energy efficiency class ¹⁾		A+	A+
Energy efficiency of water heating η_{wh} ¹⁾	%	129	134
Annual electrical energy consumption ¹⁾	kWh	797	1246
Daily electrical energy consumption ¹⁾	kWh	3.762	5.787
Set thermostat temperature	°C	55	55
Level of indoor sound power ³⁾	dB(A)	59 / 58	59 / 58
Potential safety measures (assembly, installation, maintenance)		Compulsory use of a safety valve with the pressure connection	
Tank volume	l	208	276
Mixed water at 40 °C V40 ²⁾	l	260	368
Technical characteristics			
Heating time A15 / W10-55 ⁴⁾	h:min	05:21	08:00
Heating time A7 / W10-55 ⁵⁾	h:min	06:24	09:39
Energy consumption in the selected cycle of emissions A15 / W10-55 ⁴⁾	kWh	3.71	5.75
Energy consumption in the selected cycle of emissions A7 / W10-55 ⁵⁾	kWh	3.82	5.96
COPDHW A15/W10-55 ⁴⁾		3.25	3.38
COPDHW A7/W10-55 ⁵⁾		3.10	3.30
Power in standby mode ⁵⁾	W	24	20
Refrigerating agent		R134a (GWP 1430)	R134a (GWP 1430)
Quantity of refrigerant	kg	1.1	1.1
Operation area regular model	°C	-7 / +35	-7 / +35
Area of airflow	m ³ /h	220-450	220-450
Max acceptable pressure drop in the pipeline (volumetric flow rate of a at 330 m ³ /h) (60 %)	Pa	100	100
Electrical characteristics			
Specified power of the compressor	W	490	490
Heater power X	W	2490	2490
Number of heaters x power	W	2x 1000	2x 1000
Voltage	V/Hz	230 / 50	230/50
Electrical protection	A	16	16
Moisture protection		IP24	IP24
Water tank			
Anti-corrosion protection of tank		Enamelled / Magnesium protective anode	Enamelled / Magnesium protective anode
Nominal pressure	Mpa (bar)	0.6 (6) / 0.9 (9)/ 1(10)	0.6 (6) / 0.9 (9)/ 1(10)
Max. pressure (heat exchanger)	Mpa (bar)	-	1,2 (12)
Surface heat exchanger	m ²	-	2,7/-
Volume heat exchanger	l	-	17,0/-
Exchange power in continuous operation (maximum coil output ⁴⁾)	kW	-	74,1
Continuous power $\Delta T=35K$ ⁴⁾	l/hour	-	1821

Type		EcoWell 200	EcoWell 300
Max. temperatures			
Hot water tank (heat pump)	°C	65	65
Hot water tank (electr. resistance heating)	°C	75	75
Solar heat exchanger	°C	-	85
Dimensions, weights, connections			
Total height	mm	1540	1960
Width	mm	670	670
Depth	mm	690	690
Insulation (width)	mm	67	67
Inlet/outlet water connections		G1	G 1
Inlet/outlet air	mm	Ø160	Ø160
Heat exchanger connections		-	G 1
Net / gross / mass with water	kg	104/116/312	177/1189/453
Transport data			
Packaging	mm	800x800x1765	800x800x2155

¹⁾ directive 812/2013, 814/2013, EN16147:2011. Average climate conditions ²⁾ in accordance with EN16147:2011 ³⁾ in accordance with EN12102:2013 (60 % fan speed – outside air/40 % fan speed – ambient air) ⁴⁾ inlet air temperature 15 °C, 74 % humidity, water temperature between 10 and 55°C in accordance with EN16147:2011 ⁵⁾ inlet air temperature 7 °C, 89 % humidity, water temperature between 10 and 55 °C in accordance with EN16147:2011 ⁶⁾ low temperature mode, stated with the typical sign NT - if there is no sign, there is no low temperature operation ⁷⁾ installed heater, stated with the typical sign G - if there is no sign, there is no heater.

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