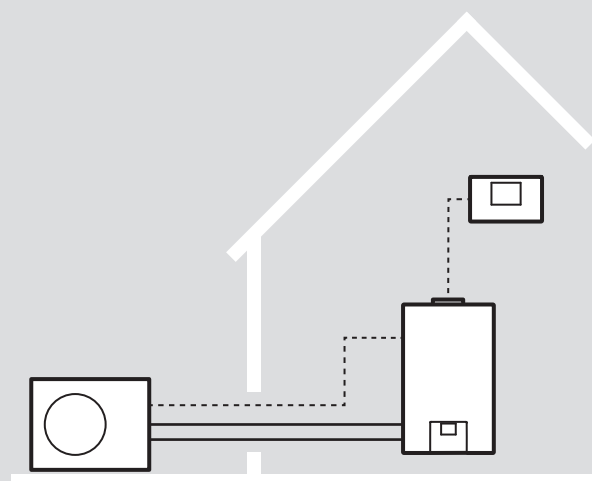




Heat pump system



Operating instructions

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1 Safety

1.1 Action-related warnings

Classification of action-related warnings

The action-related warnings are classified in accordance with the severity of the possible danger using the following warning symbols and signal words:

Warning symbols and signal words

**Danger!**

Imminent danger to life or risk of severe personal injury

**Danger!**

Risk of death from electric shock

**Warning.**

Risk of minor personal injury

**Caution.**

Risk of material or environmental damage

1.2 Intended use

In the event of inappropriate or improper use, damage to the products and other property may arise.

Below is a description of an air-to-water heat pump system with a monobloc design. The heat pump system consists of the following components:

Outdoor unit

The outdoor unit uses the outdoor air as a heat source and can be used to heat a residential building and for domestic hot water generation.

The air that escapes from the outdoor unit must be able to flow out freely, and must not be used for any other purposes.

The product is only intended for outdoor installation.

The product is intended exclusively for domestic use.

The product must not be damaged by sharp objects or naked flames.

Indoor unit

The indoor unit is the system component for controlling the heating circuits and domestic hot water generation in conjunction with the outdoor unit. It is controlled via the system control.

The product is only intended for indoor installation.

The product is intended exclusively for domestic use.

System control

The system control is the central switching point for controlling the heating installation with heat generators from the same manufacturer with an eBUS interface.

The system control controls based on the installed system:

- Heating
- Cooling
- Ventilation
- Domestic hot water generation
- Circulation

Internet gateway

The Internet gateway is used to control your heating installation.

The Internet gateway is connected to your router via Wi-Fi, and establishes an Internet connection for the heating installation.

Using the Internet gateway with a power supply unit cable other than the one supplied or the connection cable for connecting directly to the heat generator is considered to be improper use.

This system 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 product in a safe way and understand the hazards involved. Children must not play with the product. Cleaning and user maintenance work must not be carried out by children unless they are supervised. Any other use that is not specified in these instructions, or use beyond that specified in this document, shall be considered improper use. Any direct commercial or industrial use is also deemed to be improper.



1.3 Target group of the instructions

These operating instructions are intended for the end user.

1.4 General safety information

1.4.1 Risk of death caused by fire or explosion if there is a leak in the refrigerant circuit

The outdoor unit contains the odourless, flammable refrigerant R290 (safety assembly A3). In the event of a leak, escaping refrigerant may mix with air to form a flammable atmosphere. There is a risk of fire and explosion.

A protective zone is defined for the area close around the product; see the installation instructions for the outdoor unit.

- ▶ Ensure that there are no ignition sources, such as plug sockets, light switches, lamps, electrical switches or other permanent ignitions sources, in the protective zone.
- ▶ Do not use any sprays or other combustible gases in the protective zone.

1.4.2 Risk of death due to changes to the product or the product environment

- ▶ Never remove, bridge or block the safety devices.
- ▶ Do not tamper with any of the safety devices.
- ▶ Do not damage or remove any tamper-proof seals on components.
- ▶ Do not make any changes:
 - to the products
 - to the supply lines
 - to the drain pipework
 - to the expansion relief valve for the heat source circuit
 - to constructional conditions that may affect the operational reliability of the heat pump system
 - to the drain pipework

1.4.3 Risk of injury and material damage due to maintenance and repairs carried out incorrectly or not carried out at all

- ▶ Never attempt to carry out maintenance work or repairs on your heat pump system or the system components yourself.

1.4.4 Risk of burns due to hot surface

Due to the surface colour, the surface can heat up in direct sunlight and cause burns if touched.

- ▶ Do not touch the surface if the outdoor unit is exposed to direct sunlight for a long period of time.
- ▶ Only touch the surface if you can ensure that the surface is not hot. If necessary, wait until the outdoor unit is no longer exposed to direct sunlight and the surface has cooled down.

1.4.5 Frost

- ▶ Ensure that the heating installation always remains in operation during freezing conditions and that all rooms are sufficiently heated.
- ▶ If you cannot ensure the operation, have a competent person drain the heating installation.

1.4.6 Danger caused by improper operation

Improper operation may present a danger to you and others, and cause material damage.

- ▶ Carefully read the enclosed instructions and all other applicable documents, particularly the "Safety" section and the warnings.
- ▶ Only carry out the activities for which instructions are provided in these operating instructions.



2 Notes on the documentation

- ▶ Always observe all operating instructions that are enclosed with the installation components.
- ▶ Store these instructions and all other applicable documents for further use.

These instructions apply exclusively to heat pump systems with the following system components:

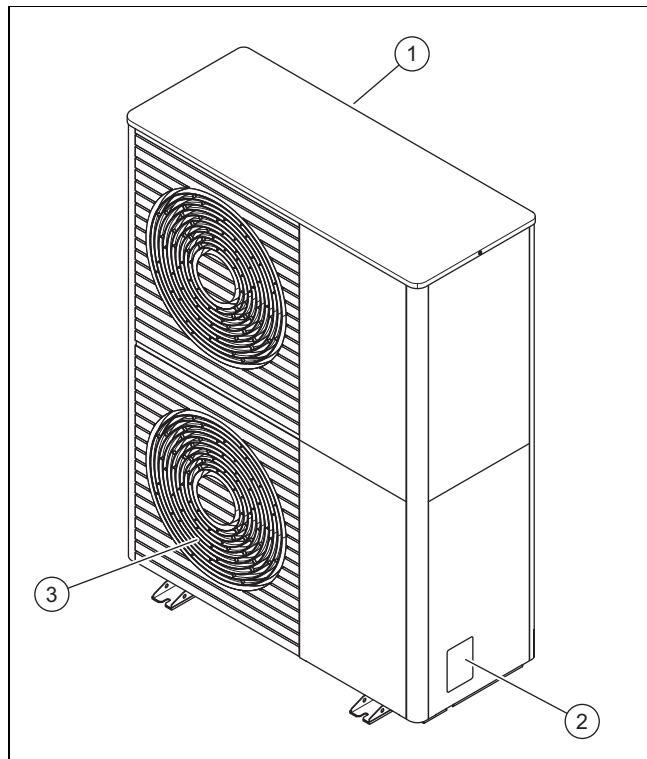
- System control:
 - sensoCOMFORT
- Indoor units:
 - Hydraulic station
 - Internet gateway
 - uniTOWER
 - Heat pump appliance interface
- Outdoor units:
 - aroTHERM plus
 - aroTHERM pro

2.1 Target group of the instructions

These operating instructions are intended for the end user of the heat pump system. Contents for the competent person are contained exclusively in the corresponding installation instructions.

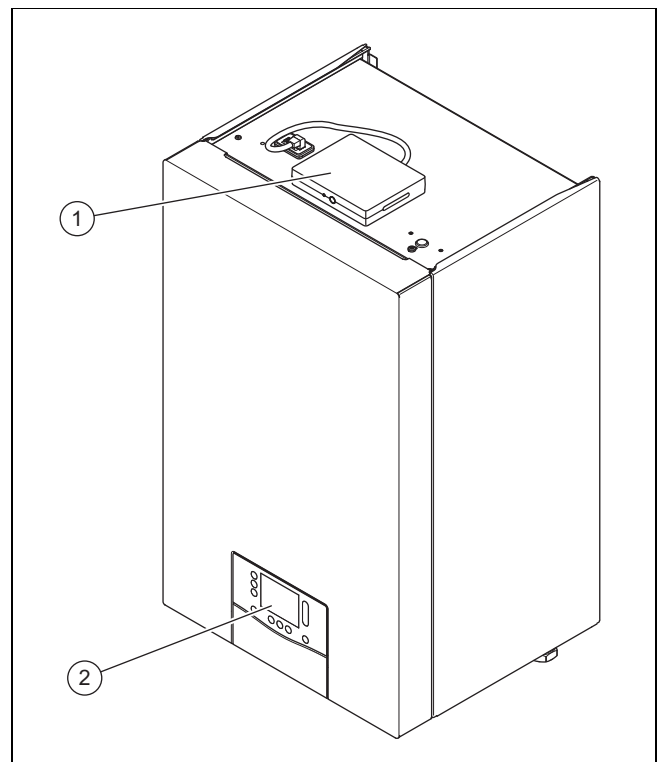
3 System description

3.1 Product design – outdoor unit



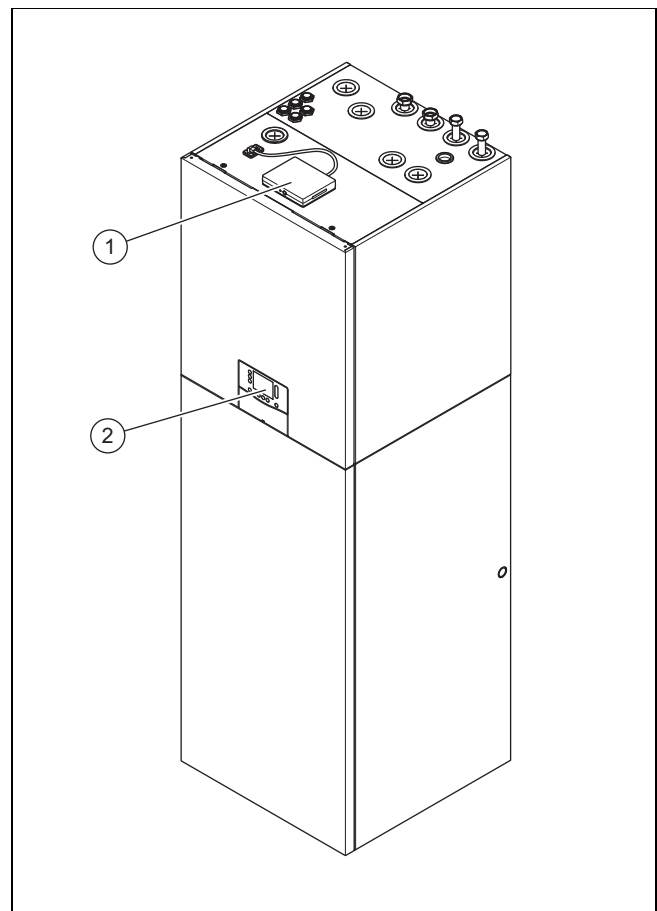
- 1 Air inlet side 3 Air outlet grille
2 Data plate

3.2 Product design – indoor unit (hydraulic station)



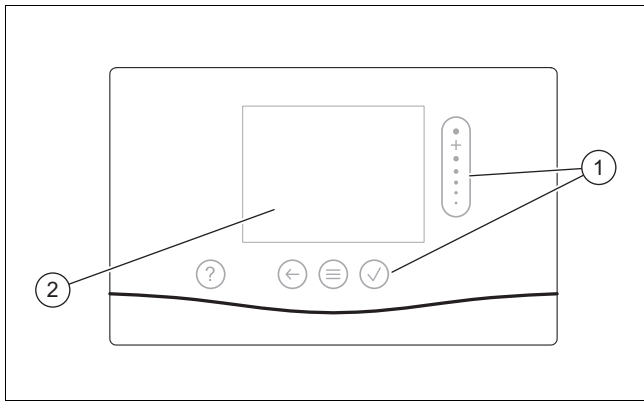
- 1 Internet gateway 2 Control elements

3.3 Product design – indoor unit (uniTOWER)



- 1 Internet gateway 2 Control elements

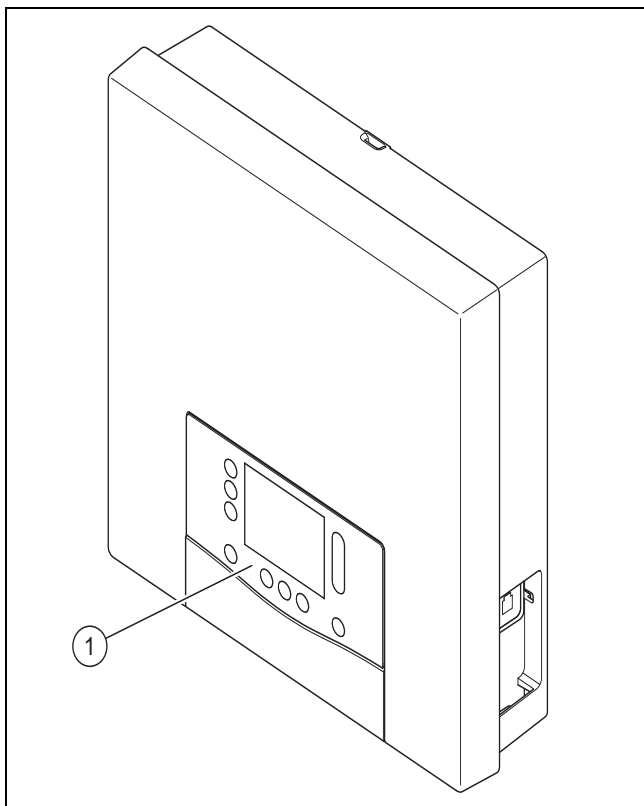
3.4 Product design – system control



1 Control elements

2 Display

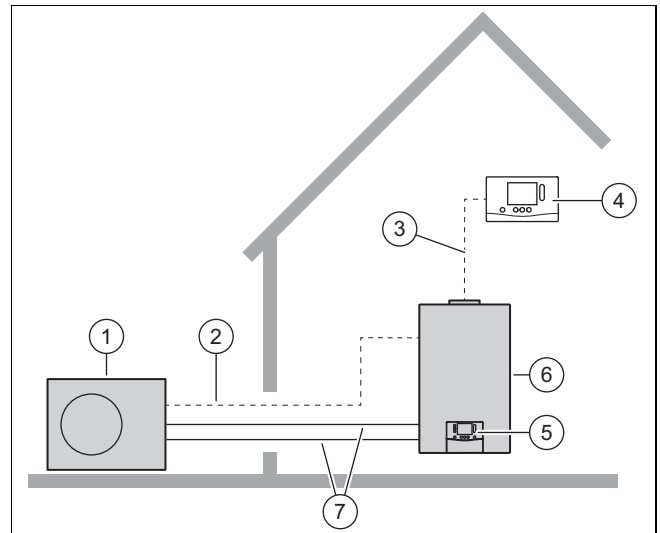
3.5 Product design – heat pump appliance interface



1 Control elements

3.6 Heat pump system

Design of a typical heat pump system with monobloc technology:



1 Heat pump | Outdoor unit

2 Communication cable

3 eBUS line

4 System control

5 Control for the indoor unit

6 Heat pump | Indoor unit

7 Heating circuit

3.7 Further information



► Scan the displayed code using your smartphone in order to view further information about your product.

◄ You are guided to the Internet portal.

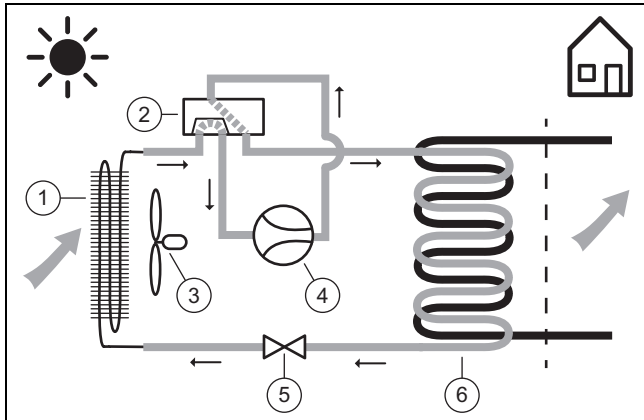
3.8 Functions of the heat pump

The outdoor unit has a closed refrigerant circuit in which refrigerant circulates.

Cyclic evaporation, compression, liquefaction and expansion takes in heat energy from the surroundings and transfers it to the building. In cooling mode, heat energy is extracted from the building and released into the environment.

3.9 Operating principle, heating mode/cooling mode

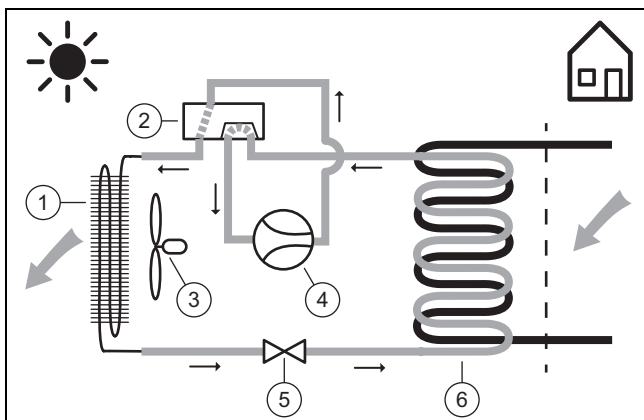
3.9.1 Heating mode



- | | | | |
|---|-----------------------|---|-----------------|
| 1 | Evaporator | 4 | Compressor |
| 2 | 4-port diverter valve | 5 | Expansion valve |
| 3 | Fan | 6 | Condenser |

The air-to-water heat pump consists of an indoor unit and an outdoor unit. The indoor unit, including the heat pump appliance interface, is located in the building and transfers heat to the heating installation. The outdoor unit is set up and installed outside the building. In the outdoor unit, heat is extracted from the ambient air. To achieve this, a fan draws in the ambient air through a heat exchanger (evaporator). In the evaporator, the heat energy of this ambient air is transferred to the refrigerant circuit. This is where the temperatures required for room heating and domestic hot water are generated.

3.9.2 Cooling mode



- | | | | |
|---|-----------------------|---|-----------------|
| 1 | Condenser | 4 | Compressor |
| 2 | 4-port diverter valve | 5 | Expansion valve |
| 3 | Fan | 6 | Evaporator |

For room cooling, the refrigerant circuit operates in reverse. Heat is extracted from your rooms and released into the ambient air via the evaporator. The compressor serves as the drive for the refrigerant circuit. The compressor requires only a small amount of electricity compared to the heat energy obtained from the air. This electricity is often provided by your energy supply company at a favourable tariff. Depending on the tariff conditions and the power supply, your energy supply company may temporarily interrupt the power supply to the heat pump (energy supply company lockout), e.g. if grid usage levels are high. In the event of an energy supply

company lockout, the electric back-up heater installed in the indoor unit can take over the heat supply to the building. This electric back-up heater is also switched on automatically if the heat pump's heat output is insufficient or if there is a fault with the heat pump.

3.10 System separation and frost protection (optional)

With a system separation, an intermediate heat exchanger is installed close to the indoor unit. This separates the heating circuit into a primary heating circuit (to the outdoor unit) and a secondary heating circuit (in the building).

If the primary heating circuit is filled with a brine as frost protection, the outdoor unit is protected against freezing, even if it has been switched off electrically or the power has failed.

3.11 Noise reduction mode

The outdoor unit has a noise reduction mode.

In noise reduction mode, the outdoor unit operates more quietly than in normal operating mode. This is achieved using a limited compressor rotational speed and an adjusted fan speed.

The maximum compressor speed in noise reduction mode is adjusted via the control panel for the indoor unit.

You can activate noise reduction mode on the system control via "Time period".

3.12 Frost protection function

The frost protection function for the system is controlled using the product itself or using the optional system control. If the system control fails, the product guarantees limited frost protection for the heating circuit.

At negative outdoor temperatures, there is an increased risk of the heating water freezing if a heat pump fault occurs, e.g. due to a power cut or a defective compressor.

3.13 Low-water pressure protection

This function continuously monitors the heating water pressure in order to prevent a possible loss of heating water.

3.14 Freeze protection

This function prevents the unit's internal heating circuit from freezing when the heating flow temperature drops below a certain value.

If the heating flow temperature of the outdoor unit falls below 4 °C, the compressor is switched on in order to increase the heating flow temperature.

3.15 Pump blocking protection

This function prevents the pumps for heating water from sticking. The pumps, which were out of operation for 23 hours, are switched on for 10 to 20 seconds, one after the other.

3.16 Safety cut-out (SCO) in the heating circuit

If the temperature in the heating circuit of the internal electric back-up heater exceeds the maximum temperature, the safety cut-out shuts down the electric back-up heater as a securing measure. After it is triggered, the safety cut-out must be replaced.

- Max. heating circuit temperature: 89 °C

4 Explanation of the functions

4.1 What is the effect of the frost protection function?

The frost protection function protects the heating installation and flat from frost damage.

At outdoor temperatures

- Below 4 °C for longer than four hours, the system control switches the heat generator on and regulates the target room temperature to at least 5 °C.
- Above 4 °C, the system control does not switch the heat generator on, but it monitors the outdoor temperature.

4.2 What do the following temperatures mean?

Desired temp. is the target room temperature to which you want to heat or cool the living rooms.

Set-back temp. is the level below which the temperature in the living rooms does not fall when outside of the time periods.

Flow temp. is the temperature at which the heating water leaves the heat generator.

Domestic hot water temperature is the temperature to which you want to heat the water in the domestic hot water cylinder.

4.3 What is a zone?

A building can be divided into multiple areas, which are known as zones. A different requirement can be placed on the heating installation in each zone.

Examples for dividing into zones:

- Underfloor heating (zone 1) and a radiator system (zone 2) are available in one building.
- A building is made up of several self-contained residential units. Each residential unit has its own zone.

4.4 What is the circulation?

An additional water pipe is connected to the domestic hot water pipe and forms a circuit with the domestic hot water cylinder. A circulation pump facilitates the continuous circulation of domestic hot water through the pipework system which means that hot water is immediately available, even at more distant draw-off points.

4.5 What is a fixed value control?

The system control regulates the flow temperature to two fixed temperatures, which are independent from the room or outdoor temperature. This control is suitable for a door air curtain or swimming pool heating, for example.

4.6 Prerequisites for heating mode

- The outdoor temperature must be lower than the temperature that the competent person has set.
- You have selected **Manual** or **Time-contr.** under **MENU | CONTROL | Zone | Heating | Mode:**.
- Domestic hot water mode is not active.
- The competent person has defined that a signal from an external control can deactivate the operation of a zone.
- The competent person has defined that an external signal can deactivate heating mode.

For heat pumps that are equipped with the cooling mode function, also note the following:

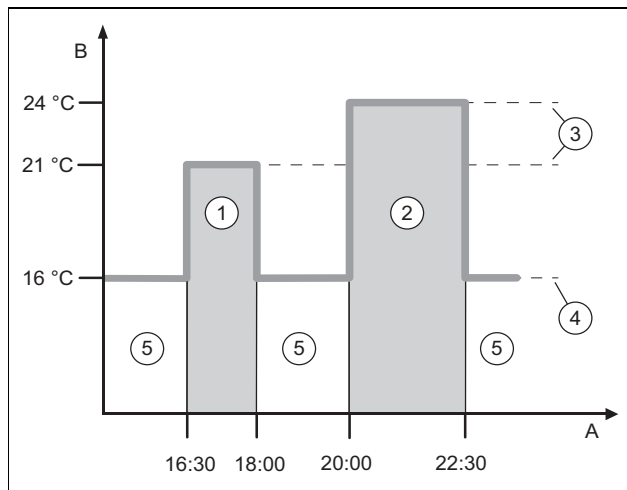
- The **Cooling for several days** function must be deactivated under **MENU | CONTROL**.
- The competent person has activated the **Automatic cooling:** function on the indoor unit's operator control unit. The function automatically switches between heating and cooling mode.
- The competent person has defined the **Ext. cooling mode**. A signal from an external control switches between heating and cooling mode. As long as no signal is present, heating mode is active.

4.7 Prerequisites for the cooling mode

- The heat pump is equipped with the cooling mode function.
- The competent person has set up the heat pump via the required functions for cooling mode.
- You have selected **Manual** or **Time-contr.** under **MENU | CONTROL | Zone | Cooling | Mode:**.
- Domestic hot water mode is not active.
- For the function, the competent person has defined that a signal from an external control can deactivate the operation of a zone.
- In the function, the competent person has defined that an external signal can deactivate cooling mode.
- One of the following conditions must be met:
 - The **Cooling for several days** function must be activated under **MENU | CONTROL**.
 - The competent person has activated the **Automatic cooling:** function on the indoor unit's operator control unit. The function automatically switches between heating and cooling mode.
 - The competent person has defined the **Ext. cooling mode** in the function. A signal from an external control switches between heating and cooling mode. As long as a signal is present, cooling mode is active.

4.8 What is meant by "time period"?

Example of heating mode in the mode: Time-controlled



A	Time	3	Desired temperature
B	Temperature	4	Set-back temperature
1	Time period 1	5	Outside of the time periods
2	Time period 2		

You can divide a day up into several time periods (1) and (2). Each time period can comprise an individual start time and end time. The time periods must not overlap. You can assign a different desired temperature (3) to each time period.

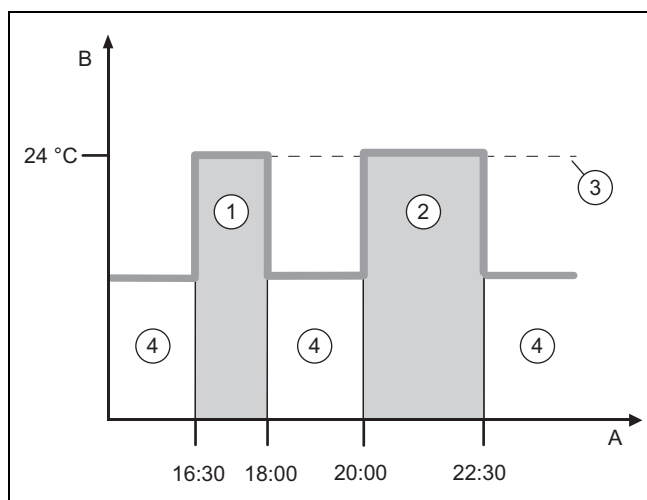
Example:

16:30 to 18:00; 21 °C

20:00 to 22:30; 24 °C

The living rooms are heated to the desired temperature within the time periods. In the times outside of the time periods (5), the living rooms are heated to the lower set-back temperature (4) that is set.

Example of cooling mode in the mode: Time-controlled



A	Time	2	Time period 2
B	Temperature	3	Desired temperature
1	Time period 1	4	Outside of the time periods

You can divide a day up into several time periods (1) and (2). Each time period can comprise an individual start time and end time. The time periods must not overlap. You can set a desired temperature (3) that is assigned to all time periods.

Example:

16:30 to 18:00; 24 °C

20:00 to 22:30; 24 °C

The living rooms are cooled to the desired temperature within the time periods. During the times outside of the time periods (4), the living rooms are not cooled.

You can set a time period for the following functions:

Function	Within the time period	Outside the time period
Room heating*	Your rooms are heated to normal room temperature or comfort room temperature.	Your rooms are heated at a reduced room temperature.
Room cooling*	Your rooms are cooled to normal room temperature or comfort room temperature.	Your rooms are not cooled.
Domestic hot water generation**	The domestic hot water generation is set. The potable water in the domestic hot water cylinder is heated to the target domestic hot water value.	Domestic hot water generation is switched off.
Circulation pump	The circulation pump is switched on.	The circulation pump is switched off.
Noise reduction mode	The speed of the fan and compressor is limited.	The maximum speed of the fan and compressor is enabled.

Information

*It is not recommended that you use time programmes for heating and cooling mode for systems with underfloor heating, as the system responds too slowly to temperature changes.

**If the house has a photovoltaic installation, it is worth scheduling the time periods for domestic hot water generation at midday to make better use of the photovoltaic energy.

4.8.1 Setting time periods

You can set time periods under **MENU | CONTROL | Zone**.

4.9 What does the hybrid manager do?

The hybrid manager calculates whether the heat pump or the additional boiler covers the heat demand cost-effectively. The decision-making criteria are the set tariffs in relation to the heat demand.

To ensure that the heat pump and the additional boiler can work effectively, you must enter the tariffs correctly. See **MENU | SETTINGS**. Otherwise, increased costs may arise.



Note

Please note that the cost-optimised triVAI function only applies to heating mode.

4.10 Preventing malfunctions

- ▶ Do not cover the system control with furniture, curtains or other objects.
- ▶ If the system control is installed in the living room, open all of the thermostatic radiator valves in this room fully.

4.11 What is a heat curve?

A heat pump works most efficiently when the flow temperature is only set as high as necessary. The best way to achieve this is to heat all rooms as evenly as possible and keep the temperature constant. If you heat via underfloor heating in particular, we do not recommend using a time period, e.g. for night set-back.

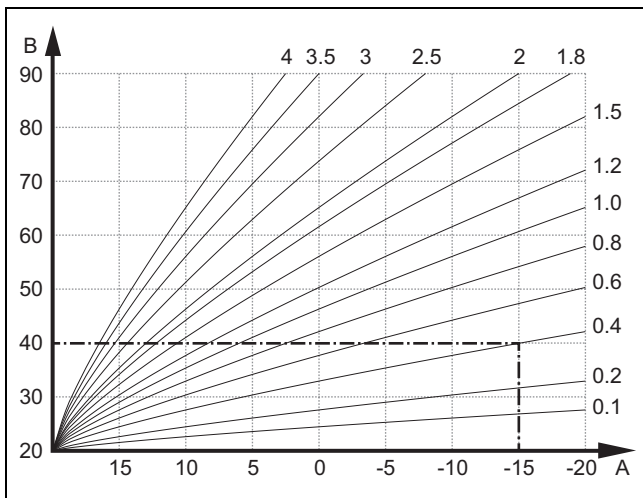
Please note that changing the target room temperature or the heat curve, especially if you have underfloor heating, does not affect the room temperature in the short term.

Before increasing the target room temperature or increasing the heat curve, check that all single room controls are fully open.

The heat curve can be changed on the system control or in the myVAILLANT app. The heat curve should only ever be adjusted in small increments (0.05). To reach your desired temperature as efficiently as possible, we recommend setting the heat curve as low as possible and gradually increasing it if the desired temperature is not reached.

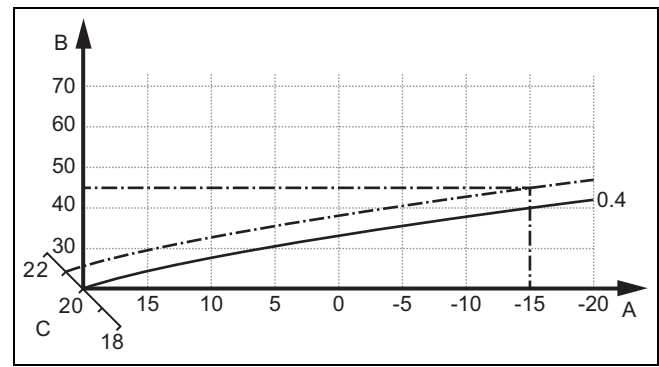
Typical adjustment ranges:

- Underfloor heating: 0.2–0.4
- Radiator: 0.5–1.0



A Outside temperature °C B Target flow temperature °C

The figure shows the possible heat curves of 0.1 to 4.0 for a target room temperature of 20 °C. If, for example, heat curve 0.4 is selected, a flow temperature of 40 °C is maintained at an outdoor temperature of -15 °C.



A Outdoor temperature °C C Target room temperature °C
B Target flow temperature °C

If the heat curve 0.4 is selected and 21 °C is specified for the target room temperature, the heat curve is then translated, as shown in the figure. The heat curve is displaced according to the value of the target room temperature along axis C, which is angled at 45°. At an outdoor temperature of -15 °C, the control system provides a flow temperature of 45 °C.

4.12 Domestic hot water presetting

With the default setting **Comfort**, domestic hot water is generated within the time period (**Mode: Time-controlled**) or permanently (**Mode: Manual**) at the set **domestic hot water temperature**. This setting is recommended if a specific domestic hot water temperature needs to be permanently maintained in the cylinder tank (e.g. use in apartment buildings).

If you select the default setting **Eco**, the temperature in the domestic hot water cylinder is reduced occasionally in order to save energy. Initially, for example at the start of a time period, the domestic hot water cylinder is heated to the set **domestic hot water temperature**. As this continues, domestic hot water is generated for a certain time at a reduced domestic hot water temperature after a significant draw-off (e.g. showering). You can set the value to **Reduced DHW temperature: °C**. If no domestic hot water is used for a prolonged period (more than 12 hours), the domestic hot water cylinder may cool down even more than usual.

Tip: Activate the **Hot water boost** function under **MENU | CONTROL** in order to heat the cylinder to the set **domestic hot water temperature** at any time.

4.13 Protective zone around the outdoor unit

A protective zone is set up around the outdoor unit. No building openings or ignition sources (e.g. plug sockets) may be located or retrofitted within this protective zone.

If, for structural reasons, the outdoor unit has been installed with a smaller protective zone and the Flexible Space Function has been activated for this reason, the outdoor unit must be permanently supplied with power (even for extended periods of absence) to ensure the protection mode remains effective. The power supply may only be interrupted briefly (e.g. for maintenance or repair work).

5 Operation

5.1 Prerequisites

- ▶ The outdoor unit was switched on via the corresponding disconnecter.
- ▶ The indoor unit was switched on via the corresponding disconnecter.
- ▶ The system control was switched on via the corresponding disconnecter.

5.2 Operating the system

You can operate the heat pump system using the system control or the myVAILLANT app.

The unit supports the control of one direct heating circuit and two mixed heating circuits. Up to 7 heat pumps can be operated in a cascade.

5.3 Starting up the Internet gateway

The Internet gateway connects the heating installation to the Internet by establishing a Wi-Fi connection to an existing router.

Via the Internet connection, it is possible to:

- Update the Internet gateway's firmware
- Use the functions of the myVAILLANT app
 - Operate the heating installation
 - Integrate the heating installation into a smart home system
 - Display consumption data and energy yields
 - Enable remote access to the heating installation by the specialist heating company



To be able to use the Internet gateway, the end user needs to install the app on a smartphone or tablet and create a user account.



Note

Further information on the product and the system can be found at www.myvaillant.com.

5.3.1 Checking the assembly and installation prerequisites

- ▶ Check:
 - Wi-Fi signal available
 - Routing and security parameters in the IP network: Ports 80, 123 and 443 enabled for outgoing connections
 - Dynamic IP addressing (**DHCP**) available
 - The installation site and cabling for the Internet gateway with the heat generator is not publicly accessible
 - Internet connection for permanent Internet communication is available
 - Wi-Fi router has an activated firewall
 - Wi-Fi network is encrypted, see technical data

- eBUS line accessible, if required

5.3.2 Observing the installation steps

1. Install the product.
2. Ensure that all additional system components, such as the control, are operating when you switch on the Internet gateway.

Condition: You want to connect the product to the Internet.

- ▶ Press and hold the button beside the LED for three to ten seconds.
 - ◁ The product is now in coupling mode for 15 minutes.
- ▶ For additional instructions, follow the myVAILLANT app.

5.3.3 Meaning of the LEDs

LED	Status	Meaning
Green	Flashing	The product starts.
Blue	Flashing rapidly	The product is in Wi-Fi coupling mode.
Blue	Lights up	The product is connected to the Internet and is ready for operation.
Green	Lights up	The product is ready for operation but is not connected to the Internet.
Blue	Flashing	Product software is updating.
Red	Lights up	Internet connection has been disconnected/fault.
Purple	Flashing three times	The product is identified via the Apple Home app.

5.3.4 Requesting licences

This product contains free and Open Source Software. The corresponding licence information is saved on the Internet gateway and can be displayed using the myVAILLANT app.

You can request the source code, for a processing fee, from the following address:

opensource@myvaillant.com

This offer applies for three years from the date of purchase, or at least for the time in which we offer support for the Internet gateway.

5.4 Guaranteeing frost protection for the outdoor unit

- ▶ If no system separation for guaranteeing the frost protection is present, ensure that the outdoor unit is switched on and remains switched on.
- ▶ Ensure that no snow accumulates around the air inlet grille and air outlet grille.
- ▶ Do not use any auxiliary equipment to accelerate the thawing process.



Note

If you observe a cloud of vapour on the outdoor unit, you do not have to do anything. This effect may arise during the thawing process.

5.5 Display of the energy consumption, energy yields and efficiencies

The indoor unit, the system control and the app show approximate values for energy consumption, energy yields and efficiencies, which are extrapolated based on calculation algorithms.

The values that are displayed in the app may differ from the other display options due to staggered transfer intervals.

The determined values depend on:

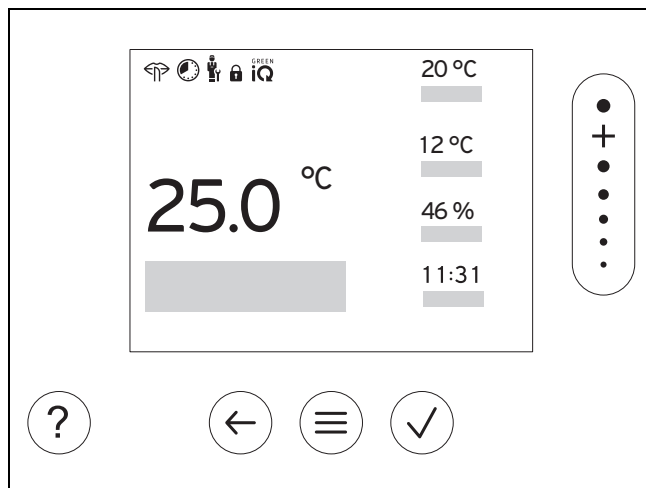
- Installation and system of the heating installation
- User behaviour
- Seasonal weather effects
- Various tolerances of unit-internal components

The recording of the values only includes the system in the factory-delivered condition. Supplementary accessories, even if they are installed on the product, as well as any other components in the heating system and other external consumers, are not part of the data recording. Deviations between the determined values and the actual values may be significant. These average values are therefore not suitable for creating or comparing energy billing, for example. When replacing the PCB, the values for energy consumption, energy yields and efficiencies are reset in the heat pump's control panel.

6 Configuring the settings

6.1 Display, control elements and symbols on the system control

The end user configures all the settings on the system control or in the myVAILLANT app.



6.1.1 Control elements

	– Calling up the menu – Back to the main menu
	– Confirming a selection/change – Saving set values
	– One level back – Cancelling input



- Navigating through the menu structure
- Reducing or increasing the set value
- Navigating to individual numbers/letters



- Calling up help
- Calling up the time programme assistant

Active control elements light up.

Press once: You access the basic display.

Press twice: You access the menu.

6.1.2 Symbols

	Time-controlled heating active
	Button lock active
	Maintenance required
	Fault in the heating installation
	Contact the competent person
	Noise reduction mode active
	Most energy-efficient heating mode active

6.2 Default settings

Factory setting	End user setting
Room heating/room cooling* Your rooms are heated to the "target room temperature" of 20 °C (normal room temperature) from 06:00 to 20:00. If a separate buffer cylinder is available, this buffer cylinder is heated.	
Domestic hot water generation The domestic hot water is heated to the "target domestic hot water temperature" of 55 °C every day from 06:00 to 20:00. Any circulation pump present is switched off. If required, the electric back-up heater installed in the indoor unit can be switched on to generate domestic hot water.	
Frost protection Frost protection of your heat pump, the domestic hot water cylinder and any separate buffer cylinder is guaranteed. Note At outdoor temperatures below -20 °C or in the event of a heat pump fault, only the electric back-up heater installed in the indoor unit is switched on to protect the installation against frost.	
Note *To ensure the most efficient operation possible, we do not recommend setting back the target room temperature at night, particularly in conjunction with underfloor heating.	

Factory setting	End user setting
Daylight saving changeover The changeover occurs automatically.	
Date and time Your competent person has set the date and time. You can change the settings to suit your individual requirements at any time.	
Power cut In the event of a power cut, all settings are retained.	
Note *To ensure the most efficient operation possible, we do not recommend setting back the target room temperature at night, particularly in conjunction with underfloor heating.	

6.3 Tips for setting the heat curve

Room temperature	Measure
You are too cold. The set target room temperature is achieved.	Increase the target room temperature.
You are too cold. The set target room temperature is not met/not continuously achieved.	Increase the heat curve.
You are too hot. The set target room temperature is achieved.	Reduce the target room temperature.
You are too hot. The set target room temperature is exceeded/not continuously achieved.	Reduce the heat curve.

7 Energy-saving tips

7.1 General energy-saving tips

You can even save energy by your general behaviour:

- ▶ Ventilate properly: Do not leave windows or French windows tilted open, but rather open the windows wide 3–4 times a day for 15 minutes. Turn down the thermostatic valves or the room control during ventilation.
- ▶ Use a ventilation system with heat recovery.
 - A ventilation system with heat recovery ensures that optimum air change in the building is constantly maintained (windows therefore do not need to be opened for ventilation purposes). If necessary, the quantity of air can be adjusted to individual requirements using the ventilation unit's remote control.
- ▶ To ensure that heated air can circulate properly in the room, do not shunt off radiators.
- ▶ Check that windows and doors are airtight and keep shutters and blinds closed at night, so that as little heat as possible is lost.
- ▶ If you install the system control in the room, do not obstruct it with furniture, etc., so that it can measure the circulating room air unhindered. This is particularly important if you use the **Room temperature modulation** function or, in cooling mode, the **Dew point monitoring** function.
- ▶ Use water sparingly, by taking a shower instead of a bath or promptly renewing the seals on dripping taps, for example.

7.2 Potential savings through the correct use of the system control

Further savings can be made by the correct use of the control system on your heat pump.

Also consult your specialist installation company. They will adjust your heating installation to suit your personal requirements.

- ▶ Only set the target room temperature to a level that is just sufficient for your personal comfort (e.g. 20 °C).
 - The heating flow temperature depends on the room temperature of the heating system. Each degree over and above 20 °C means an increase in energy consumption of around 6% per year.
- ▶ Turn down the thermostatic valves or the room control during ventilation.
- ▶ Set a heat curve of < 0.4 for underfloor heating systems. Radiator heating systems should be designed so that they can manage with a maximum flow temperature of 50 °C at the lowest outdoor temperature; this corresponds to a heat curve < 0.7.
- ▶ Set an appropriate domestic hot water temperature. Only heat the water to the temperature required for use.
 - Any further heating results in unnecessary energy consumption, and domestic hot water temperatures of more than 60 °C also lead to heavy scale deposition. We recommend generating domestic hot water without using the electric back-up heater; this means that the maximum domestic hot water temperature is predetermined by the high-pressure switch-off in the heat pump's refrigerant circuit. This switch-off corresponds to a maximum domestic hot water temperature of around 58 °C.
 - To ensure the domestic hot water is generated as efficiently as possible, we recommend not setting the target domestic hot water temperature above 50 °C. The optimum domestic hot water temperature depends on the size of your domestic hot water cylinder, your domestic hot water consumption and your individual comfort requirements with regard to the domestic hot water temperature.
- ▶ Set customised heating times.
- ▶ With a sensibly designed heating programme, you can ensure that all rooms in your home are heated uniformly and according to their use.
 - When you are away for extended periods, we recommend that you switch the heating to set-back mode.
- ▶ Heat uniformly:
 - Avoid large temperature differences between individual rooms.
 - If you heat all rooms evenly, the target room temperature in the living rooms can be achieved with the lowest possible heat curve.
- ▶ Use thermostatic valves:
 - Use thermostatic valves to purposefully reduce the temperature in individual rooms according to your personal needs. If the temperature is too high in all rooms, reduce the target room temperature using the system control or the myVAILLANT app.
- ▶ Adjust the operating times of the circulation pump to the actual demand.
- ▶ Set the temperature for limp home mode as low as possible so that you notice a distinct loss of comfort in the event of a fault and you are alerted to a problem. Failure

to do so can result in the electric back-up heater running for a long time at significant expense.

8 Fault and maintenance messages

Fault

How to respond if the heat pump fails

The system control switches to limp home mode, i.e. the electric back-up heater supplies the heating installation with heating energy. During installation, the competent person has restricted the temperature for limp home mode. You can feel that the domestic hot water and heating are not becoming very hot.

You can select one of the following settings until the competent person arrives:



Note

Domestic hot water mode: Only when a domestic hot water cylinder is connected

Off: The heating and domestic hot water only become moderately hot.

Heating: The electric back-up heater takes over the heating mode; the heating becomes hot and the domestic hot water is cold.

DHW: The electric back-up heater takes over the domestic hot water mode; the domestic hot water becomes hot and the heating is cold.

DHW + heat.: The electric back-up heater takes over the heating and domestic hot water mode; the heating and domestic hot water become hot.

The electric back-up heater is not as efficient as the heat pump, meaning that using only the electric back-up heater to generate heat is expensive.

If the product will no longer start up, check whether the power supply is interrupted. If required, switch on all of the disconnectors to which the product is connected in the building.

Troubleshooting (→ Appendix B.1)

Fault message



with the text of the fault message appears in the display.

- ▶ Always contact your competent person in the event of a fault message.

Maintenance message



with the text of the maintenance message appears in the display.

Maintenance message (→ Appendix B2)

- ▶ Inform your competent person.

9 Care and maintenance

9.1 Maintaining components

9.1.1 Outdoor unit

Keeping the outdoor unit clear

- ▶ Regularly remove branches and leaves that have gathered around the product.
- ▶ Regularly remove leaves and dirt from the ventilation grille below the product.
- ▶ Regularly remove snow from the air inlet grille and from the air outlet grille.
- ▶ Regularly remove snow that has gathered around the product.

Cleaning the outdoor unit

- ▶ Clean the casing with a damp cloth and a little solvent-free soap.
- ▶ Do not use sprays, scouring agents, detergents, solvents or cleaning agents that contain chlorine.

9.1.2 Indoor unit

- ▶ Clean the casing with a damp cloth and a little solvent-free soap.
- ▶ Do not use sprays, scouring agents, detergents, solvents or cleaning agents that contain chlorine.

9.1.3 System control

- ▶ Clean the casing with a damp cloth and a little solvent-free soap.
- ▶ Do not use sprays, scouring agents, detergents, solvents or cleaning agents that contain chlorine.

9.2 Maintenance

9.2.1 Outdoor unit



Danger!

Risk of injury and risk of material damage due to neglected or incorrect maintenance and repairs.

Neglected or incorrect maintenance work or repairs may lead to personal injury or damage to the product.

- ▶ Never attempt to carry out maintenance work or repairs on the product.
- ▶ Employ an authorised installation company to complete such work. We recommend making a maintenance contract.

9.2.2 Indoor unit

Regular inspection and maintenance of the product by a competent person is required to ensure that the product is permanently ready and safe for operation, reliable, and has a long service life. The inspection may require maintenance to be carried out earlier, depending on the results.

10 Decommissioning

Outdoor unit

- ▶ Use the partition that is installed on-site (e.g. fuses or power switches) to disconnect the product from the power supply.
- ▶ Protect the outdoor unit against frost.

Indoor unit

- ▶ Use the partition that is installed on-site (e.g. fuses or power switches) to disconnect the product from the power supply.
- ▶ Protect the indoor unit against frost.

System control

- ▶ Disconnect the eBUS line from the system control.

Internet gateway

- ▶ Deactivate the product in the myVAILLANT app.
- ▶ Reset the product to its factory settings by pressing and holding the button next to the LED for at least 10 seconds.
 - ◁ The LED goes out as soon as the resetting process starts.
 - ◁ Your information and settings are deleted.
 - ◁ The connection to the coupled wireless room thermostat is deleted.
- ▶ Decommission the product.

11 Recycling and disposal

This product is an electrical or electronic unit within the context of EU Directive 2012/19/EU. The unit was developed and manufactured using high-quality materials and components. These can be recycled and reused.

Find out about the regulations that apply in your country regarding the separate collection of waste electrical or electronic equipment. Correctly disposing of old units protects the environment and people against potential negative effects.

Disposing of the packaging

- ▶ Dispose of the packaging correctly.
- ▶ Observe all relevant regulations.

Disposing of the product

- ▶ Dispose of the product and its accessories correctly.
- ▶ Observe all relevant regulations.



■ If the product is labelled with this mark:

- ▶ In this case, do not dispose of the product with the household waste.
- ▶ Instead, hand in the product to a collection centre for waste electrical or electronic equipment.

Deleting personal data

Personal data (e.g. online login details) may be misused by unauthorised third parties.

If the product contains personal data:

- ▶ Ensure that there is no personal data on or in the product before you dispose of the product.

12 Arranging disposal of refrigerant

The outdoor unit is filled with R290 refrigerant.

- ▶ Refrigerant must only be disposed of by an authorised competent person.
- ▶ Observe the general safety information.

13 Guarantee and customer service

www.vaillant.co.uk

No software is perfect and, for that reason, we are always working on additional improvements for you. If you find indications of a flaw or of a safety issue, please notify us by sending a message to: secure@myvaillant.com

Appendix

A Operating and display functions



Note

The functions described in this section are not available for all system configurations.

To call up the menu, press  twice.

A.1 Menu item CONTROL

MENU

CONTROL		
Zone		
Heating		
Mode:		
Manual		Uninterrupted retention of the desired temperature
Desired temperature: °C		What do the different temperatures mean? (→ Section 4.2) Own setting:
Time-contr.		What is meant by "time period"? (→ Section 4.8)
Weekly planner		Up to 12 time periods and desired temperatures can be set per day. The competent person sets how the heating installation behaves outside of the time period in the Set-back mode : function. In Set-back mode : means: – Eco: The heating is switched off outside of the time periods. Frost protection is activated. – Normal: The set-back temperature applies outside of the time periods. The Desired temperature: °C applies within the time periods.
Desired temperature: °C		What do the different temperatures mean? (→ Section 4.2) Own setting:
Set-back temperature: °C		What do the different temperatures mean? (→ Section 4.2) Own setting:
Off		Heating is switched off, domestic hot water continues to be available, frost protection is activated
Cooling		
Mode:		
Manual		Uninterrupted retention of the desired temperature
Desired temperature: °C		What do the different temperatures mean? (→ Section 4.2) Own setting:
Time-contr.		What is meant by "time period"? (→ Section 4.8)
Weekly planner		Up to twelve time periods can be set per day The Desired temperature: °C applies within the time periods. Cooling is switched off outside of the time periods.
Desired temperature: °C		What do the different temperatures mean? (→ Section 4.2) Own setting:
Off		Cooling is switched off, domestic hot water remains available.
Name of zone		Changing the name Zone 1 , which was set at the factory
Absence		During this time, heating mode runs at the defined set-back temperature. Domestic hot water mode and circulation are switched off. Frost protection is activated; existing ventilation runs at the lowest level. Factory setting: Set-back temperature: °C 15 °C
All		Applies for all zones within the specified time period.
Zone		Applies for the selected zone in the specified time period.

Cooling for several days		Cooling mode is activated in the specified time period; cooling mode and desired temperature are used from the Cooling function
Fixed value control, circuit 1		
Mode:		
	Manual	Uninterrupted retention of the Target flow temp., desired: °C that the competent person set beforehand.
	Time-contr.	What is meant by "time period"? (→ Section 4.8)
	Weekly planner	Up to twelve time periods can be set per day Within the time periods, the Target flow temp., desired: °C is used. Outside of the time periods, the Target flow temp., set-back: °C is used or the heating circuit is switched off. At a Target flow temp., set-back: °C = 0 °C , the frost protection can no longer be guaranteed. The competent person sets both of these temperatures beforehand.
	Off	The heating circuit is switched off.
DHW		
DHW presetting:		Setting the behaviour for domestic hot water mode Factory setting: Comfort
	Comfort	Domestic hot water is generated at the set desired temperature.
	Eco	Domestic hot water is generated for a certain time at a reduced domestic hot water temperature after a significant draw-off (e.g. showering). In addition, domestic hot water may cool down more quickly than usual, particularly if it is not used for a prolonged period.
Mode:		
	Manual	Uninterrupted retention of the domestic hot water temperature
	DHW temperature: °C	What do the different temperatures mean? (→ Section 4.2) Own setting:
	Reduced DHW temperature: °C	Set the domestic hot water temperature to which water should be heated after a significant draw-off (e.g. showering). Factory setting: 49 °C Own setting:
	Time-contr.	What is meant by "time period"? (→ Section 4.8)
	Domestic hot water weekly planner	Up to three time periods can be set per day Within the time periods, the DHW temperature: °C is used. Domestic hot water mode is switched off outside of the time periods.
	DHW temperature: °C	What do the different temperatures mean? (→ Section 4.2) Own setting:
	Reduced DHW temperature: °C	Set the domestic hot water temperature to which water should be heated after a significant draw-off (e.g. showering). Factory setting: 49 °C Own setting:
	Circulation weekly planner	Up to three time periods can be set per day The circulation pump pumps hot water to the draw-off points within the time periods Outside of the time periods, the circulation pump is switched off
	Off	Domestic hot water mode is switched off.
DHW circuit 1		
Mode:		
	Manual	Uninterrupted retention of the domestic hot water temperature
	DHW temperature: °C	What do the different temperatures mean? (→ Section 4.2)
	Time-contr.	What is meant by "time period"? (→ Section 4.8)
	Domestic hot water weekly planner	Up to three time periods can be set per day Within the time periods, the DHW temperature: °C is used. Domestic hot water mode is switched off outside of the time periods
	DHW temperature: °C	What do the different temperatures mean? (→ Section 4.2)

	Off	Domestic hot water mode is switched off.
	Hot water boost	Heating up the water in the cylinder once
	Ventilation	
	Mode:	
	Normal	Uninterrupted ventilation at ventilation level: Normal
	Normal ventilation level:	Ventilation level for normal operating mode at average room air load with two to four people.
	Time-contr.	
	Weekly planner	Up to twelve time periods can be set per day Within the time periods, the Normal ventilation level: is used. Outside of the time periods, the Reduced ventilation level: is used.
	Normal ventilation level:	Ventilation level for normal operating mode at average room air load with two to four people.
	Reduced ventilation level:	Ventilation level for prolonged absence in order to reduce the energy consumption.
	Reduced	Uninterrupted ventilation at ventilation level: Reduced
	Heat recovery:	
	On	Uninterrupted recovery of the heat from the extract air
	Auto	Internal check of whether the outdoor air is guided via the heat recovery or directly into the living room. See the operating instructions for the ventilation unit.
	Off	Heat recovery is switched off
	Air quality limit: ppm	The ventilation unit keeps the CO ₂ content in the room air below the set value.
	Ventilation boost	Heating mode is switched off for 30 minutes and, if available, the ventilation unit runs at the highest ventilation level.
	Humidity prevention	When the Max. room air humidity: %rel is exceeded, the dehumidifier switches on. If the value is not reached, the dehumidifier switches off.
	Max. room air humidity: %rel	Target value for the humidity prevention function
	Time programme assistant	Programming of the desired temperature for Monday–Friday and Saturday–Sunday; the programming applies for the time-controlled Heating Cooling, DHW, Circulation and Ventilation functions Overwrites the weekly planner for the Heating, Cooling, DHW, Circulation and Ventilation functions
	Green iQ:	Switching on the most energy-efficient heating mode, if your installation supports this.
	Installation off	Installation is switched off. Frost protection and, if available, ventilation remain activated at the lowest level.

A.2 Menu item INFORMATION

MENU

	INFORMATION	
	Ext. power reduction:	Display whether a signal from the energy supply company about the power reduction for your installation is active, inactive or not available.
	Ext. energy manager status:	Active means: The external Energy Manager has taken over the control. The system control displays a reduced selection of functions.
	Current temperatures	
	Zone	Current room temperature in the zone
	DHW temperature	Current temperature in the domestic hot water cylinder
	DHW circuit 1	Current temperature in domestic hot water cylinder circuit 1
	Water pressure: bar	Current water pressure in the heating installation
	Current room air humidity	Current room air humidity, measured using the installed humidity sensor

Energy data		Display of the energy consumption, energy yields and efficiencies App, boiler and system control display estimated values for energy consumption, energy yields and efficiencies based on an extrapolation. The displayed values in the app may differ based on the different update intervals when compared to the displays in the control panels for the boilers and system control. Among other things, the values depend on: – Installation and type of heating installation – User behaviour – Seasonal influences – Tolerances and components External consumers and generators in the household (e.g. ext. heating pumps or valves) are not taken into consideration. Deviations between the displayed values and the actual values may be considerable; the specifications are therefore not suitable to be used to create or compare energy billing.
	Solar yield	Energy yield of the connected solar system
	Environmental yield	Energy yield of the heat source installation for the connected heat pumps
	Power consumption	The installation's electrical energy consumption based on the respective system function and/or the overall installation
	Heating	Current month, Last month, Current year, Last year, Total
	DHW	Current month, Last month, Current year, Last year, Total
	Cooling	Current month, Last month, Current year, Last year, Total
	Installation	Current month, Last month, Current year, Last year, Total
	Fuel consumption	The installation's fuel consumption based on the respective system function and/or the overall installation
	Heating	Current month, Last month, Current year, Last year, Total
	DHW	Current month, Last month, Current year, Last year, Total
	Installation	Current month, Last month, Current year, Last year, Total
	Heat recovery	Amount of energy saved by the ventilation unit
	Burner status:	Current burner status of the connected boiler
	Air quality sensor 1:	Measures the CO ₂ content of the room air
	Control elements	Explanation of the control elements
	Menu introduction	Explanation of the menu structure
	Competent person contact info	The competent person can store their telephone number.
	Phone number	
	Company	
	Serial number	Identification of the product. The 7th to 16th digits of the serial number form the article number

B Troubleshooting, maintenance message

B.1 Troubleshooting

Symptom	Possible cause	Measure
Display remains dark	Software error	1. Press and hold the button on the top right of the system control for longer than five seconds in order to force a re-start. 2. Switch off the mains switch on all heat generators for approx. 1 minute and then switch them on again. 3. If the fault message persists, inform the competent person.
No changes in the display can be made via the control elements	Software error	1. Press and hold the button on the top right of the system control for longer than five seconds in order to force a re-start. 2. Switch off the mains switch on all heat generators for approx. 1 minute and then switch them on again. 3. If the fault message persists, inform the competent person.
Display: Button lock activated , it is not possible to change the settings or values	Button lock is active	► Press the button on the top right of the system control for approx one second in order to deactivate the button lock.

Symptom	Possible cause	Measure
Display: Mode: Back-up heater if fault occurs Heat pump (call the comp. person) , insufficient heating-up of the heating and the domestic hot water	Heat pump does not work	1. Inform the competent person. 2. Select the setting for limp home mode until the competent person arrives. 3. You can find more detailed explanations under Faults, fault messages and maintenance messages (→ Section 8).
Display: F. Boiler fault , the specific fault code (e.g. F.33) with the specific boiler is shown in the display	Boiler fault	1. Reset the boiler by first selecting Reset and then Yes. 2. If the fault message persists, inform the competent person.
Display: You do not understand the set language	Incorrect language set	1. Press  twice. 2. Select the last menu item ( SETTINGS) and confirm by pressing . 3. Under  SETTINGS, select the second menu item and confirm by pressing . 4. Select the language that you understand and confirm by pressing .

B.2 Maintenance messages

#	Code/meaning	Description	Maintenance work	Interval	
1	Water deficiency: Follow the instructions in the heat gen.	The water pressure is too low in the heating installation.	Refer to the operating instructions for the relevant heat generator for information on filling with water	See the operating instructions for the heat generator	

C Serial number

You can call up the serial numbers under **MENU | INFORMATION | Serial number**. The 10-digit article number is located in the second line.

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