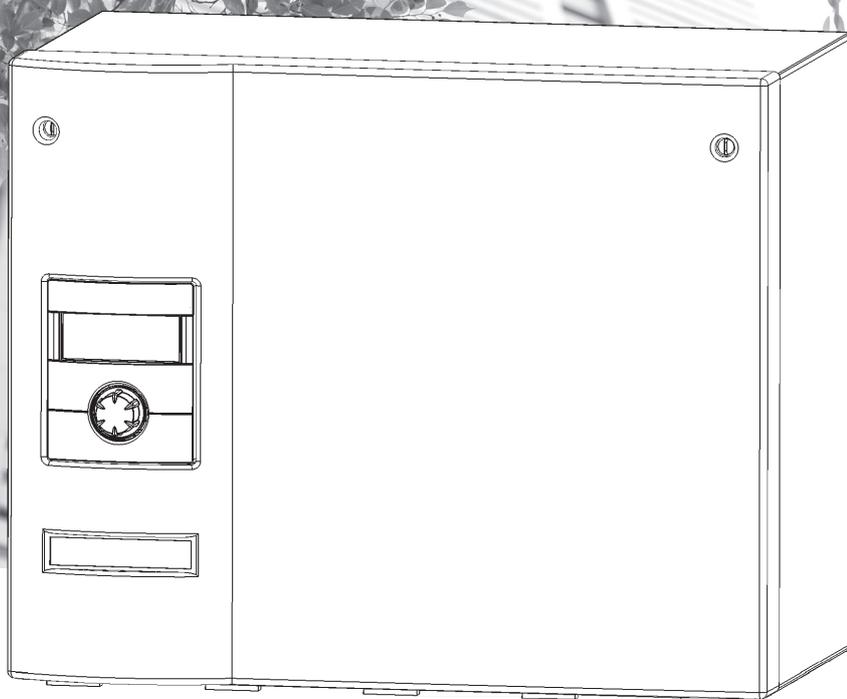


*the better way to heat*



Domestic hot water heat pump

# Operating Manual

## WWB 21





## Please read first

This operating manual provides important information on handling the unit. It is an integral part of the product and must be kept ready to hand in the immediate vicinity of the unit. It must remain available throughout the entire useful life of the unit. It must be handed over to subsequent owners or users of the unit.

Read the operating manual before starting any work on or with the unit. Especially the chapter on safety. Follow all instructions in full and unreservedly.

This operating manual may contain descriptions, which seem incomprehensible or unclear. If you have any questions or anything is still unclear, contact the factory's customer service department or the manufacturer's local partner.

As this operating manual has been written for several types of unit, always keep to the parameters that apply to the respective type of unit.

This operating manual is intended only for persons assigned to work on or with the unit. Treat all its constituent parts confidentially. They are protected by copyright. They may not be reproduced, transmitted, copied, stored in electronic systems or translated into another language, either wholly or in part, without the express written permission of the manufacturer.

## Symbols

The following symbols are used in the operating manual. They have the following meaning:



Information for users.



Information or instructions for qualified technicians.



### **DANGER**

Indicates imminent danger, which results in severe injuries or death.



### **WARNING**

Indicates a potentially dangerous situation, which could result in severe injuries or death.



### **CAUTION**

Indicates a potentially dangerous situation, which could result in moderate or slight injuries.



### **IMPORTANT**

Indicates a potentially dangerous situation, which could result in property damage.



### **NOTE**

Emphasised information.



### **ENERGY SAVING TIP**

Indicates advice, which helps to save energy, raw materials and costs.



Reference to other sections of the operating manual.



Reference to other documents of the manufacturer.



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## Intended use

The unit is to be used solely for its intended purpose. This means:

- for domestic water heating.

The unit must be operated only within its technical parameters.

 “Technical data/scope of supply” overview.

## Disclaimer

The manufacturer is not liable for any losses resulting from use other than is intended (abnormal use).

The manufacturer's liability also expires:

- if work is carried out on the unit and its components contrary to the instructions in this operating manual.
- if work is improperly carried out on the unit and its components.
- if work is carried out on the unit, which is not described in this operating manual, and this work has not been explicitly approved by the manufacturer in writing.
- if the unit or components in the unit have been altered, modified or removed without the explicit written consent of the manufacturer.

## EC conformity

The unit bears the CE marking.

 EC Declaration of Conformity

## Safety

The unit is safe to operate for its intended use. The design and workmanship of the unit conform to current state of the art standards, all relevant DIN/VDE regulations and all relevant safety regulations.

Every person who carries out work on the unit must have read and understood the operating manual before starting the work. This also applies if the person concerned has already worked with such a unit or a similar unit or has been trained by the manufacturer.

Every person who carries out work on the unit must comply with the relevant local accident prevention and safety regulations. This especially applies to the wearing of personal protective clothing.



### **DANGER**

**Risk of fatal electric shock!**

**All electrical connection work must be carried out by qualified electricians only.**

**Before opening the unit, safely disconnect the system from the power supply and prevent it from being switched back on!**



### **WARNING**

**Only qualified personnel (trained heating, refrigerating system and electricians) may carry out work on the unit and its components.**



### **WARNING**

**Unit contains refrigerant!**

**Leaking refrigerant could result in personal injury and environmental damage.**

**Therefore:**

- **Switch off system**
- **Thoroughly ventilate installation room**
- **Notify the manufacturer's authorised service centre**



### **IMPORTANT**

For safety reasons:

Never disconnect the unit from the power supply, unless the unit is being opened.



## Contact

Addresses for purchasing accessories, for service cases or for answers to questions about the unit and this operating manual can be found on the internet and are kept up-to-date:

Germany: [www.alpha-innotec.de](http://www.alpha-innotec.de)  
EU: [www.alpha-innotec.com](http://www.alpha-innotec.com)

## Warranty/Guarantee

For warranty and guarantee provisions, please refer to your purchase documents.

Please contact your dealer about all matters concerning warranties and guarantees.

## Disposal

When withdrawing the old unit from service, always comply with the relevant local laws, guidelines, directives and standards concerning the recovery, recycling and disposal of the operating materials and components of chillers.

 "Dismantling".

## Area of use

Taking into consideration the ambient conditions, limits of use, hydraulic requirements, manufacturer's specifications and the relevant regulations, the WWB 2I can be used in new or existing domestic hot water systems for domestic water heating.

 "Technical data/Scope of delivery" overview.

 Hydraulic connections

## Operation

Your decision to purchase a heat pump is a long-term contribution to protecting the environment through low emissions and reduced primary energy use.

Pay particular attention to the following, to ensure that your heat pump or heat pump system operates efficiently and in an environmentally friendly way:



### ENERGY SAVING TIP

Do not set the domestic hot water temperature higher than necessary. The unit operates most efficiently at low domestic hot water temperatures ( $\approx 45^\circ\text{C}$ ). Local regulations must be observed.

You operate and control the heat pump using the control panel of the controller.

## Care of the unit

You can clean the outer surfaces of the unit with a damp cloth and proprietary household cleaning products.

Do not use cleaning or care products that contain abrasives, acids and/or chlorine. Such products would irreparably damage the surfaces and could also cause technical damage to the unit.



## Maintenance of the unit

The cooling circuit of the heat pump requires no regular maintenance.

According to EU regulation (EC) 517/2014, leak inspections and maintenance of a log book are required by law for certain heat pumps!

 Log book for heat pumps, Section "Information on use of the log book".

The components of the domestic hot water charging circuit and the heat source (valves, expansion vessels, circulation pumps, filters, dirt traps) should be inspected and as and when needed, however, at least annually, by qualified personnel (heating or refrigerating system fitters).

It is best to arrange a maintenance agreement with a heating installation company. It will arrange for the required maintenance at regular intervals.

### CLEANING AND FLUSHING UNIT COMPONENTS



#### CAUTION

**Unit components may be cleaned and flushed only by customer service personnel authorised by the manufacturer. Only use liquids recommended by the manufacturer.**

**After flushing the evaporator and condenser with chemical cleaning agents, residues must be neutralised and flushed intensively with water. Always note and follow the technical data of the respective heat exchanger manufacturer.**

## Malfunctions

In the event of a fault, you can read out the cause of the fault from the controller's diagnostics program.

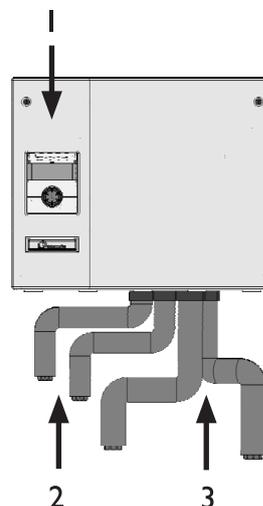


#### WARNING

**Only customer service personnel authorised by the manufacturer may carry out service and repair work on the unit's components.**

## Scope of supply

Included in the scope of supply:



- 1 Heat pump with integrated controller
- 2 2 corrugated pipes for vibration isolation of heat source including seals
- 3 2 corrugated pipes for vibration isolation of domestic hot water charging circuit including seals

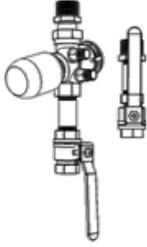
- Drilling template
- Isolation set for crossovers between corrugated pipes and heat pump
- 4 screws 5x12 (for fixing the heat pump module)

- ① Check the delivery for outwardly visible signs of damage.
- ② Check to ensure that the delivery is complete. Any delivery damage or incorrect deliveries must be reported immediately.



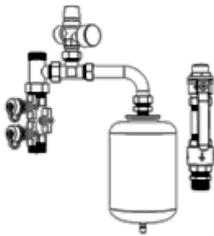
## INSTALLATION PACKAGES

### INSTALLATION PACKAGE IPB P (PRIMARY) ACCESSORIES



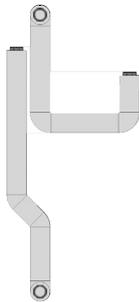
2 ball valves (1/2" internal thread),  
Flow control valve with automatic, differential  
pressure-independent flow control, installation  
fittings, thermostatic valve 230 V NC

### INSTALLATION PACKAGE IPB S (SECONDARY) ACCESSORIES



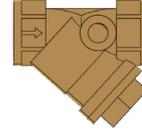
Flushing device (1" external thread), safety  
valve, pressure gauge, shut-off devices,  
non-return valve (1" external thread),  
Expansion vessel, installation fittings

### INSTALLATION PACKAGE IPB 202 (WWSB 202) ACCESSORIES

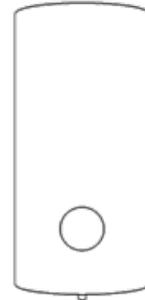


2 corrugated stainless steel pipes with seals and  
insulation for connecting the WWSB 202 to  
the WWB 21 (both sides with union nuts 1")

### INSTALLATION PACKAGE IPB SB (DIRT TRAP) ACCESSORIES

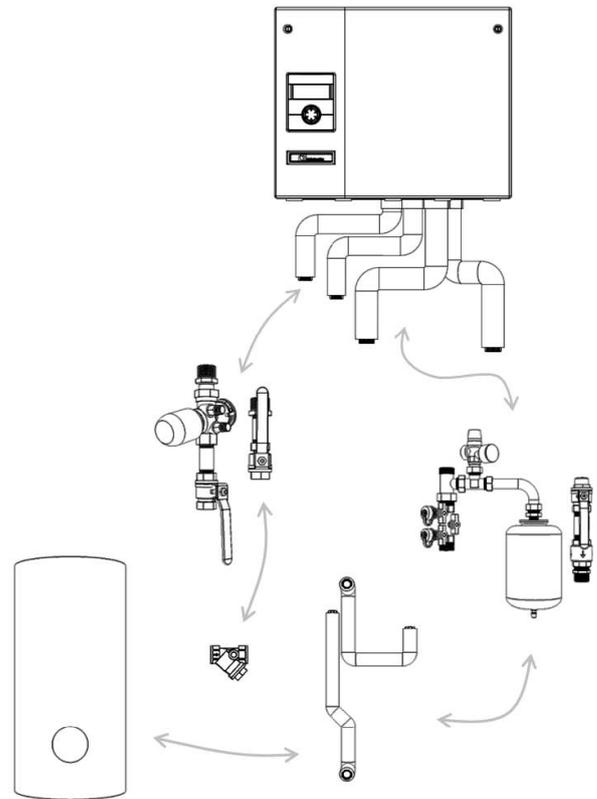


### DOMESTIC HOT WATER TANK (200L) WWSB 202 ACCESSORIES



2.15m<sup>2</sup> heat exchanger, Heating water connection  
R1", Cold water connection R1" Circulation R 3/4"

### SUGGESTED INSTALLATION:





# Installation

The following applies to all work to be done:

**i NOTE**  
Always comply with the relevant local accident prevention regulations, statutory regulations, guidelines and directives.

## INSTALLATION ROOM

**! IMPORTANT**  
Install the heat pump inside buildings only. The installation room must be frost-free and dry.

**! WARNING**  
Please note and follow the respective relevant local standards, guidelines, directives and regulations, especially the minimum room volume necessary depending on the quantity of refrigerant in the relevant heat pump system (EN 378-1).

Refrigerant	Limit
R 134a	0.25 kg/m <sup>3</sup>
R 404A	0.48 kg/m <sup>3</sup>
R 407C	0.31 kg/m <sup>3</sup>
R 410A	0.44 kg/m <sup>3</sup>

**! HAND** "Technical data/scope of supply" overview, "General unit data" section.

$$\text{Minimum room volume} = \frac{\text{Refrigerant capacity [kg]}}{\text{Limit [kg/m}^3\text{]}}$$

**i NOTE**  
If several heat pumps of the same type are installed, only one heat pump must be considered. If several heat pumps of different types are installed, the heat pump with the largest refrigerant contents must be considered.

## TRANSPORT TO INSTALLATION LOCATION

During transport always note and comply with the following instructions:

**! IMPORTANT**  
Never use components and hydraulic connections on the unit for transport purposes.

**! IMPORTANT**  
Do not tilt the unit more than a maximum of 45° in any direction. The unit can be substantially damaged if tilted by more than 45°.

To prevent damage during transport, always transport the unit to final installation location in its original packaging.

Keep the components included in a safe place until they are assembled and installed.

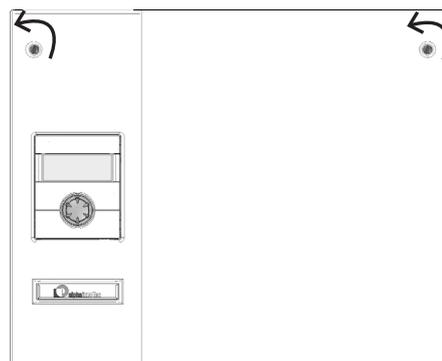
## INSTALLATION / ASSEMBLY

**i NOTE**  
Always follow the installation plan for the respective unit type. Note the size and minimum clearances.

**! HAND** Installation plan for respective unit type.

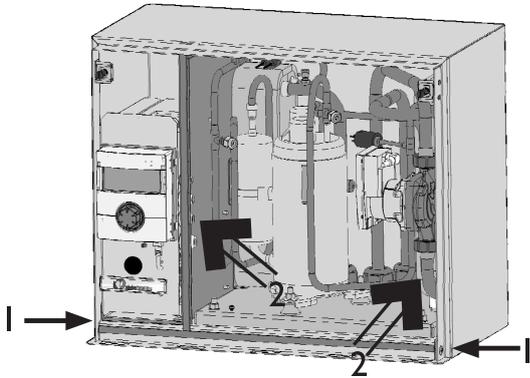
**! IMPORTANT**  
The heat pump must be mounted on a wall, which is suitable for withstanding the weight of the heat pump and components.

- ① Unpack the heat pump.
- ② Open the heat pump, by unlocking the quick-release screws.



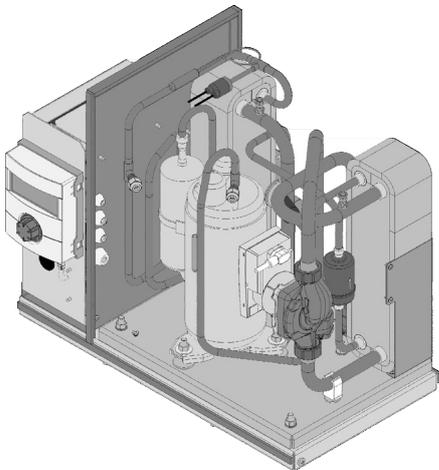


- ③ and removing the front cover:



1 Screws for transport safeguard  
2 Handle positions

- ④ Remove the two screws of the transport safeguard and pull out the complete internal part, by gripping the partition on the left behind the tab and the pipe bend underneath the pump.



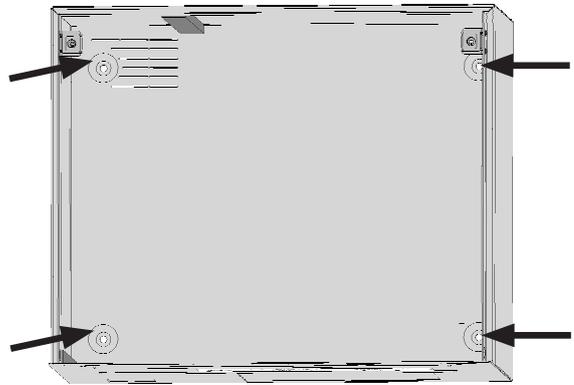
- ⑤ Use the drilling template (supplied with pump) to mark on and drill the holes.



**NOTE**

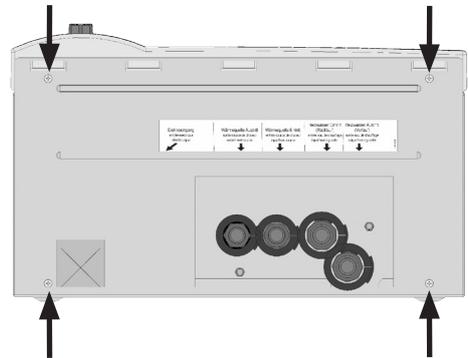
This also determines the height of the control panel. Note and follow the installation plans!

- ⑥ Fix the housing onto the wall using 4 bolts (provided on site) pushed through the holes in the rear of the unit:



Interior view of housing

- ⑦ Push the internal part completely into the housing.  
⑧ Use 4 screws M5x12 (supplied with pump) to fasten the internal part from underneath.



Underside of unit



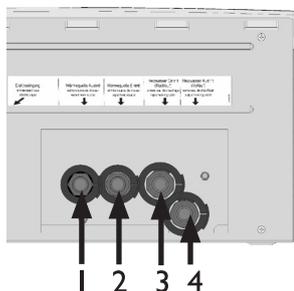
**IMPORTANT**

The air gap between the housing and the wall is for back ventilation of the heat pump - it must not be closed!

For the same reason, do not place any objects on the unit.

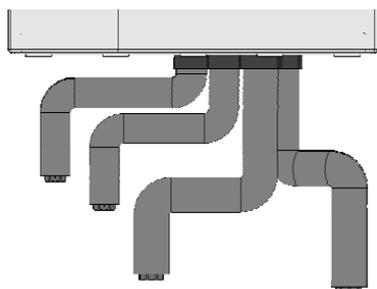


## Installing the hydraulic connections



Underside of heat pump:

- 1 Heat source outlet
- 2 Heat source inlet
- 3 Heating water inlet
- 4 Heating water outlet



### ! IMPORTANT

When making the connections, always secure the connections on the unit against twisting.

- ① Mount the stainless steel corrugated pipes for vibration isolation on the underside of the housing

### ! IMPORTANT

Do not install any pipe brackets in this area.

- ② A dirt trap (accessories) must be installed in the heat source inlet, mesh size: 0.4 mm.



Hydraulic connections

Please refer to the installation suggestions on the installation plans for details of how to install the accessory assemblies



“Installation plans”

## DOMESTIC HOT WATER TANK

You must integrate a special domestic hot water tank system. Choose the storage volume so that the required quantity of domestic hot water is available.

The heat exchanger surface of the domestic hot water tank must be dimensioned so that the heating capacity of the heat pump is transferred with minimum spread.

Please ask about the domestic hot water tanks in our product range. They are optimally matched to your heat pump.



# Electrical connection work

The following applies to all work to be done:



### DANGER

**Risk of fatal electric shock!**

**All electrical connections must be carried out by qualified electricians only. Before opening the unit, safely disconnect the system from the power supply and prevent it from being switched back on!**

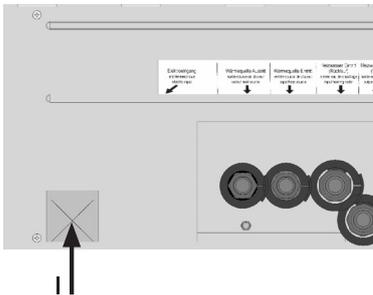


### WARNING

**Note and follow the relevant EN, VDE and/or local safety regulations during installation and when carrying out electrical work.**

**Note and follow the technical connection conditions of the responsible power supply company (if required by the latter)!**

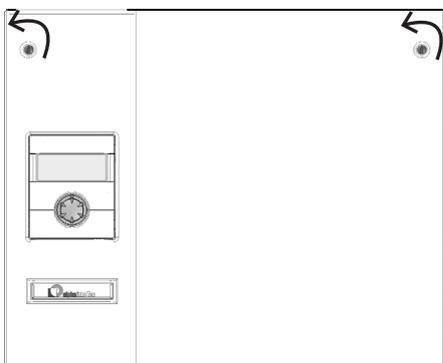
- ① The cable penetration is located on the underside of the housing:



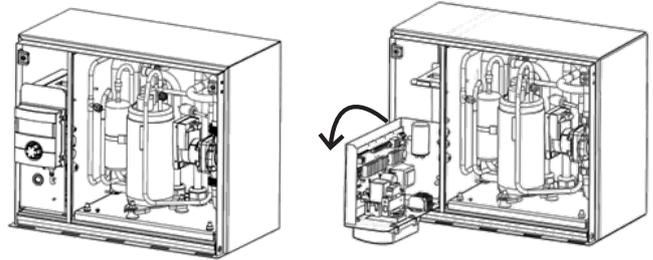
Cable penetration / unit underside:

- I Penetration for load and control cable and domestic hot water sensor cable

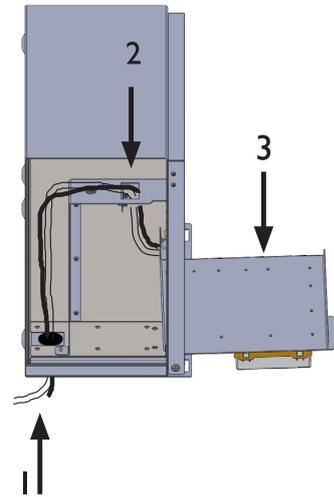
- ② Open the quick release screws by turning them 90° anticlockwise and remove the front cover.



- ③ To access the switch box, the control panel with the controller circuit board must be completely tilted forwards:



- ④ Feed both cables through the top opening in the sheet metal of the switch compartment to the controller board:

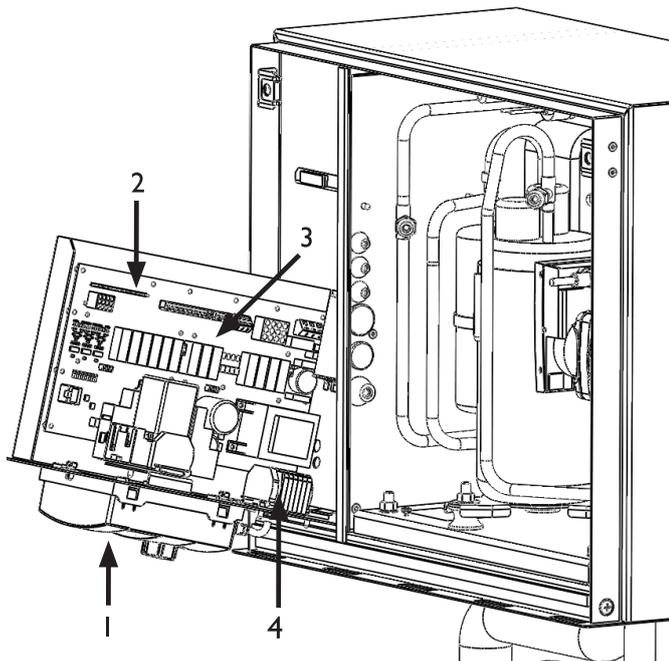


- 1 Cable
- 2 Cable penetration
- 3 Folded down control panel

- ⑤ Make electrical connections as shown in the terminal diagram.



“Terminal diagram”.



- 1 Switchbox open. Plan view
- 2 Domestic hot water sensor connection
- 3 Controller board
- 4 Load and control voltage connection

**! IMPORTANT**

The power supply for the heat pump must be fitted with a miniature circuit-breaker with at least 3 mm contact gap to IEC 60947-2. Note the level of the tripping current.



“Technical data/scope of supply” overview, “Electrics” section.



**NOTE**

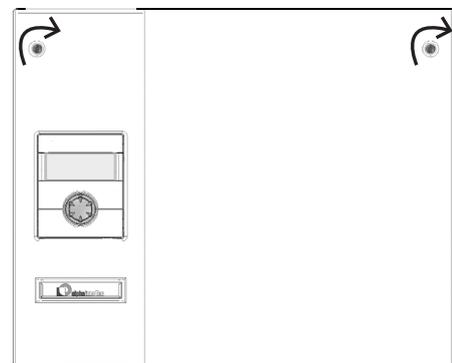
The control panel of the controller can be connected to a computer or network using a suitable network cable, enabling the controller to be controlled remotely from there.

If this is required, lay a shielded network cable (category 6, with RJ45 connector) up to the control panel as part of the electrical connection work.

- ⑥ After completing all electrical connection work, lift up and close the switchbox with the control panel.
- ⑦ Hook the front cover with the 5 rectangular attachments in the recesses of the housing.



Press on and lock with the quick-release screws (turn 90° clockwise).





## Flushing and filling the system

### WATER QUALITY FOR HEAT SOURCE AND DOMESTIC HOT WATER CHARGING CIRCUIT

#### OF THE FILL AND TOP-UP WATER IN WATER HEATING SYSTEMS ACCORDING TO VDI 2035 PART I AND II

Use of modern, energy-efficient heat pump systems is becoming increasingly widespread. Their ingenious technology enables these systems to achieve very good efficiencies. The decreasing space available for heat generators has led to the development of compact units with increasingly smaller cross-sections and high capacities. This means that the complexity of the systems and the material diversity are also increasing, which plays an important role, especially in their corrosion behaviour. The heating water not only affects the efficiency of the system, but also the life of the heat generator and the heating components of a system.

The guide values of VDI 2035 Part I and Part II must therefore be complied with as minimum requirements for proper operation of the systems. Our practical experience has shown that the safest, most reliable and fault-free running is achieved with low-salt operation.

VDI 2035 Part I provides important information and recommendations regarding scaling and its prevention in heating and domestic hot water heating systems.

VDI 2035 Part II primarily deals with the requirements for reducing heating water corrosion in water heating systems.

#### PRINCIPLES OF PART I AND PART II

The occurrence of scaling and corrosion damage in hot water heating systems is low, if

- proper planning, design and commissioning is carried out
- the system is closed in corrosion terms
- adequately dimensioned pressure maintenance is integrated
- the guide values for the heating water are complied with
- and regular servicing and maintenance are carried out.

A system log should be kept, in which the relevant planning & design data is entered (VDI 2035).

#### DAMAGE THAT CAN OCCUR IN CASE OF FAILURE TO COMPLY WITH THE ABOVE

- Malfunctions and the failure of components (e.g. pumps, valves)
- Internal and external leaks (e.g. from heat exchangers)
- Cross-section reduction and blockage of components (e.g. heat exchanger, pipes, pumps)
- Material fatigue
- Gas bubbles and gas cushion formation (cavitation)
- Negative effect on heat transfer (formation of coatings, deposits) and associated noises (e.g. boiling noises, flow noises)

#### LIMESCALE – THE ENERGY KILLER

Filling with untreated drinking water inevitably leads to the precipitation of all calcium as scale. The consequence: limescale deposits form on the heat transfer surfaces of the heating. Efficiency falls and energy costs rise. A rule of thumb is that 1 millimetre of limescale deposit causes an efficiency loss of 10%. In extreme cases it can even cause damage to the heat exchangers.

#### WATER SOFTENING TO VDI 2035 – PART I

If the water is softened in accordance with the VDI 2035 guidelines before it is used to fill the heating system, no scale can form. This effectively and permanently prevents limescale deposits and the resulting negative effects on the entire heating system.

#### CORROSION – AN UNDERESTIMATED PROBLEM

VDI 2035, Part II, deals with the problem of corrosion. Softening the heating water can prove to be insufficient. The pH value can significantly exceed the limit of 10. pH values higher than 11 can set in, which even damage rubber seals. The VDI 2035, Part I guidelines are indeed fulfilled, but VDI 2035, Part 2 suggests a pH value between 8.2 and maximum 10.

If aluminium materials are used, which is the case in many modern heating systems, a pH value of 8.5 must not be exceeded! Because otherwise there is a threat of corrosion – and aluminium is attacked without the presence of oxygen. Therefore, apart from softening the heating fill and top-up water, the heating water should also be appropriately conditioned. This is the only way to comply with the VDI 2035 requirements and the recommendations and installation instructions of the heat pump manufacturer.



Part 2 of VDI 2035 also refers to the reduction in total salt content (conductivity). The risk of corrosion is far lower if deionised water is used than is the case if the system is operated with salty, i.e. softened water. Even if the water has been softened beforehand, it contains dissolved, corrosive salts, which act as electrolytes due to the use of different materials in the heating system and therefore accelerate corrosion processes. This can ultimately result in pitting.

### ON THE SAFE SIDE WITH LOW-SALT OPERATION

The problems listed above do not occur at all with low-salt operation, as the heating water contains neither corrosive salts such as sulphates, chlorides and nitrates nor alkalis sodium hydrogen carbonate. The corrosive properties of deionised water are very low and in addition, scale cannot form in the boiler. This is the ideal approach for closed hot water circuits, in particular, because lower oxygen input into the heating circuit can also be tolerated.

In general, when the system is filled with deionised water, the pH value sets itself within the ideal range due to internal alkanisation. If necessary, a pH value of 8.2 can be very easily alkalisied by adding chemicals. In this way, optimum protection of the entire heating system is achieved.

### MONITORING

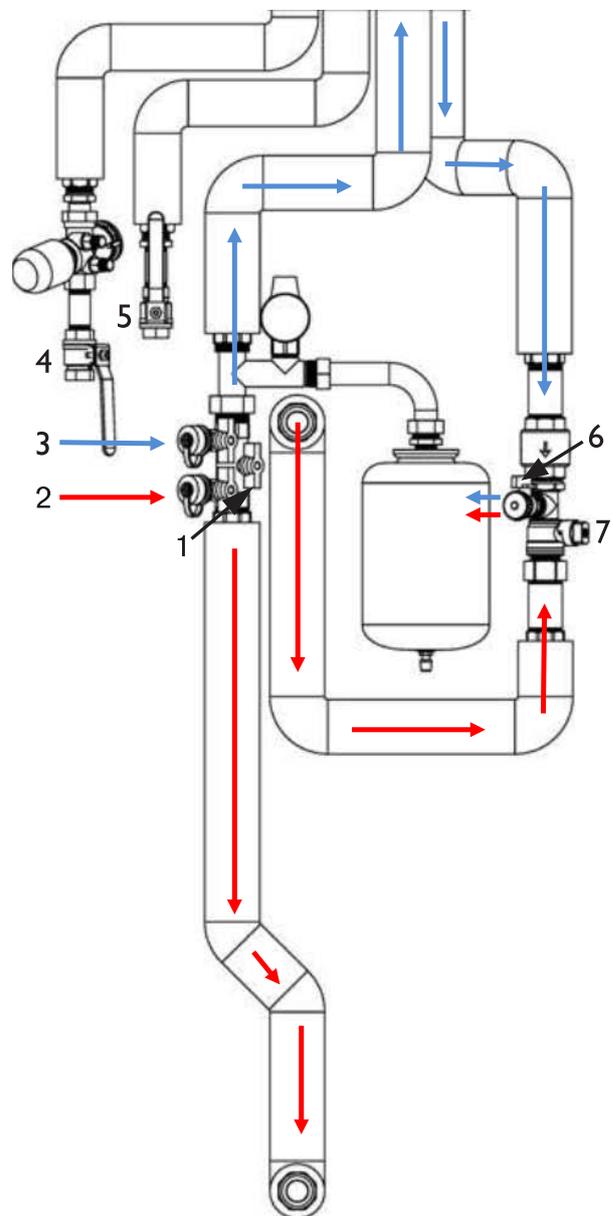
Analytical recording and monitoring of the relevant water values and the added conditioning substances is of decisive importance. Therefore, they should be monitored regularly using appropriate water test equipment.

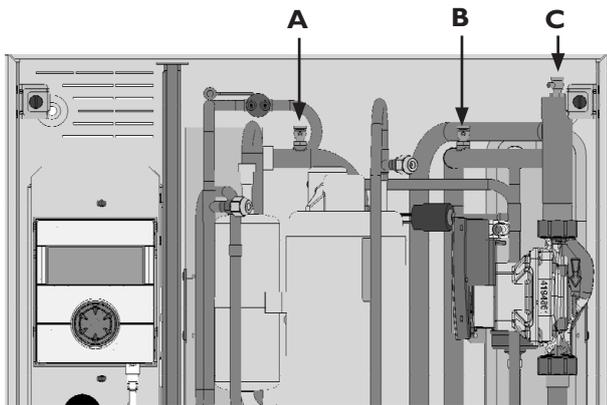
## FLUSHING, FILLING AND BLEEDING THE HEAT SOURCE AND DOMESTIC HOT WATER CHARGING CIRCUIT

**! IMPORTANT**  
The system must be absolutely free from air before commissioning.

**! IMPORTANT**  
Before flushing and filling the heat source and domestic hot water charging circuit, the drain pipe of the respective safety valves must be connected.

Heat source circuit | Domestic hot water charging circuit





- ① Flush the heat source circuit via ball valve 4 (inlet) and ball valve 5 (outlet). The fill and drain valves for the hose connection must be provided on site.
- ② After flushing, vent the heat source circuit via the bleed valve A in the unit.
- ③ Connect the flushing hose (inlet) to the fill and drain valve 2, to flush the domestic hot water charging circuit.
- ④ Connect the flushing hose (outlet) to the fill and drain valve 6.
- ⑤ Close ball valve I. Open valve 7.
- ⑥ Flush via the fill and drain valves 2 and 6 until the lower domestic hot water charging circuit is free of air.
- ⑦ After flushing, close valve 7 and connect the flushing hose (inlet) from the fill and drain valve 2 to fill and drain valve 3.
- ⑧ Flush thoroughly via fill and drain valves 3 (inlet) and 6 (outlet).
- ⑨ After flushing vent also via bleed valve B and C in the unit.
- ⑩ When the complete circuit is air free, close all fill and drain valves and open ball valve I and valve 7.
- ⑪ Nach erfolgter Inbetriebnahme Entlüftungsventile B und C nachentlüften und benötigten Anlagendruck herstellen.

**!** **IMPORTANT**  
The maximum allowable operating pressures must not be exceeded!

 „Technical Data“.

## FLUSHING, FILLING AND BLEEDING THE DOMESTIC HOT WATER CIRCUIT

**!** **IMPORTANT**  
The electrical conductivity of the domestic hot water must be  $> 100 \mu\text{S}/\text{cm}$  and lie within the required drinking water quality.

**!** **IMPORTANT**  
Before flushing and filling the domestic hot water tank, the drain pipe of the safety valve must be connected. Do not exceed the set pressure of the safety valve.

- ① Open cold water inlet valve at the domestic hot water tank.
- ② Open the domestic hot water valves at the taps.
- ③ Flush the domestic hot water tank until no more air discharges from the valves at the taps.
- ④ Close domestic hot water valves at the taps.



## Insulating the hydraulic connections

- ① Check all hydraulic connections for leaks. Perform leak test.
- ② Insulate all connections, vibration isolation devices, connections and pipes of the domestic hot water charging circuit and the heat source.
- ③ Attach the insulation supplied with the unit to the union nuts of the vibration isolation devices on the underside of the housing.



### NOTE

Insulate the domestic hot water charging circuit and the heat source according to the relevant local standards, guidelines and directives.

## Dismantling



### DANGER

**Risk of fatal electric shock!**

**Electrical work may only be carried out by qualified electricians.**

**Before opening the unit, safely disconnect the system from the power supply and prevent it from being switched back on!**



### WARNING

**Only qualified heating or refrigerating system personnel may remove the unit from the system and dismantle the unit.**



### IMPORTANT

Recycle or ensure proper disposal of unit components, refrigerants and oil according to the relevant regulations, standards and guidelines.

### REMOVING THE BUFFER BATTERY



### IMPORTANT

Before scrapping the controller, remove the buffer battery on the processor board. The battery can be pushed out using a screwdriver. Dispose of battery and electronic components in an environmentally friendly way.



# Controller description

## The control panel



- 1 USB interface  
(connector is located behind the flap)
- 2 Screen
- 3 Status display
- 4 "Turn/push knob"

### STATUS DISPLAY



Ring around the rotary knob lights up **green** = System is operating **properly**



Ring around the rotary knob flashes **green/red** = **self-resetting operational interruption**



Ring around the rotary knob lights up **red** = **fault**

### SCREEN

Operating information, functions and setting options of the domestic hot water and heat pump controller and the heat pump system as well as error messages are displayed in the screen of the control panel.

The screen is normally unlit. If the "turn/push knob" is used, the screen lighting switches on. It switches off automatically if the "turn/push knob" is not actuated for longer than 10 minutes.



**Dark background** (inverted) = Symbol or menu field is activated.



Select the navigation arrow to switch from one menu level to the next higher or lower one.



Some menus require the settings made to be saved. To do this, select . To cancel settings made, select .



If a menu has more entries than the screen can display, a scroll bar appears on the left side of the screen. It shows your current position within the menu. If no symbol or menu field is selected, you can scroll down the screen display by turning the "turn/push knob" to the right. This displays further menu entries. You can scroll back up the screen display again by turning the "turn/push knob" to the left.

### "TURN/PUSH KNOB"



**Turn** =

**Activate** symbol for a required program level or menu field or scroll down (or up) the screen display.



**Push** (briefly) =

**Select** activated **symbol** (= switch to the corresponding program level) **or enable** activated **menu field** for the input of data and values.



**Turn** =

Set data and values in the enabled menu field.



**Push** (briefly) =

Finish entering data and values in a menu field.

If the "turn/push knob" is pressed for longer than 3 seconds, the display automatically switches back to the navigation screen.



## ERROR MESSAGES

If a fault occurs in the system, a corresponding error message appears in the screen.

### ! IMPORTANT

Before acknowledging a fault, always read the “Error Diagnosis / Error Messages“ and “Acknowledging a Fault” sections.



**Push** (7 seconds long) = Acknowledge error message and restart the heat pump system (= manual reset).

## SCREEN DISPLAY LANGUAGE

You can specify the language in which menus and texts are to be displayed on the screen.

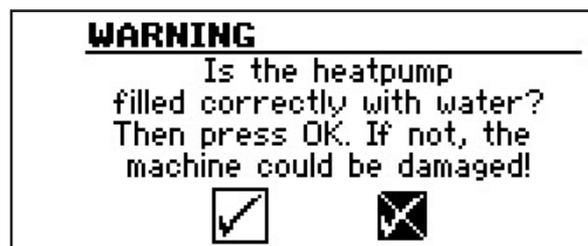
## MENU DISPLAY

The menu is structured so that menu items that are irrelevant for the system or machine type are hidden. This means that the controller display may differ from the screenshots shown in this operating manual.

# Commissioning

## IBN WIZARD

The control is equipped with a commissioning (IBN) or startup wizard. This wizard guides you through the controller's most important settings during the initial startup. The “GO” symbol in the main menu flashes. Click this symbol to start the commissioning wizard. This symbol disappears as soon as the initial startup is completed.



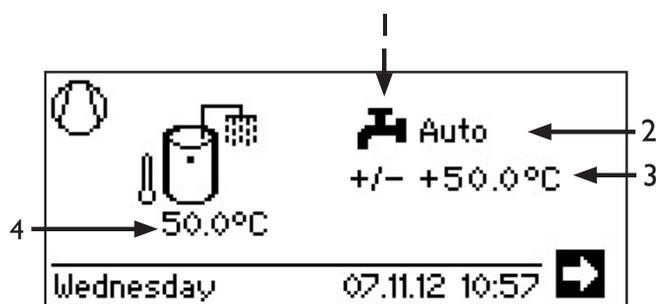
When the heat pump is switched on for the first time the above display appears. No ZWE (second heat generator) is released by the controller until the display is confirmed with OK.

The display always appears when the controller is switched on or on switching to the Standards menu. This screen is no longer displayed if the heat pump or ZWE1 has more than 10 operating hours.

### ! IMPORTANT

The unit can be damaged if the display is confirmed with OK, although the system is not properly filled.

## The standard screen



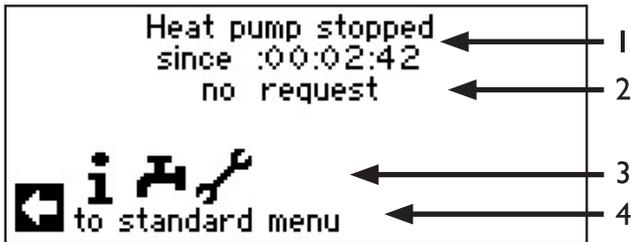
- 1 Symbol for “Domestic Hot Water” program area  
Indicates that domestic hot water functions are being controlled in the standard screen.
- 2 Current domestic water heating mode:  
Auto(matic), Holidays, ZWE, Off or Party.
- 3 Setpoint temperature of the domestic water heating
- 4 Actual temperature in the domestic water heating (sensor value)



## The Navigation screen

The navigation screen provides an overview of the different program areas of the domestic hot water and heat pump controller.

### BASIC DISPLAY



- 1 **Current operating state of the heat pump with time indication**
- 2 **Cause of the current operating state or fault message**
- 3 **Symbols of the domestic hot water and heat pump controller program areas**  
Standard symbols, which are always displayed, are:

Symbol for “Information and Quick Setting” program area  
Operating information and operation of the system by the user  
Enabled for all users

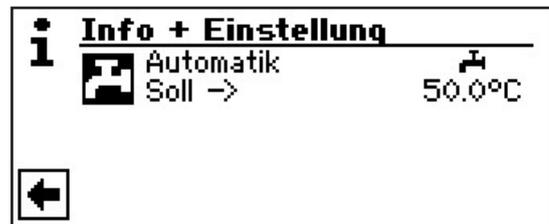
Symbol for “Domestic Hot Water” program area  
Program area for setting all parameters for domestic water heating  
For qualified personnel only

Symbol for “Service” program area  
Program area for setting the basic system parameters  
For authorised service personnel only  
In parts, password protected area

- 4 **Information on the activated symbol.**

## Program area

### “Info and Setting”



### SETTING THE DOMESTIC WATER HEATING MODE

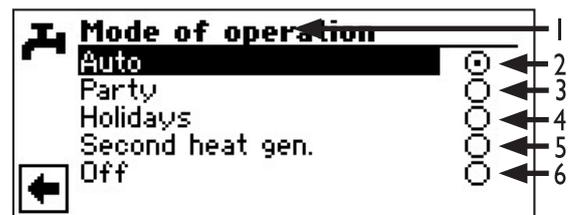
- ① In the navigation screen, select the symbol.



- ② The menu field of the current mode is highlighted with a dark background. Select this menu field.



- ③ The screen switches to the “Mode” menu. The current mode is marked with :



- 1 **Symbol for “Domestic hot water” program area and menu heading.**

#### 2 Automatic

Domestic water heating is *off* according to the programmed switching times.

#### 3 Party

Domestic water heating operates in continuous mode with immediate effect for a period of 24 hours or until another mode is selected manually.



#### 4 Holidays

Domestic water heating is switched off *with immediate effect until the set date expires or until another mode is selected manually.*

#### 5 Second heat generator

Programmed switching times control the domestic water heating *without* the heat pump.

#### 6 Off

Domestic water heating is switched off.

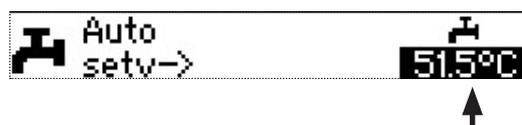
- ④ Select the required mode.
- ⑤ Return to the “Settings” menu.

### SETTING THE DOMESTIC HOT WATER TEMPERATURE

- ① In the “Domestic hot water quick settings” menu, select the menu bar heading “Setpoint – >”.



- ② The “Domestic hot water temperature” menu field is highlighted with a dark background.



Set the required domestic hot water temperature (= setpoint).

Minimum value: 30 °C.



#### NOTE

In conjunction with domestic hot water tanks recommended by the manufacturer, your heat pump can generate domestic hot water temperatures, which are around 7 K lower than the maximum flow temperature of your heat pump.

- ③ Exit input. This saves the required temperature. The program automatically activates the  symbol.



## Program area “Domestic hot water”



### NOTE

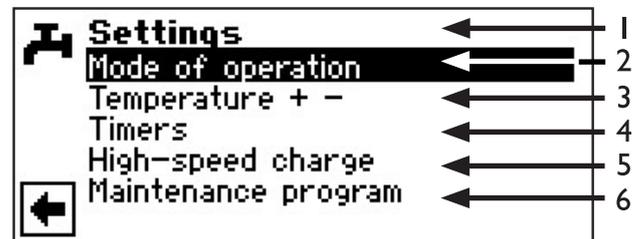
If a domestic hot water temperature is set, which cannot be achieved, the heat pump initially switches to “High pressure fault”. This is followed by a self-resetting fault. After 2 hours have expired, the domestic water heating starts again. However, the controller program automatically lowers the setpoint by an initial 1 °C. If this setpoint temperature can also not be achieved, the process is repeated until a temperature can be achieved. The required value set remains unaffected and is displayed unchanged.

### SELECT PROGRAM AREA

- ① In the navigation screen, select the  symbol.



- ② The screen switches to the “Domestic hot water settings” menu.

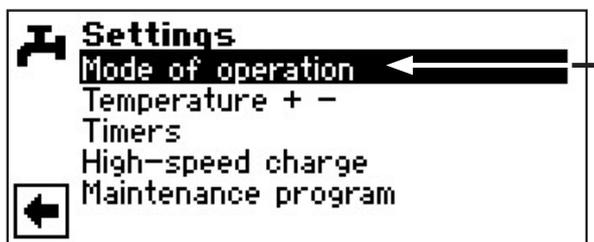


- 1 **Symbol for “Domestic hot water” program area with menu heading**
- 2 **“Mode” menu field**  
switches you to the “Domestic hot water mode” menu
- 3 **“Temperature + -” menu field**  
switches you to the Domestic hot water temperature menu, required value (If the domestic water heating is controlled by a thermostat, this menu field is omitted.)
- 4 **“Timing program” menu field**  
switches you to the “Domestic hot water switching times” menu
- 5 **“Quick charge” menu field**  
switches you to the “Domestic hot water quick charge” menu
- 6 **“Maintenance programs” menu field**  
switches you to the “Domestic hot water maintenance programs” menu

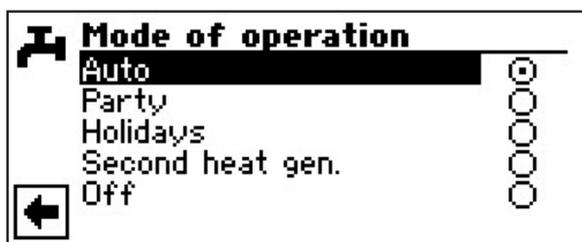


## SETTING "DOMESTIC WATER HEATING" MODE

- ① In the menu "Domestic hot water settings" menu, select the "Mode" menu field.



- ② The screen switches to the "Domestic hot water mode" menu. The current mode is marked with a circled dot.



- ③ Return to the "Domestic hot water settings" menu.

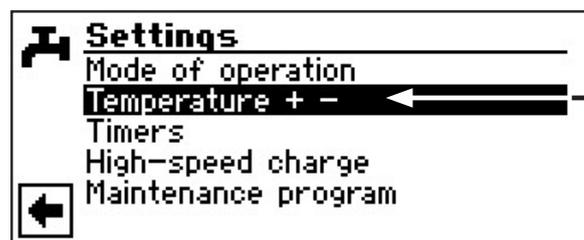
## SET THE DOMESTIC HOT WATER TEMPERATURE



### NOTE

If the domestic water heating is controlled by a thermostat, temperature setting is not possible. Therefore, the "Temperature + -" menu field does not appear in the "Domestic hot water settings" screen.

- ① In the "Domestic hot water settings" menu, select the "Temperature + -" menu field.



- ② The screen switches to the "Domestic hot water temperature + -" menu.



### I "Required value" menu bar

- ③ Select the "Required val." menu field. The temperature input field is highlighted with a dark background.
- ④ Set the required temperature.



### NOTE

If used in conjunction with domestic hot water tanks recommended by the manufacturer, your heat pump can generate domestic hot water temperatures, which are around 7 K lower than the maximum flow temperature of your heat pump.

- ⑤ Exit input.
- ⑥ Save settings or cancel. Return to the "Domestic hot water settings" menu.



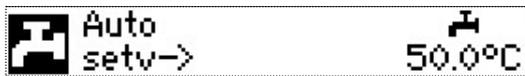
## DOMESTIC WATER HEATING TIMING PROGRAM



### NOTE

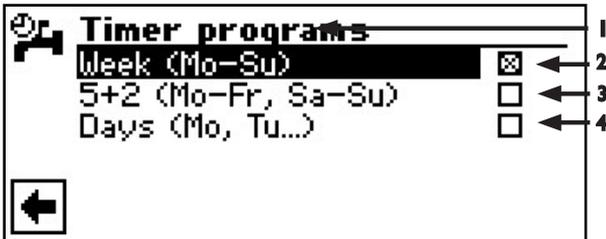
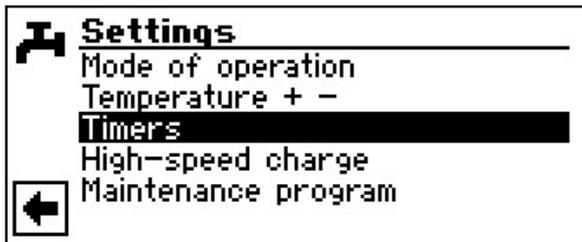
When programming, note that the time periods, which you define in the “Domestic water heating switching times” area are **off periods**. The domestic water heating is switched off during the respective time periods entered.

You can only select the “Domestic hot water switching times” menu field – – if “Auto(matic)” mode is active.



If you select the “Timing program” menu field, the screen switches to the “Timing program” menu:

“Timing program” menu

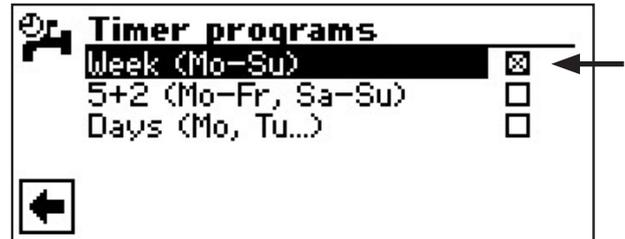


- 1 **Symbol for “Domestic hot water switching times” with menu heading**
- 2 **Week (Mon – Sun)**  
Same switching times for all days of the week
- 3 **5 + 2 (Mon – Fri, Sat – Sun)**  
Different times during the week and at the week-end
- 4 **Different switching times each day**

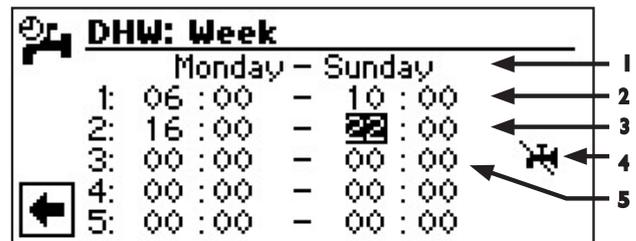
## SAME SWITCHING TIMES FOR ALL DAYS OF THE WEEK

You can define a maximum of three time periods within 24 hours, during which the domestic hot water is to be switched off. The defined time periods apply to every day of the week.

- ① In the “Hot water switching times” menu, got to and select the “Week (Mon – Sun)” table row.



The screen switches to the “Hot water switching times: Week” menu.



- 1 **Menu subheading: “Monday – Sunday”**  
The displayed switching times apply to every day of the week.
- 2 **Switching channel 1 with typical time period**  
In the example shown, the domestic water heating is switched off daily from 06:00 – 10:00.
- 3 **Switching channel 2 with typical time period**  
In the example shown, the domestic water heating is switched off daily from 16:00 – 22:00.
- 4 **Symbol for “Off”**  
Indicates that during the given periods the domestic water heating is switched off.
- 5 **Switching channel 3 with typical time period**  
Not defined in the example shown..

- ② Got to and select switching channel 1.

- ③ Set the required time.

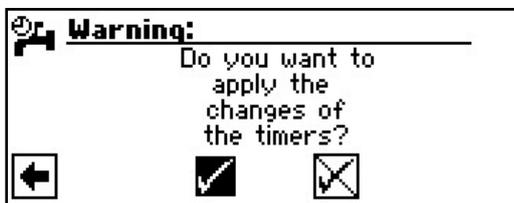
The domestic hot water is switched off during the displayed period. Domestic hot water is allowed during the remaining times.



**NOTE**

If the time period is set as 00:00 – 00:00, domestic water heating is generally enabled.

- ④ Exit input in switching channel 1.
- ⑤ If the domestic hot water is to be switched off during another period during the day, select switching channel 2.
- ⑥ Set the required time.
- ⑦ To save the settings made, got to and select  or cancel with . Confirmation prompt



**NOTE**

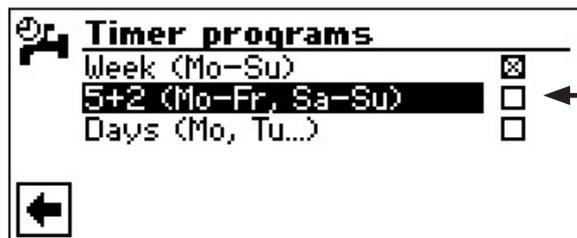
If the settings are saved, the “Hot water: week” setting overwrites existing time settings in “Hot water: 5+2” and “Hot water: days”. At the same time, the switching time control “Week (Mon – Sun)” is switched on and is marked automatically in the “Hot water” switching times submenu with .

- ⑧ Answer confirmation prompt. The screen returns to the previous menu.

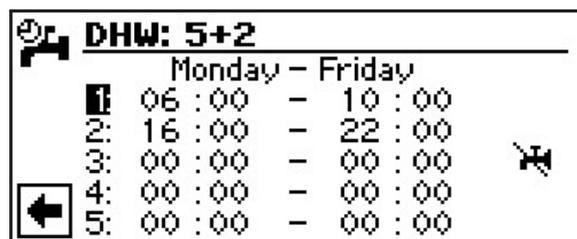
**DIFFERENT SWITCHING TIMES DURING THE WEEK AND AT THE WEEKEND**

You can define a maximum of 5 periods, during which hot water is to be switched off, for each of the two groups of days: Monday – Friday and Saturday – Sunday (= weekend).

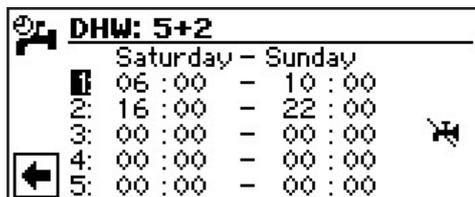
- ① In the “Hot water switching times” menu, select the table row: “5 + 2 (Mon – FRI, Sat – Sun)”.



The screen switches to the “Hot water switching times: 5 + 2” menu.



- ② Follow the ② – ⑥ instructions in the “Same switching times on all days of the week” section.
- ③ Open the menu for “Saturday – Sunday” with the “Save settings” and “Cancel settings” menu entries by scrolling through the screen.



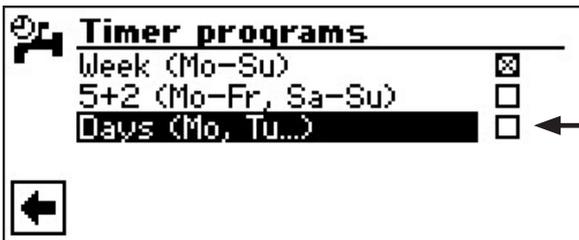
- ④ Follow the ② – ⑧ instructions in the “Same switching times on all days of the week” section.



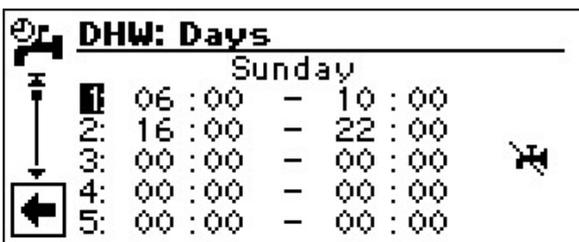
## DIFFERENT SWITCHING TIMES EACH DAY

You can define a maximum of 5 time periods for each day, during which the domestic hot water is to be switched off.

- 1 In the “Hot water switching times” menu, select the “Days (Mon, Tue, .)” menu field.



The screen switches to the “Hot water switching times: Days” menu and shows the switching times for Sunday.



- 2 Follow the ② – ⑥ instructions in the “Same switching times on all days of the week” section.

### **NOTE**

If switching times have been programmed in the “Week (Mon – Sun)” or “5 + 2 (Mon – Fri, Sat – Sun)” switching times and you would only like to alter this on only (one) specific day(s), here you can program the switching times for this/these day(s) accordingly

- 3 The menus for other days are opened by scrolling through the screen. Follow the respective ② – ⑥ instructions in the “Same switching times on all days of the week” section.

### **NOTE**

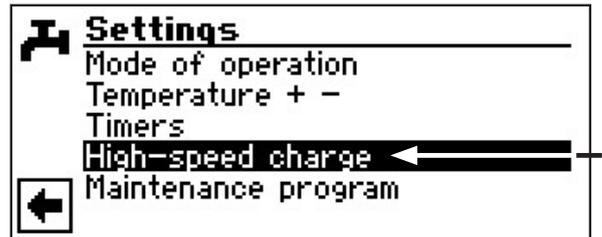
The “Save settings” and “Cancel settings” menu entries appear in the “Saturday” screen.

- 4 In the screen showing the switching times for Saturday, follow the ② – ⑧ instructions in the “Same switching times on all days of the week” section.

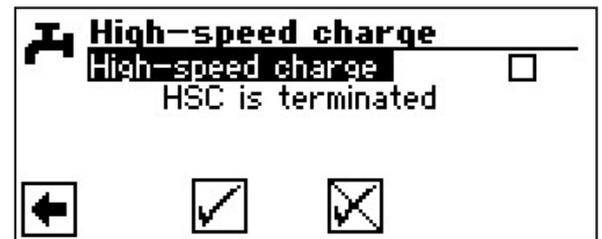
## QUICK CHARGE

If you need domestic hot water despite active off time(s), you can use the “Quick charge” function to bypass the programmed off time(s) and select domestic water heating, and also stop it again.

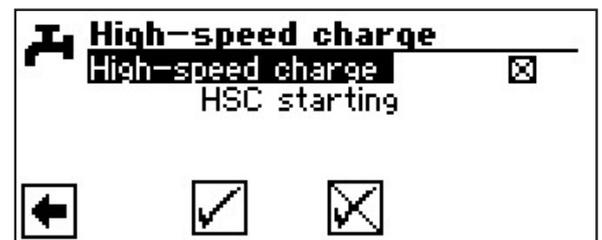
- 1 In the menu “Domestic hot water settings” menu, select the “Quick charge” menu field.



- 2 The screen switches to the menu “Domestic hot water quick charge” menu: You can see the program's automatic status message.



- 3 Select the “Activate” menu field. Cancel or save the settings. The screen reports “Starting BWS” or “BWS active” status.



- 4 Return to the “Domestic hot water settings” menu.

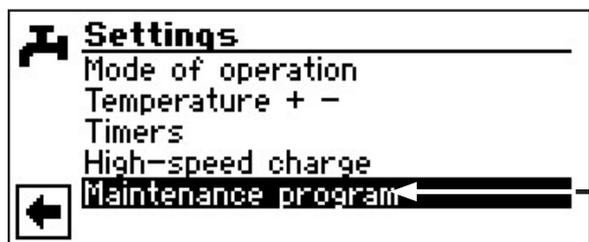
### **NOTE**

Quick charge is exited by analogy by activating the “Exit” menu field



## MAINTENANCE PROGRAMS

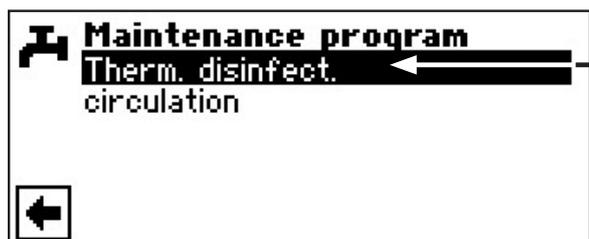
- 1 In the “Domestic hot water settings” menu, select the “Maintenance programs” menu field.



- 2 The screen switches to the “Domestic hot water maintenance programs” menu.

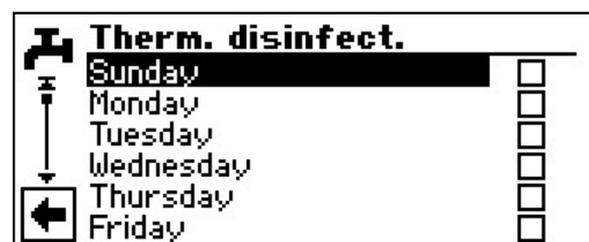
## THERMAL DISINFECTION

- 1 In the “Domestic hot water maintenance programs” menu, select the “Thermal disinfection” menu field.



- i NOTE**  
The “Thermal disinfection” display only appears if an additional heat generator is released for domestic water heating under the system settings.

- 2 The screen switches to the “Thermal Disinfection” menu.



- 3 Select the day(s) on which thermal disinfection is to take place.

- i NOTE**  
“Continuous operation” means that thermal disinfection follows each period of domestic water heating. However, domestic hot water charging always starts at the set hysteresis of the domestic hot water setpoint.

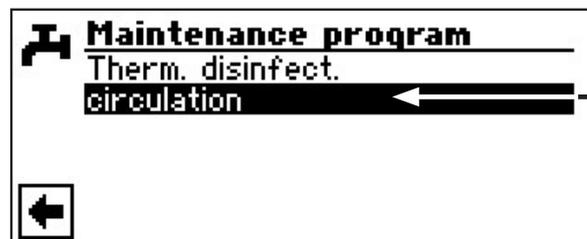
- i NOTE**  
Thermal disinfection is always started at 0:00 on the respective selected day.

- i NOTE**  
The temperature for thermal disinfection is set in the “Service” program area.

- 4 Save settings or cancel. Return to the “Domestic hot water maintenance programs” menu.

## CIRCULATION

- 1 In the “Domestic hot water maintenance programs” menu, select the “Circulation” menu field.



- i NOTE**  
The menu field only appears if this is defined accordingly in the “Service” program area.

Setting required: Domestic water 2 = “ZIP”

- “System setting during commissioning” section in the operating manual for the skilled tradesperson.

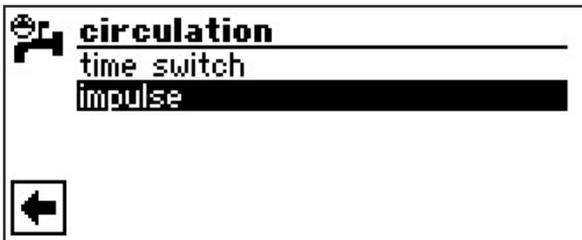


- ② The circulation pump can be configured by setting switching times and cycle times.



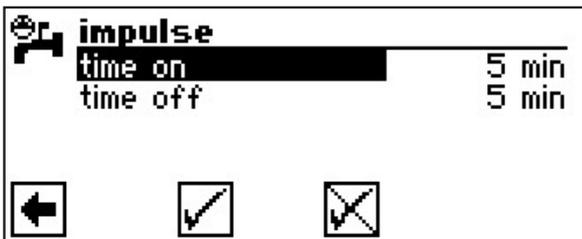
In the switching times, enter the times during which the circulation pump is to run.

For details of the precise procedure used to set the times, please refer to the **Timers** chapter.

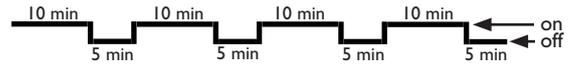
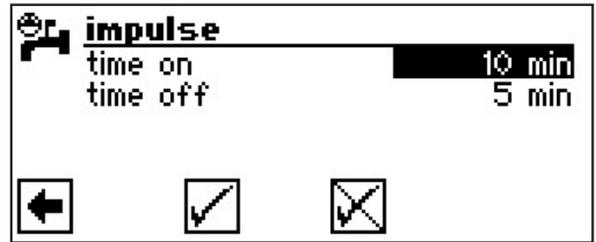


Under the Cycle Times item you can decide how long the pump is switched on or off within the enabled periods.

Example 1:



Example 2:



If the "Time off" is set to 0 minutes, the circulation pump is switched on continuously during the enabled time periods.

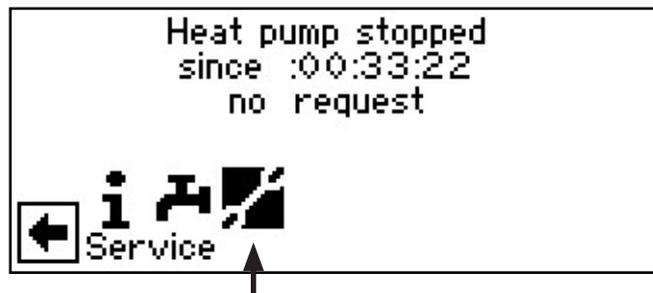




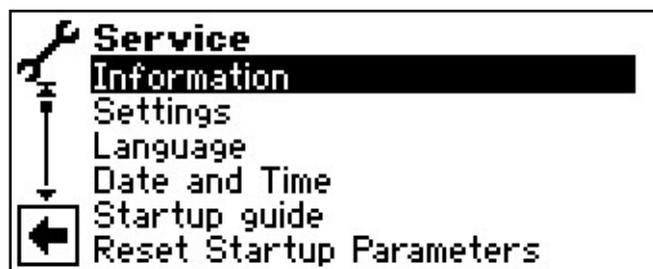
## Program area “Service”

### SELECT PROGRAM AREA

- ① In the navigation screen, select the symbol.



- ② The screen switches to the “Service” menu.

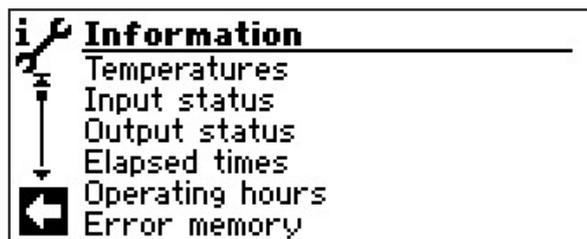


## Information

- ① In the “Service” menu, select the “Information” menu field.

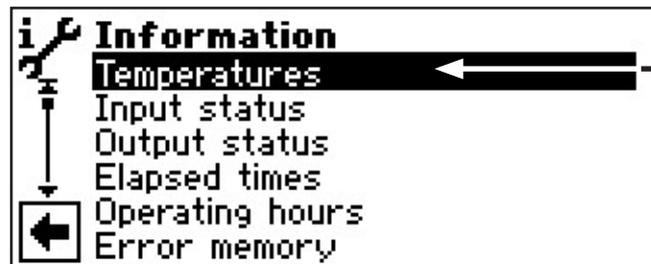


- ② The screen switches to the “Service information” menu.

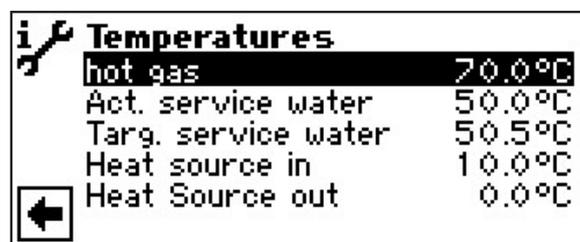


### RETRIEVE TEMPERATURES

- ① In the “Service Information” menu select the “Temperatures” menu field.



- ② The screen switches to the “Service information - temperatures” menu.



Hot gas	Hot gas temperature
Domestic water-Actual	Domestic hot water Actual temperature
BW-Setp	Domestic hot water - setpoint
WQ-On	Heat source On
WQ-Off	Heat source Off

- ③ Return to the “Service Information” menu.



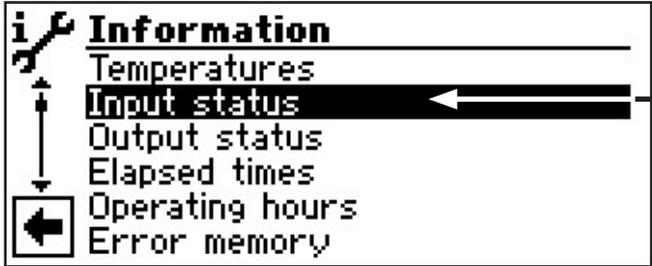
### NOTE

Some sensors are not detected until the control is restarted after connecting the respective sensor.

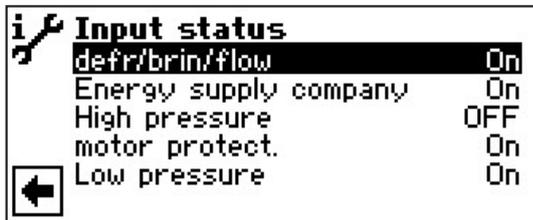


## RETRIEVE INPUTS

- ① In the “Service Information” menu, select the “Inputs” menu field.



- ② The screen switches to the “Service information - inputs” menu.



### NOTE

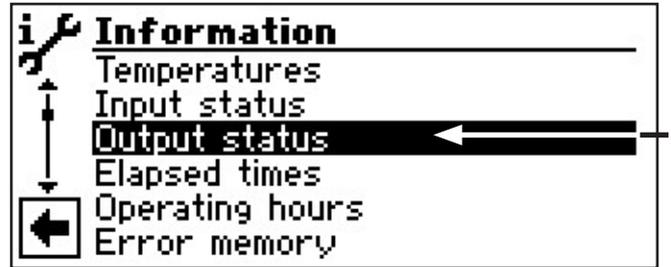
This menu shows whether the control's digital inputs are switched on or off.

ASD	Defrost termination pressure switch Brine pressure monitor Flow switch
EVU	Electricity supply company (EVU) off time Off = Off time
HD	High-pressure cut-out Off = Pressure ok
MOT	Motor protection On = Motor protection ok
ND	Low-pressure cut-out On = Pressure ok

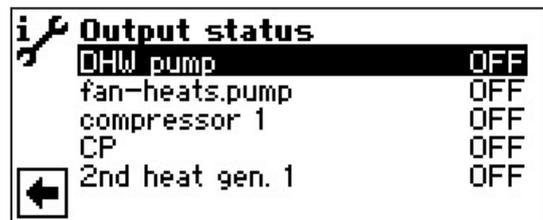
- ③ Return to the “Service Information” menu.

## RETRIEVE OUTPUTS

- ① In the “Service Information” menu, select the “Outputs” menu field.



- ② The screen switches to the “Service information - outputs” menu.



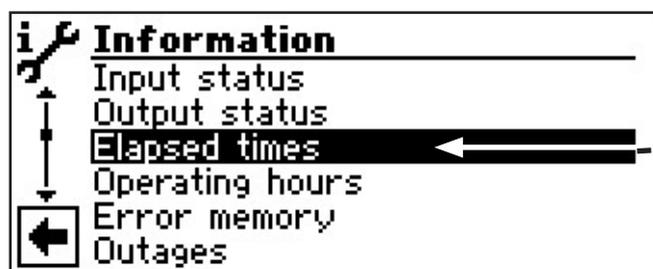
BUP	Domestic hot water circulation pump
BOSUP valve	Fan, well or brine circulation pump
Compressor 1	Compressor 1 in heat pump
ZIP	Circulation pump
ZWE 1	Second heat generator 1

- ③ Return to the “Service Information” menu.



## RETRIEVE RUNNING TIMES

- ① In the “Service information” menu, select the “Running times” menu field.



- ② The screen switches to the “Service information running times” menu.

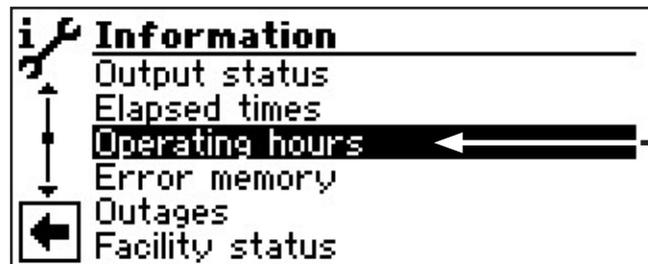


WP since	Heat pump running since (Each time given in hh:mm:ss)
ZWE 1 since	Second heat generator 1 running since
Mains On delay since	Mains switch on delay
SSP time	Operating cycle lock-out
VD stand	Compressor
TDI since	Thermal disinfection running since
BW off	Domestic hot water off

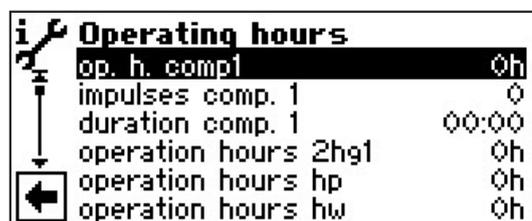
- ③ Return to the “Service Information” menu.

## RETRIEVE OPERATING HOURS

- ① In the “Service Information” menu, select the “Operating hours” menu field.



- ② The screen switches to the “Service information - operating hours” menu.



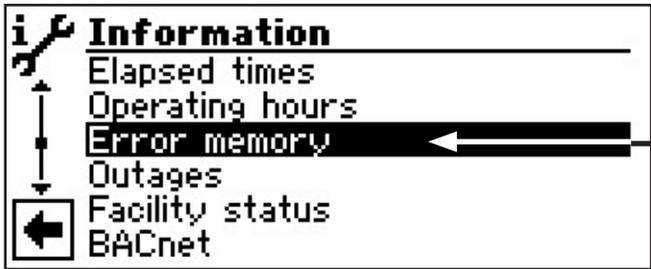
Op hours VD 1	Operating hours - compressor 1
Pulses compressor 1	Pulses compressor 1
Runtime Ø VD1	Average running time, compressor 1
Operating hours ZWE1	Operating hours, second heat generator 1
Operating hours WP	Heat pump operating hours
Operating hours BW	Domestic hot water operating hours

- ③ Return to the “Service Information” menu.

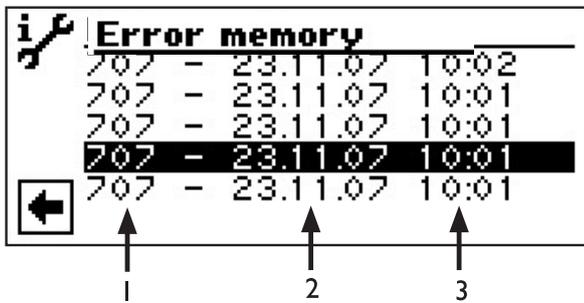


## RETRIEVE ERROR MEMORY

- ① In the “Service information” menu, select the “Error memory” menu field.



- ② The screen switches to the “Service information - stored errors” menu.



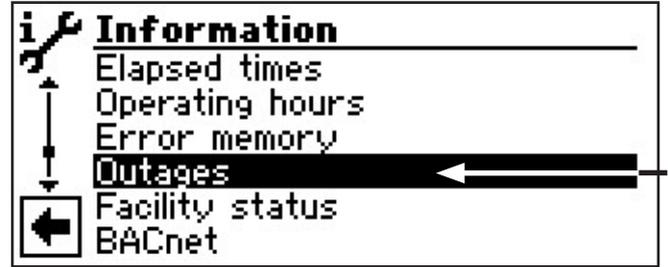
- 1 Error code
- 2 Date the error occurred
- 3 Time the error occurred

**NOTE**  
At most, the last five errors to occur are displayed.

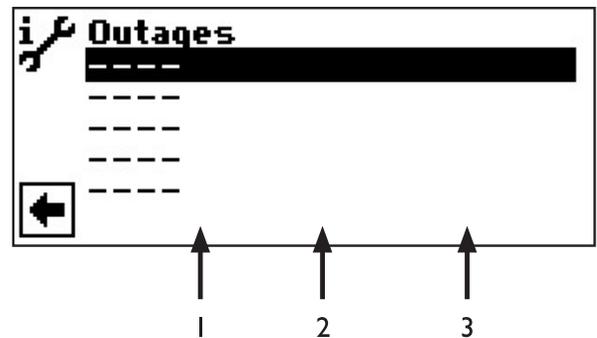
- ③ Return to the “Service Information” menu.

## RETRIEVE SHUTDOWNS

- ① In the “Service information” menu, select the “Shut-downs” menu item.



- ② The screen switches to the “Service information - shutdowns” menu.



- 1 Shutdown date
- 2 Shutdown time
- 3 Shutdown code:

WP Fault = Heat pump fault  
 SysFault = System fault  
 BA\_ZWE = Second heat generator operating mode  
 EVU off = EVU off  
 AirDefrost = Air defrost (LW units only)  
 TEGMAX = Maximum use limit temperature  
 TEGMIN = Minimum use limit temperature  
 UEG = Lower use limit  
 No demand = no demand

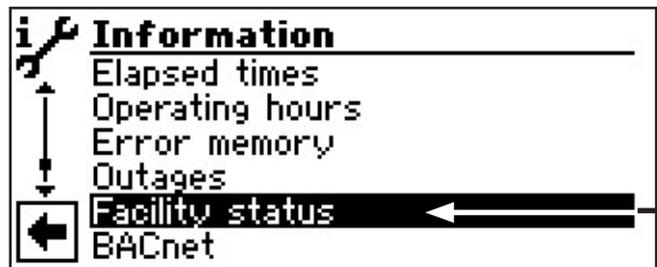
**NOTE**  
At most, the last five shutdowns are displayed.

- ③ Return to the “Service Information” menu.

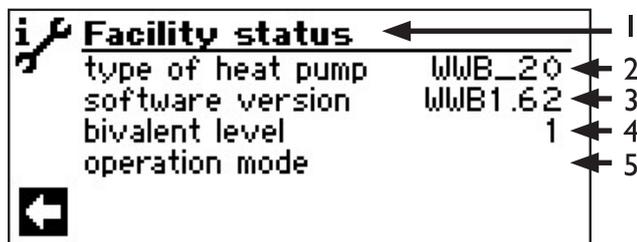


## RETRIEVE SYSTEM STATUS

- ① In the “Service information” menu, select the “System status” menu item.



- ② The screen switches to the “Service information - system status” menu.

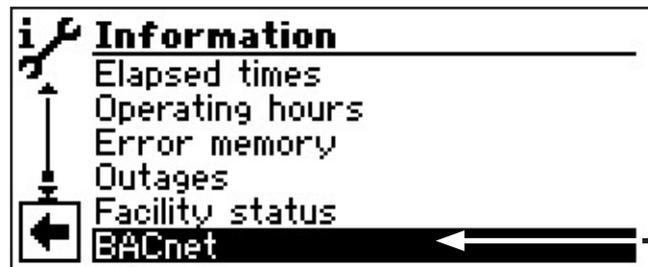


- 1 Symbol for “Service Information” program area with menu heading
- 2 WP type Heat pump type
- 3 SW status Software status of the heat pump controller
- 4 Biv. level Bivalence level  
1 = one compressor may run  
2 = two compressors may run  
3 = additional heat generator may run as well
- 5 Op. state. Current operating state  
Domestic hot water

- ③ Return to the “Service Information” menu.

## BACNET

- ① In the “Service information” menu, select the “BACnet” menu field.



- ② The screen switches to the “BACnet” menu.



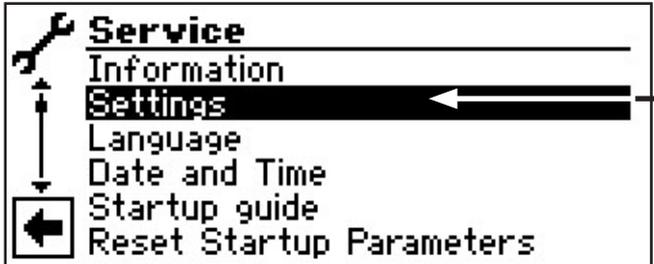
- 1 Unique identification number of the unit in the BACnet network
- 2 Name of the unit in the BACnet network
- 3 Unit's model designation
- 4 Location of the unit
- 5 BACnet communication port of the unit

- ③ Return to the “Service Information” menu.

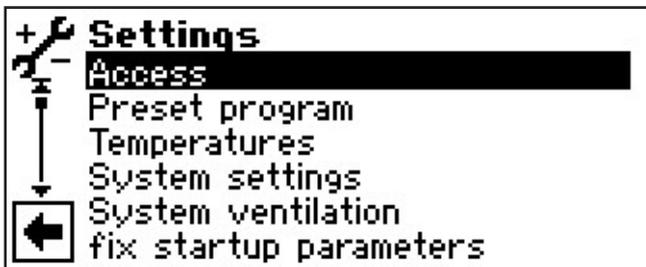


# Setting

- ① In the “Service” menu, select the “Settings” menu field.

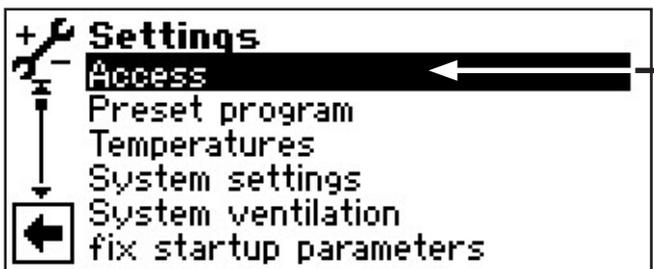


- ② The screen switches to the “Service settings” menu.

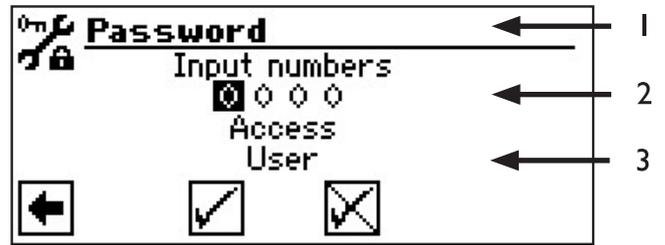


## DEFINE DATA ACCESS

- ① In the “Service settings” menu, go select the “Data access” menu field.



- ② The screen switches to the “Service settings - password” menu.



- 1 Symbol for “Service settings” program area with menu heading
- 2 Input fields for four-digit numeric code
- 3 Information on the current status of the data access

- ③ Select the first input field of the numeric code.
- ④ Enter the digits for the numeric code. Exit input.

### ! IMPORTANT

After carrying out service work, always reset the data access to customer.

Incorrect program settings, not tailored to the system components can cause malfunctions and even serious damage to the system. Unauthorised persons must therefore be prevented from accessing the system's fundamental settings.

### i NOTE

The manufacturer is not liable for damage resulting from incorrect program settings, not tailored to the system components.

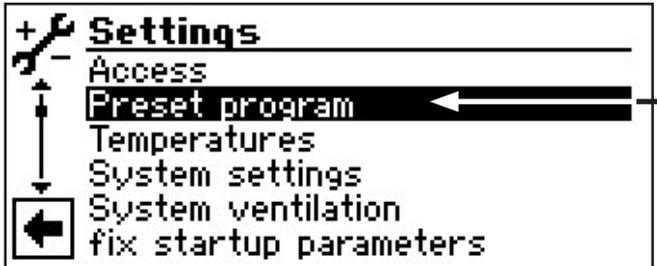
- ⑤ Repeat procedure for the second to fourth input field.
- ⑥ Cancel or save the entries. The input fields are automatically set to 0000. The cursor automatically jumps to the navigation arrow. In the “Data access” menu bar, the program provides information about the chosen status of the data access.
- ⑦ Return to the “Service settings” menu by selecting the navigation arrow.



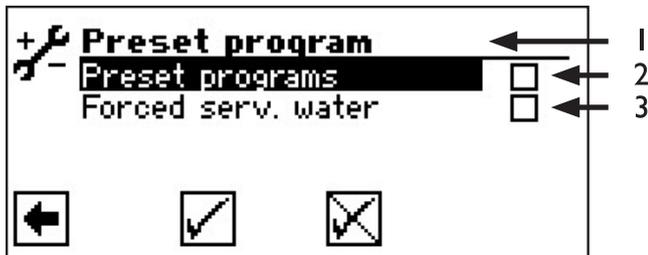
## OPEN SHORT PROGRAMS

The short programs are intended to make service work easier.

- ① In the “Settings” menu, select the “Short programs” menu field.



- ② The screen switches to the “Service settings - short programs” menu.

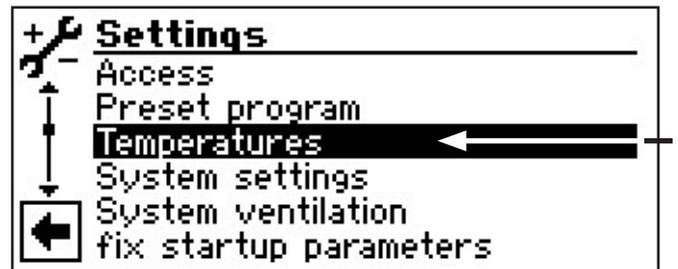


- 1 Symbol for “Service settings” program area with menu heading
- 2 Short program  
Shortens the operating cycle lock-out and releases the heat pump.
- 3 Forced domestic hot water  
Domestic water heating until high-pressure fault

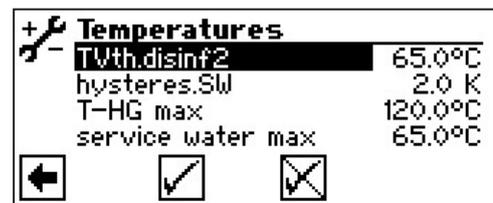
- ③ Select the required short program.
- ④ Cancel or save the entries. Return to the “Service settings” menu.

## DEFINE TEMPERATURES

- ① In the “Service settings” menu, select the “Temperatures” menu field.
- ② The screen switches to the “Service settings - temperatures” menu.



The screen switches to the “Temperature settings” menu:



TDI settemp      TDI setpoint temperature

- Setting of the setpoint temperature for thermal disinfection in the domestic water heating.

BW hysteresis      Domestic hot water hysteresis

- Setting of the control hysteresis for the domestic hot water heating (negative hysteresis).



- A There is no domestic water heating demand within this temperature change
- B Domestic water heating is demanded within this temperature range
- C Domestic hot water temperature - setpoint
- D Negative hysteresis

T-HG max      Maximum hot gas temperature

- Setting of the minimum allowable temperature in the refrigeration circuit of the heat pump.

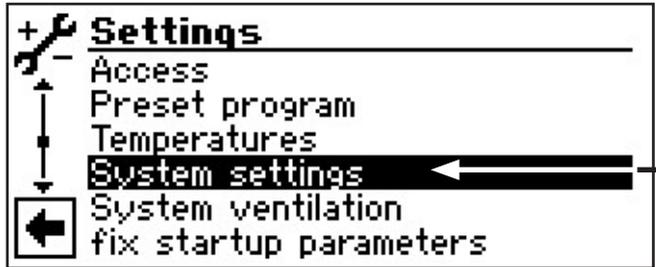
Max. domestic water temp,

- Maximum domestic hot water temperature



## DEFINING THE SYSTEM SETTING

- ① In the “Service settings” menu, select the “System setting” menu field.



- ② The screen switches to the “Service settings - system” menu.
- ③ Select the required parameters. The respective input field is highlighted with a dark background.
- ④ Make the required setting.

### ! IMPORTANT

Incorrect settings not tailored to the system components put the safety and functional reliability of the system at risk and can result in serious damage.

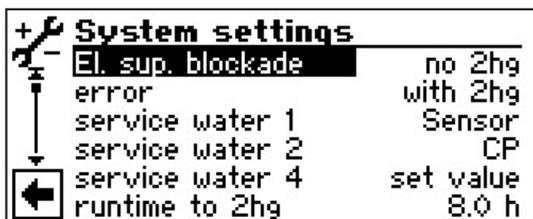
### i NOTE

The manufacturer is not liable for damage resulting from incorrect program settings, not tailored to the system components.

### i NOTE

Enter any deviation from the respective factory settings in the “System setting on commissioning” overview.

- ⑤ Exit input.
- ⑥ ③ – ⑤ procedure: if necessary, repeat for other parameters.



### EVU off EVU off times

- without ZWE = ZWE also off during EVU off
- with ZWE = ZWE enabled while EVU off

Setting only takes effect if ZWE is boiler or combination boiler.

### Fault Fault

- with ZWE = in the event of a heat pump fault, connected ZWEs are switched in depending on demand (Hz + BW)

without ZWE = in the event of a heat pump fault, connected ZWEs are only switched in if the return temperature < 15 °C (frost protection); (domestic hot water only)

### Domestic water 1 Domestic hot water 1

- Sensor = Domestic water heating is initiated or ended via a sensor in the domestic hot water tank

Thermostat = Domestic water heating is initiated or ended via a thermostat on the domestic hot water tank

### i NOTE

Connect domestic hot water thermostat to the same terminals as the domestic hot water sensor (low voltage). The domestic hot water thermostat must be suitable for low voltages (floating contact).

Thermostat closed (make contact) (= signal On) = domestic hot water demand.

### Domestic water 2 Domestic hot water 2

- ZIP = ZIP setting means circulation pump.

For the corresponding settings, please refer to the description of the circulation pump in the operating manual intended for the end customer, “Domestic hot water” program area, “Circulation” section.

BLP = BLP setting means that the ZIP output is active during domestic water heating and switches off 30 seconds after the domestic water heating switches off.

### Domestic water 4 Domestic hot water 4

- Setpoint = Heat pump attempts to reach the set domestic hot water temperature setpoint

### Runtime until ZWE

- Can be set from 0.0h to 8.0h in 0.5h increments.

The ZWE switches in after the WWB has heated the domestic water for the set time.



**Access** Data access authorisation. The "Fitter" setting (= Qualified personnel) can be used to change, without a password, all parameters, which can otherwise only be changed with "KD" access (= customer service).

**Remote maintenance**

Yes = Remote maintenance function switched on  
No = Remote maintenance function switched off

⑦ Cancel or save settings. Return to the "Service settings" menu.

**VBO flow**

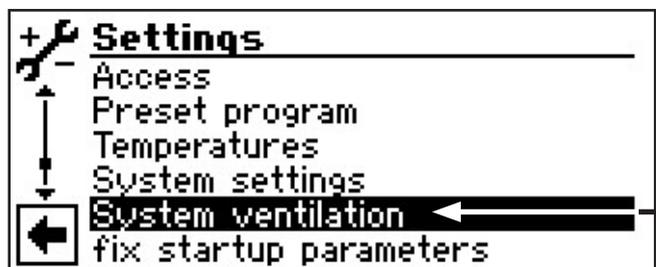
The flow time for the heat source pump can be set here. This may be necessary, if the time between switching on the pump and reaching the nominal flow is greater than 30 seconds.

**TDI message**

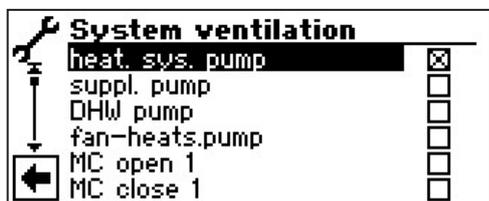
Thermal disinfection message

**VENTING (BLEEDING) THE SYSTEM**

① In the "Service settings" menu, select the "Bleed system" menu field.



② The screen switches to the "Service settings - bleed" menu.



**HUP**

Heating water and underfloor heating circulation pump

**ZUP**

Circulation pump

**BUV**

Domestic hot water circulation pump

**BOSUP fan**

Fan, well or brine circulation pump

MA1 / MA2 / MA3

Mixer 1, Mixer 2, Mixer 3 OPEN

MZ1 / MZ2 / MZ3

Mixer 1, Mixer 2, Mixer 3 CLOSED

③ Select the system part(s) to be vented.

④ Set running time of the venting program.

④.①

Select "Running time" menu field. The time input field is highlighted with a dark background.

④.②

Set running time (hourly frequency).



**NOTE**

Value range for running time = 1 – 24 hours  
Factory setting: 1 hour

④.③

Exit input.

⑤ Cancel or save the settings.



**NOTE**

If circulation pumps are selected, the venting program starts immediately after the settings have been saved.

Venting runs with 5 minutes on / 5 minutes off.

⑥ Return to the "Service settings" menu.



**NOTE**

As long as the venting program is active, the corresponding program symbol appears in the navigation screen:



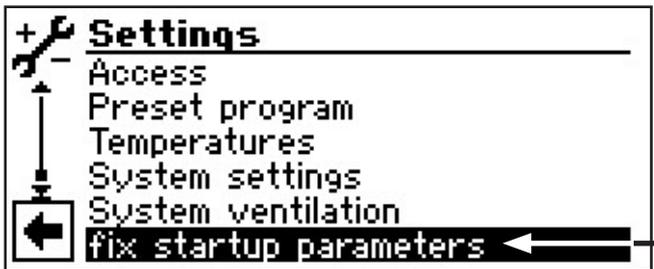


## SET IBN PARAMETERS

You can save the settings made during commissioning (= set IBN parameters). If necessary, this enables you to quickly and easily reset the system to its commissioning status.

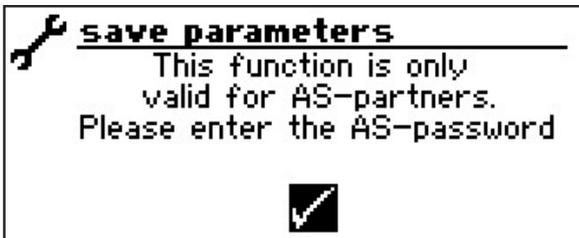
The data is stored on the circuit board of the control panel.

- 1 In the “Service settings” menu, select the “Set IBN parameters” menu field.



### NOTE

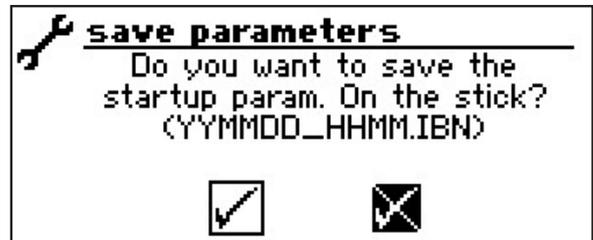
The “Set IBN parameters” function is only available with customer service access.



See Setting > Data access

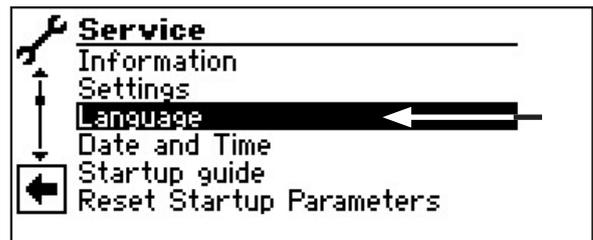


You can also save the settings data on an external USB stick.

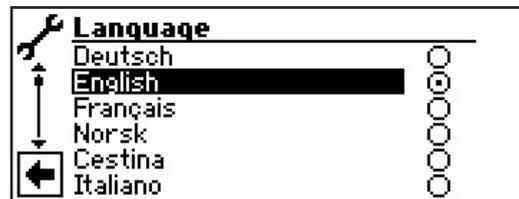


## SELECT SCREEN DISPLAY LANGUAGE

The menus and texts shown on the control panel display are available in different languages. You can select a language.



- 1 In the “Service” menu, select the “Language” menu field.
- 2 The screen switches to the “Service language” menu.



- 3 Select the required language.
- 4 Cancel or save settings. Return to the “Service” menu.



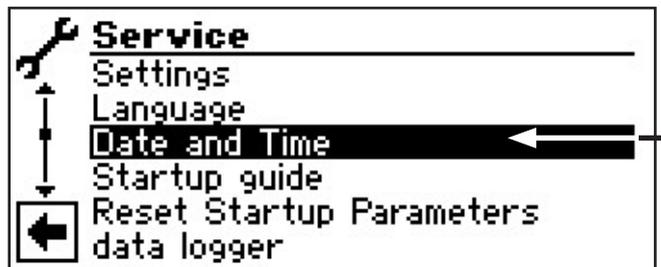
### NOTE

As soon as you select the  symbol at the end of the list, the screen display switches to the language you have selected.

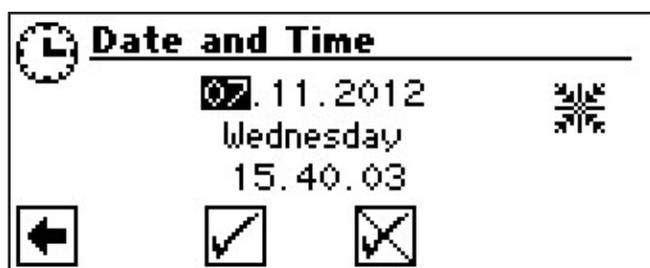


## DEFINE DATE AND TIME

- ① In the “Service” menu, select the “Date and Time” menu field.



- ② The screen switches to the “Service date + time” menu.



- ③ Go to the input field for day digits and select.
- ④ Set the digits for the current day (today).
- ⑤ Repeat the procedure analogous to ③ – ④ in the input fields for month, year, hour, minutes and seconds.

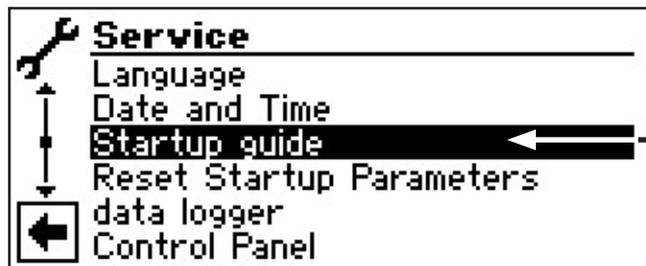


### NOTE

You cannot change the name of the day. It is generated and shown automatically.

- ⑥ Cancel or save settings. Return to the “Service” menu

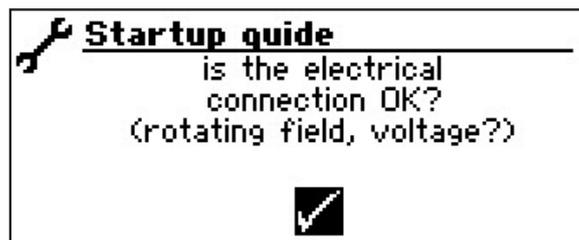
## IBN WIZARD



The control is equipped with a commissioning (IBN) or startup wizard. This wizard guides you through the controller's most important settings during the initial startup. The “GO” symbol in the main menu flashes. Click this symbol to start the commissioning wizard. This symbol disappears as soon as the initial startup is completed. For more information on the commissioning wizard, please refer to the corresponding parts in this operating manual.

You are guided step-by-step through several selection options, with which your heat pump is set.

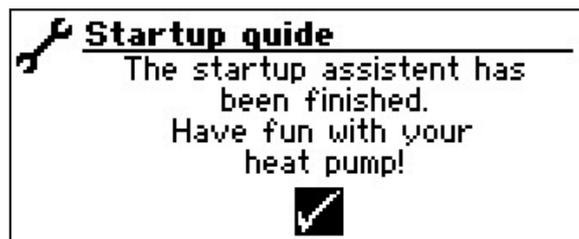
For example:



or:

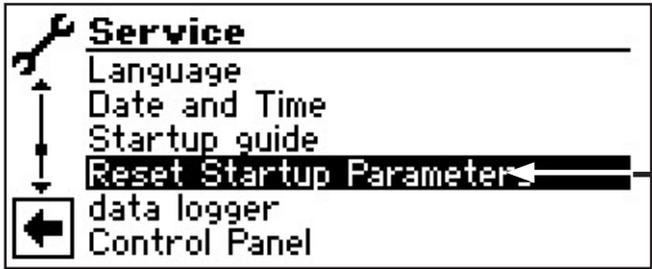


With this window you have finished making the settings:





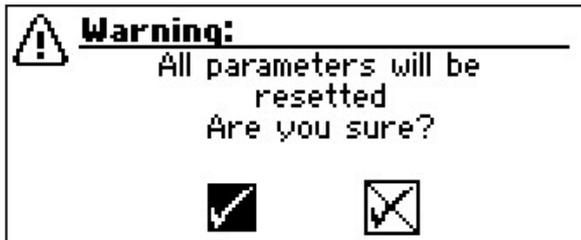
## RESTORE IBN PARAMETERS



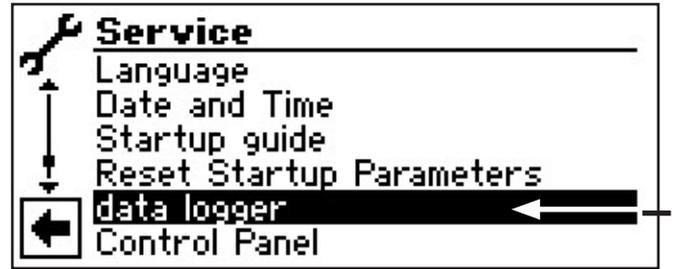
If your heat pump was commissioned by an authorised customer service partner and they saved the commissioning parameters, you can use this menu item to restore them.

This can be helpful if settings have been changed which led to a system malfunction. Please note that all settings such as heating curves, system settings, setpoints are then reset to the values applicable on commissioning.

This timers are not affected by this.



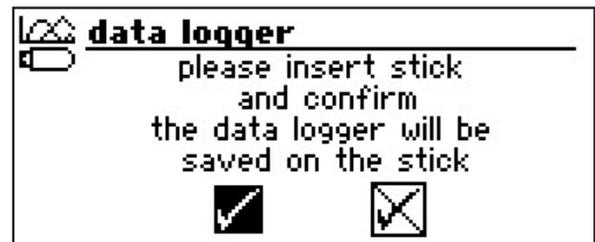
## DATA LOGGER



The control has a data logger, which records the heat pump data for a period of 48 h. (Temperatures, inputs, outputs)

This data can be saved on a USB stick. To do so, insert the USB stick into the control and use the Data Logger menu item to save the data on the USB stick.

An authorised customer service or fitter can use their password access to start a continuous data logger function. If the USB stick is inserted, the data, including date and time, is then saved automatically every 48 h.



### NOTE

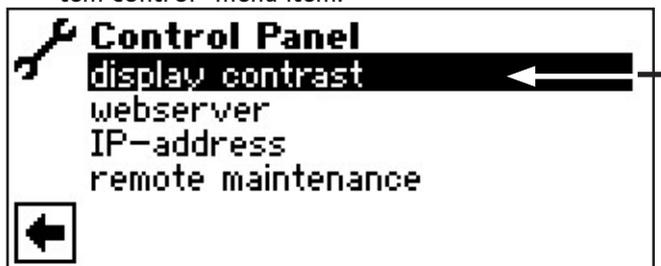
Please remember to save the data logger on the USB stick before removing the USB stick from the control panel. Otherwise the most recent values will be lost.



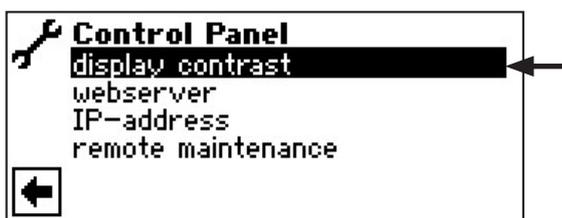
## SET THE CONTRAST OF THE CONTROL PANEL DISPLAY

You can adjust the contrast of the control panel display to your needs.

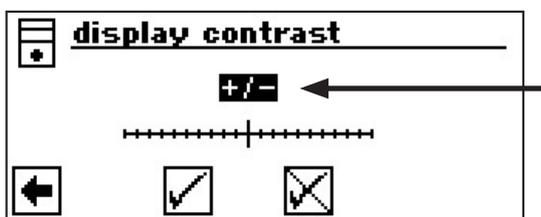
- 1 Scroll down the “Service” menu and select the “System control” menu item.



- 2 The screen switches to the “System control” menu. Here, select the “Display Contrast” menu item.



- 3 The screen switches to the “Display Contrast” menu. Here, select “+ / -”. Adjust the contrast by turning the “turn/push knob”.



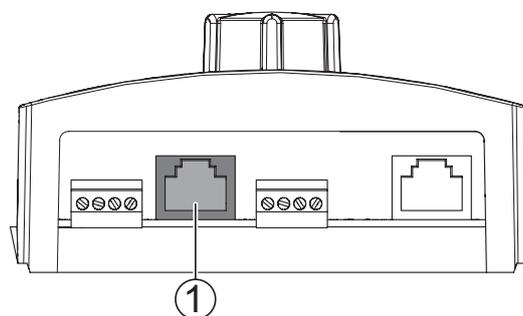
- 4 Save settings or cancel.

## WEB SERVER



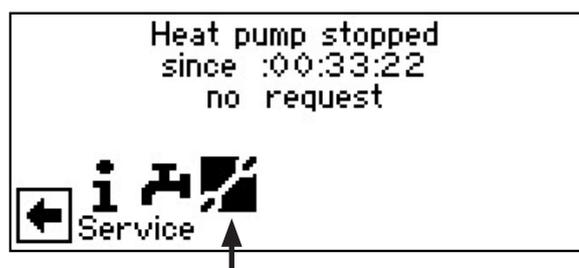
### NOTE

The left-hand socket on the underside of the control panel (I) can be used to connect to a computer or a network, in order to control the domestic hot water and heat pump controller remotely from there. This requires a screened network cable (category 6) to be laid through the unit during the electrical connection work. If this network cable is available, plug the RJ-45 connector of the network cable into the left-hand socket of the control panel.



The “Web server” function enables the domestic hot water and heat pump controller to be controlled from a computer via an internet browser.

- 1 In the navigation screen, select the symbol.

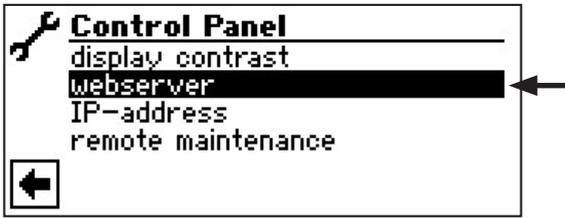


- 2 The screen switches to the “Service” menu. Here, scroll down the menu and select the “System control” menu item.





- ③ The screen switches to the “System control” menu. Here, select the “Web server” menu item.



- ④ The screen switches to the “Web server” menu. Here, firstly, enter the 6-digit numerical password to enable access to the data input. You will need this password later to register the computer at the control. If you enter an incorrect numeric password, you can only read out data, but not change it.



- ⑤ If the computer is connected directly with the domestic hot water and heat pump controller, activate the “DHCP server” menu item.



**NOTE**

The connected computer must operate as a “DHCP client”. As a result, the computer receives all necessary connection data automatically from the DHCP server of the domestic hot water and heat pump controller. In the event of any connection problems, please check the network settings in the operating system of your computer and change them if necessary.

**DHCP CLIENT**

If the heat pump controller is connected to a network with a DHCP server, this server (e.g. router) can assign an IP address to the controller. To do this, the DHCP client item must be activated. The IP address received is displayed in the “IP address” menu following a restart.



**NOTE**

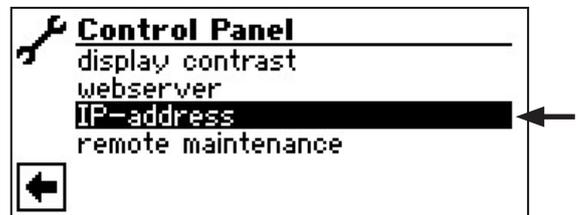
If the computer is connected to the domestic hot water and heat pump controller via a router, you must remember to switch off the “DHCP server” menu item. If the “DHCP server” is switched off, the domestic hot water and heat pump controller must be restarted (Reset).



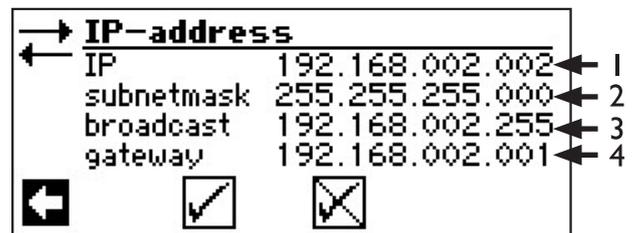
**NOTE**

The web server's display is suitable for a resolution of at least 1024 x 600.

- ⑥ Save settings and exit menu.  
 ⑦ In the “System control” menu, select the “IP address” menu item.



- ⑧ The screen switches to the “IP address” menu.



- 1 IP address of the domestic hot water and heat pump controller
- 2 Subnet mask
- 3 Address broadcast
- 4 Gateway address of the connected router



If the “DHCP server” or “DHCP client” is activated, data cannot be changed here, only read out.

The computer connected as a DHCP client is automatically assigned an IP address.

To access the domestic hot water and heat pump controller from the connected computer, open an internet browser and enter “http://” in the address line, and then enter the number that appears on the screen of your domestic hot water and heat pump controller under “IP”.

If the computer is connected via a router and, consequently, the “DHCP server” of the domestic hot water and heat pump controller is disabled, you must adjust the IP address (I) as well as all other entries (subnet mask, broadcast, gateway), displayed on the screen of the domestic hot water and heat pump controller, to the address range of your router.

Example:

The IP address of the connected router (= gateway) is 192.168.2.1, and the number of the subnet mask is 255.255.255.0.

You then have to enter and save the following address data in the domestic hot water and heat pump controller:



#### NOTE

You must enter an address between 192.168.002.002 and 192.168.002.254 under the “IP” menu item. The address you enter must not have been assigned to any other device managed by the connected router.



#### NOTE

The JVM (Java Virtual Machine) is available as a plug-in for your internet browser. You can download the JVM web browser plug-in from the Internet (<http://www.java.com>).

## REMOTE MAINTENANCE



#### NOTE

In order to use the “Remote maintenance”, the following requirements must be fulfilled:

- A special agreement has been concluded with the manufacturer.
- The heat pump controller has access to the internet with open port 21 via a broadband connection (DSL) and a router.
- The heat pumps has been commissioned by the manufacturer's customer service.
- The manufacturer has received a fully completed application form for remote maintenance.



#### NOTE

Remote maintenance is an additional service of the manufacturer provided at an additional charge.



#### NOTE

All settings concerning the “Remote maintenance” function may only be made by authorised service personnel.

The “Remote maintenance” function enables the domestic hot water and heat pump controller to be accessed directly from the manufacturer's remote maintenance server.



## SWITCH ON THE REMOTE MAINTENANCE FUNCTION

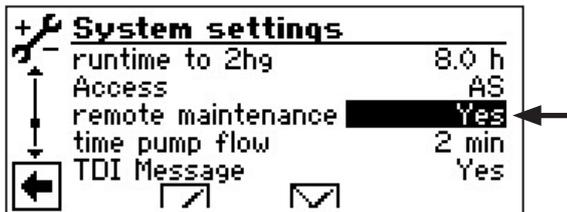
- ① In the navigation screen, select the symbol.



- ② The screen switches to the “Service” menu. Here, select the “System setting” menu item.



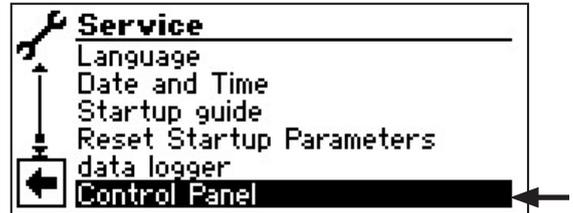
- ③ Here, scroll down the menu and select the “Remote maintenance” menu item.



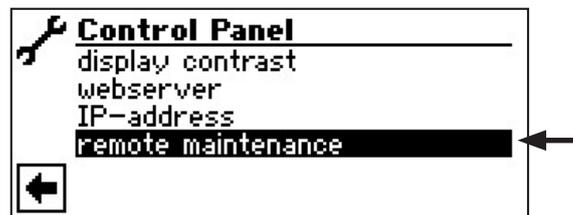
- ④ Save setting and return to the “Service” menu.

## SET THE REMOTE MAINTENANCE FUNCTION

- ① In the “Service” menu, select the “System control” menu item.



- ② The screen switches to the “System control” menu. Here, select the “Remote maintenance” menu item.



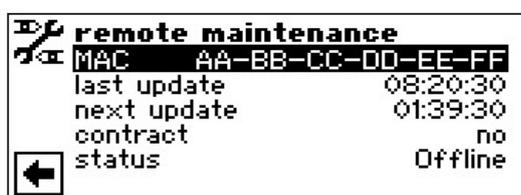


## INFORMATION ABOUT THE REMOTE MAINTENANCE FUNCTION

- ① In the “Remote maintenance” menu, select the “Information” menu item.



- ② The screen switches to the “Remote maintenance information” menu.



<b>MAC</b>	<b>MAC address of the control</b> The manufacturer must be informed of the data when the contract is concluded
<b>last act</b>	<b>elapsed time since the last activation of the remote maintenance</b>
<b>next act</b>	<b>time until the next automatic activation of the remote maintenance</b>
<b>Contract</b>	<b>type of remote maintenance contract concluded</b>
<b>Status</b>	<b>Status of the remote maintenance</b> <i>Offline</i> = Default display (is displayed in most cases) <i>Online</i> = connection to the remote maintenance server is currently established and active

## SET THE REMOTE MAINTENANCE FUNCTION

- ① The screen switches to the “Remote maintenance” menu. Here, select the “IP address” menu item.



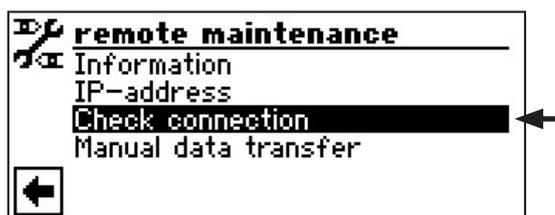
- ② The screen switches to the “Remote maintenance IP address” menu.



Here, enter the **IP address of the remote maintenance server** (current status: 212.223.174.89).

- NOTE**  
Following successful connection with the remote maintenance server, the IP address may no longer be changed.  
The router must be set as a gateway.

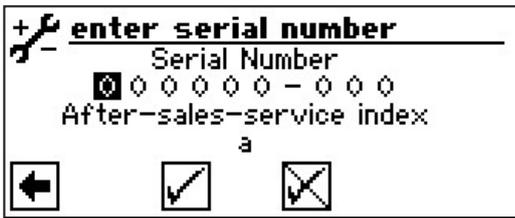
- ③ Save settings and return to the “Remote maintenance” menu.
- ④ Select the “Test connection” menu item.



- NOTE**  
It is essential to test the connection when making the initial setting.



- ⑤ The screen switches to the “Serial number input” menu.



Enter the **serial number of the heat pump**.



#### NOTE

A connection with the remote maintenance server is only possible if you enter the serial number of your heat pump correctly. The heat pump's serial number is given on the nameplate attached to the housing of the heat pump.

- ⑥ Save setting. The connection with the remote maintenance server is then checked.



If errors occur during the checking of the connection, a corresponding warning appears on the screen of the domestic hot water and heat pump controller:

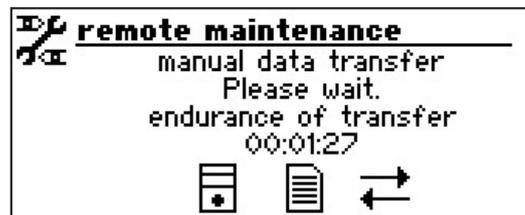


## MANUAL DATA TRANSFER

- ① In the “Remote maintenance” menu, select the “Manual data transfer” menu item.



- ② The connection with the remote maintenance server is established and the data is transferred.



If connection problems occur, the following message appears on the screen.



## CAUSES OF ERRORS IN CASE OF CONNECTION PROBLEMS

If it is not possible to connect with the remote maintenance server, this may be caused by the following:

- The heat pump controller is not connected to the internet.
- The standard gateway in the “System control / IP address” menu is not set correctly.
- Port 21 is not released for the heat pump controller.
- The IP address of the heat pump controller is not adjusted to your local network.

If connection problems arise, please check all the settings in the “Remote maintenance” area, in the “web server” area and in the “System control / IP address”. If necessary, correct the settings.

If it is still not possible to connect with the remote maintenance server, please contact the manufacturer's customer service department.



## Error diagnosis / error messages

No.	Display	Description	Remedy
701	Error low pressure. Please call fitter	Low pressure pressostat or low-pressure sensor in the cooling circle has responded (L/W) or for longer than 20 seconds (S/W).	Check HP for leakage, switching point pressure state, defrosting and T-outd. min.
702	Low pressure stop RESET autom.	Only possible for L/W devices: Low pressure in the cooling circle has responded. After some time, automated HP restart.	Check HP for leakage, switching point pressure state, defrosting and T-outd. min.
703	Antifreeze Please call fitter	Only possible for L/W devices: If the heat pump is running and the temperature in flow is < 5 °C, antifreeze is detected.	Check HP power, defrost valve and heating system.
704	Error hot gas Reset in hh:mm	Maximum temperature in the hot gas cooling circle exceeded. Automatic HP restart after hh:mm.	Check coolant quantity, evaporation, overheating flow, return and HS-min.
705	Motor protection VEN Please call fitter	Only possible for L/W devices: Motor protection has responded.	Check set value and ventilator / BCP.
706	Motor protection BCP Please call fitter	Option only possible for S/W- or W/W devices Motor protection of the brine or well water circulating pump or the compressor has responded.	Check set values, compressor, BOS.
707	Coding of HP Please call fitter	Break or short-circuit of the coding bridge in HP after the first switch-on.	Coding resistance in HP, check plug and connection line.
708	Return sensor Please call fitter	Break or short-circuit in the return sensor.	Check return sensor, plug and connection line.
709	Flow sensor Please call fitter	Break or short-circuit in the flow sensor No fault shutdown for S/W- or W/W devices.	Check flow sensor, plug and connection line.
710	Hot gas sensor Please call fitter	Break or short-circuit in the hot gas sensor of the cooling circle.	Check hot gas sensor, plug and connection line.
711	External temp. sensor Please call fitter	Break or short-circuit in the external temperature sensor No fault shutdown. Fixed value to -5 °C.	Check external temperature sensor, plug and connection line.
712	Domestic hot water sensor. Please call fitter	Break or short-circuit in the domestic hot water sensor No fault shutdown.	Check domestic hot water sensor, plug and connection line.
713	HS-on sensor Please call fitter	Break or short-circuit in the heat source sensor (inlet).	Check heat source sensor, plug and connection line.
714	Hot gas SW Reset in hh:mm	Check thermal application limit of the HP. Domestic hot water off for hh:mm. Fault only triggers if the compressor is running.	Check flow of domestic hot water, heat exchanger, domestic hot water temperature and circulation pump.
715	High-pressure switch-off RESET autom.	High pressure in the cooling circle has responded. After some time, automated HP restart.	Check flow of HW, overflows, temperature and condensation.
716	High-pressure fault Please call fitter	High pressure pressostat in the cooling circle has responded several times.	Check flow of HW, overflows, temperature and condensation.
717	Flow HS Please call fitter	Flow switch for W/W devices has responded during the pre-rinsing time or operation.	Check flow, switching point for DFS, filter, air clearance.
718	Max. outside temp. RESET autom. in hh:mm	Only possible for L/W devices: Outside temperature has exceeded permissible maximum value. Automatic HP restart after hh:mm.	Check outside temperature and set value.
719	Min. outside temp. RESET autom. in hh:mm	Only possible for L/W devices: Outside temperature has fallen below the permissible minimum value. Automatic HP restart after hh:mm.	Check outside temperature and set value.



No.	Display	Description	Remedy
720	HS temperature RESET autom. in hh:mm	Option only possible for S/W- or W/W devices Temperature at evaporation outlet has fallen below the safety value on the HS side several times. Automatic HP restart after hh:mm.	Check flow, filter, air clearance, temperature.
721	Low-pressure switch-off RESET autom.	Low pressure pressostat or low-pressure sensor in the cooling circle has responded. After some time, automated HP restart (S/W and W/W).	Check switching point of the pressostat, flow on HS side.
722	Tempdiff HW Please call fitter	Temperature spread in the heating mode is negative (=erroneous).	Check function and location of the flow and return sensor.
723	Tempdiff SW Please call fitter	Temperature spread in the domestic hot water mode is negative (=erroneous).	Check function and location of the flow and return sensor.
724	Tempdiff defrosting Please call fitter	Temperature spread in the heating circle is > 15 K during defrosting (=danger of frost).	Check function and location of the flow and return sensor, HCP capacity, overflows and heating circles.
725	System error DHW Please call fitter	Domestic hot water faulty, desired tank temperature is fallen below substantially.	Check circulating pump DHW, tank filling, shutoff move and 3-way valve. Ventilate hot water and SW.
726	Sensor mixing circ 1 Please call fitter	Break or short-circuit in the mixing circle sensor.	Check mixing circle sensor, plug and connection line.
727	Brine pressure Please call fitter	Brine pressure pressostat has responded during the pre-rinsing time or during operation.	Check brine pressure and brine pressure pressostat.
728	Sensor HS Off Please call fitter	Break or short-circuit in the heat source sensor at the HS outlet.	Check heat source sensor, plug and connection line.
729	Rotating field error Please call fitter	Compressor without power after switching on.	Check rotating field and compressor.
730	Screed heating error Please call fitter	The screed heating program could not reach an FL temperature level in the specified time interval. Screed heating program continues running.	The screed heating program could not reach an FL temperature level in the specified time interval. Screed heating program continues running.
731	Timeout TDI	The temperature required for thermal disinfection could not be reached within the set switching times.	
732	Cooling fault Please call fitter	The hot water temperature of 16 °C has been fallen short of several times.	Check mixer and heating circulation pump.
733	Anode fault Please call fitter	Fault input of the impressed current anode has responded.	Check connection line between anode and potentio stat. Fill SW tank.
734	Anode fault Please call fitter	Error 733 present for more than two weeks and domestic hot water is locked.	Acknowledge error in order to release domestic hot water preparation again. Rectify 733.
735	Error Ext. En Please call fitter	Only possible with installed expansion board: Break or short-circuit in the sensor "External energy source".	Check sensor "External energy source", plug and connection line.
736	Error solar collector Please call fitter	Only possible with installed expansion board: Break or short-circuit in the "solar collector" sensor.	Check "solar tank" sensor, plug and connection line.
737	Error solar tank Please call fitter	Only possible with installed expansion board: Break or short-circuit in the "solar tank" sensor.	Check "solar tank" sensor, plug and connection line.
738	Error mixing circle 2 Please call fitter	Only possible with installed expansion board: Break or short-circuit in the "mixing circle 2" sensor.	Check "mixing circle 2" sensor, plug and connection line.
739	Error mixing circle 3 Please call fitter	Only possible with installed expansion board: Break or short-circuit in the "mixing circle 3" sensor.	Check "mixing circle 3" sensor, plug and connection line.



No.	Display	Description	Remedy
750	Return sensor external Please call fitter	Break or short-circuit in the external return sensor.	Check external return sensor, plug and connection line.
751	Phase monitoring fault	Phase-sequence relay has responded.	Check rotary field and phase-sequence relay.
752	Flow error	Phase-sequence relay or flow switch has responded.	see errors No. 751 and No. 717.
755	Lost connection to slave Please call fitter	A slave has not responded for more than 5 minutes.	Check network connection, switch, and IP addresses. Perform HP search if necessary.
756	Lost connection to master Please call fitter	A master has not responded for more than 5 minutes.	Check network connection, switch, and IP addresses. Perform HP search if necessary.
757	Low-pressure fault in W/W-appliance	Low-pressure pressostat in the W/W-appliance has triggered either repeatedly or for more than 20 seconds.	If this malfunction occurs three times, the installation can only be cleared again by authorised service personnel!
758	Defrosting malfunction	Five times in a row, defrosting has either lasted longer than 10 minutes or was terminated with a feed temperature of < 10 °C.	Check flow rate. Check flow sensor.
759	TDI message	Unable to correctly carry out thermal disinfection 5 times in succession.	Check setting of second heat generator and safety temperature limiter.
760	Defrosting fault	Defrosting ended 5 times in succession by maximum time (strong wind impinges on evaporator) .	Protect the fan and evaporator from strong wind.
761	LIN timeout	LIN timeout.	Check cable/contact.
762	Sensor evaporator intake	Tü sensor error (evaporator intake).	Check sensor, replace if necessary.
763	Sensor compressor intake	Tü1 sensor error (compressor intake).	Check sensor, replace if necessary.
764	Sensor compressor heater	Sensor error compressor heater.	Check sensor, replace if necessary.
765	Overheating	Overheating longer than 5 minutes below 2K.	When switching on for the first time, check rotary field, otherwise phone customer service.
766	compressor's functional range	Operation for 5 minutes outside the compressor's functional range.	Check rotary field.
767	STB E-Rod	STB of the heating element has been activated.	Check the heating element and press the fuse back in.
768	Flow monitoring	Insufficient flow in defrost cycle.	Check hydraulics, check pump, check flow.
769	Pump control	After 10 sec compressor runtime excessively low flow.	Check PWM cable, check pump.
770	Low superheat	Overheating lies below the limit value for a lengthy period.	Check the temperature sensor, pressure sensor and expansion valve.
771	High superheat	Overheating lies below the limit value for a lengthy period.	Check the temperature sensor, pressure sensor, fill quantity and expansion valve.
776	limit of application-CP	Compressor operates outside its use limits for a lengthy period.	Check the thermodynamics.
777	Expansion valve	Expansion valve is defective.	Check the expansion valve, connection cable and if applicable the SEC board.
778	Low pressure sensor	Low-pressure sensor is defective.	Check the sensor, connector and connection cable.
779	High pressure sensor	High-pressure sensor is defective.	Check the sensor, connector and connection cable.



No.	Display	Description	Remedy
780	EVI sensor	EVI sensor is defective.	Check the sensor, connector and connection cable.
781	Liquid temp. sensor before EXV	Liquid temperature sensor upstream of the ex-valve is defective.	Check the sensor, connector and connection cable.
782	Suction gas EVI temp. sensor	Suction gas EVI temperature sensor is defective.	Check the sensor, connector and connection cable.
783	Communication SEC board – Inverter	Connection between the SEC board and the inverter is disrupted.	Check the connection cable, interference suppression capacitors and wiring.
784	VSS lockdown	Inverter is blocked.	Disconnect the complete system from the power supply for 2 minutes. If it occurs again, check the inverter and compressor.
785	SEC-Board defective	Error found in the SEC board.	Replace the SEC board.
786	Communication SEC board – Inverter	Connection between SEC board and HZ/IO is disrupted by the SEC board.	Check the HZ/IO – SEC board wiring.
787	VD alert	Compressor signals faults.	Acknowledge fault. If an error occurs repeatedly, phone the authorised service personnel (customer service).
788	Major VSS fault	Fault in the inverter.	Check the inverter.
789	LIN/Encoding not found	Control unit unable to find coding. Either the LIN connection is interrupted or the coding resistor is not detected.	Check the connection cable LIN / coding resistor.
790	Major VSS fault	Fault in the power supply of the inverter / compressor.	Check the wiring, inverter and compressor.
791	ModBus Inverter	The control panel has no ModBus communication with the inverter for at least 10 seconds or 10 communication packets to the inverter were lost. Reset automatically.	Check the Modbus wiring of inverter.
792	LIN-connection lost	Unable to find a master board or any configuration.	Check the coding connector on the LIN board(s).
793	Inverter Temperature	Temperature sensor fault in the inverter. Internal inverter temperature too high at least 5x within 24 h.	Fault acknowledges itself.
794	Overvoltage	Overvoltage on inverter.	Check the inverter voltage supply.
795	Undervoltage	Undervoltage on inverter.	Check the inverter voltage supply.
796	Safety switch off	Safety Input was triggered. Case 1: Inverter malfunction. Reset automatically Case 2: High-pressure pressure-stats in refrigerating circuit have triggered Reset automatically Case 3: Only LWDV malfunction message caused by voltage fluctuations exceeding the valid standard.	Case 1: Check inverter. Remedy fault. Case 2: Check HW throughflow, overflow, flow temperature sensor and high-pressure sensor. Remedy fault. Case 3: It must be turned off and resecured manually
797	MLRH is not supported	Heating rod regulating is not supported.	–
798	ModBus Fan	No ModBus communication with the fan for at least 10 seconds. Reset automatically.	Check ModBus – Fan wiring
799	ModBus ASB	No ModBus communication with the ASB board for at least 10 seconds. Reset automatically.	Check ModBus – ASB board wiring



No.	Display	Description	Remedy
800	Desuperheater-error	Shutdown is triggered when desuperheater temperature $\geq 80^{\circ}\text{C}$ . Device is switched off and DO_Pause is written in shutdowns. Device is released again for operation after 2 hours. If the shutdown occurs 5 times within 24 hours, error 800 is written to the fault memory.	Remove energy from desuperheater memory. The machine can be restarted as soon as the temperature falls $< 80^{\circ}\text{C}$ .
802	Switchbox fan	Shutdown will be triggered when temperature in the electrical control box $\geq 80^{\circ}\text{C}$ . If the temperature falls below $70^{\circ}\text{C}$ , then the heat pump will start up again. Reset automatically.	Check fan for correct function. Check connection cable. Check sensor. Check electrical control box openings for blockages.
803	Switchbox fan	Error 802 tripped 3 times within 24 hours. Manual reset required. If the temperature in the electrical switch box is still $\geq 80^{\circ}\text{C}$ , the error will be triggered again immediately.	Check fan for correct function. Check connection cable. Check sensor. Check electrical control box openings for blockages.
806	ModBus SEC	The SEC-board has no ModBus communication for at least 10 seconds or query has failed 10 times in a row. Reset automatically.	Check ModBus – SEC board wiring.
807	Lost ModBus communication	All possible ModBus communication faults with unit components for the respective unit are present simultaneously for at least 10 seconds. Reset automatically.	Check ModBus interface on the control unit, connection cable to ModBus distributor and ModBus distributor itself. Check Modbus wiring.



## ACKNOWLEDGING A FAULT

If a fault occurs and an error message appears on the screen, then:

- ① Note error number.
- ② Acknowledge error message by pressing the “turn/push knob” (for 7 seconds).  
The screen changes from the error message to the navigation screen.
- ③ If this error message occurs again, contact the fitter or authorised service personnel (= customer service), if instructed to do so by the error message. Notify them of the error number and agree further action.

## Technical Data

### INSTALLATION

Only in frost-free, dry rooms protected from the weather.

Ambient temperature: 0 °C – 35 °C

Electrical connection: 230 V AC, 18 VA, 0.1 A  
(max. power consumption of

controller

without connected units)

### OUTPUTS

Relay contacts: 8 A / 230 V

Fuse: 6.3 AT (for all relay outputs)

In total, loads up to 1,450 VA can be connected to the outputs.

### INPUTS

Optocoupler: 230 V

Sensor inputs: NTC sensor 2.2 k $\Omega$  / 25 °C

### CONNECTIONS

Control cable: 12-pole, outputs 230 V

Sensor cable: 12-pole, low voltage

Plug-in terminals: 1-pole, screw terminals

### PORTS/INTERFACES

USB: USB version 2.0 (USB 2.0)  
Host, A connector (for USB stick only!)

Ethernet: 1 x 10 Base-T / 100 Base-TX  
(RJ-45, connector, elbowed)



Unit designation				WWB 21	
Heat pump	Brine/water   Air/water   Water/water	• applicable   — not applicable		—   —   •	
	Indoors   Outdoors	• applicable   — not applicable		•   —	
Conformity				•	
Performance data	Heating capacity/COP at				
	W25/W50	1 compressor	kW   ...	2,0   4,4	
	W20/W65	1 compressor	kW   ...	1,5   2,6	
	W30/W65	1 compressor	kW   ...	2,0   3,3	
	W40/W65	1 compressor	kW   ...	2,5   3,8	
Limits of use	Hot water		°C	20 - 70	
	Heat source		°C	18 - 42	
	Max. ambient temperature		°C	35	
	Max. operating pressure of heating circuit   heat source		bar   bar	3   10	
Sound	Sound pressure level measured at distance of 1m around the machine (in free field)		dB(A)	37	
	Sound power level to EN12102		dB	52	
Heat source	Flow rate: minimum flow   nominal flow   maximum flow		l/h	90   120   200	
	Heat pump pressure loss $\Delta p$   Flow rate		bar   l/h	0,01   120	
Hot water	Flow rate: minimum flow   nominal flow   maximum flow		l/h	300   350   500	
	Free compression, heat pump $\Delta p$   flow rate		bar   l/h	0,6   350	
General unit data	Dimensions (width x depth x height)			mm	
	Total weight			kg (kg)	
	Connections	Hot water		...	G 1" AG
		Heat source		...	G 3/4" AG
Refrigerant	Refrigerant type   Quantity		...   kg	R134a   0,48	
Electrics	Voltage code   all-pole fusing of heat pump and control voltage *)			...   A 1~/N/PE/230V/50Hz   B10A	
Heat pump	Effective power consumption W25/W50: Power consumption   current consumption   $\cos\phi$			kW   A   ... 0,45   2,1   0,93	
	Maximum machine current within the use limits			A 3,35	
	Starting current: direct   with soft starter			A   A 13,5   —	
	Protection type			IP 20	
Components	Hot water circulation pump at nominal flow: Power consumption   current consumption			W   A 8   n.n.	

n.d. = not detectable

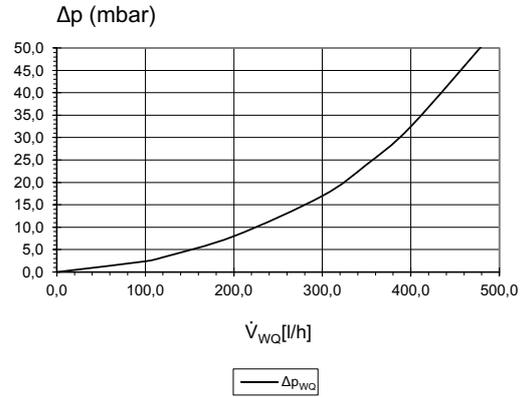
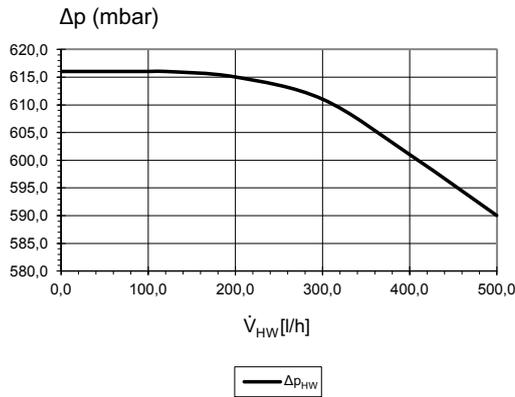
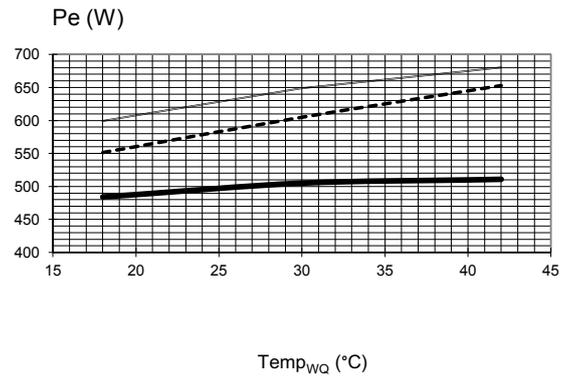
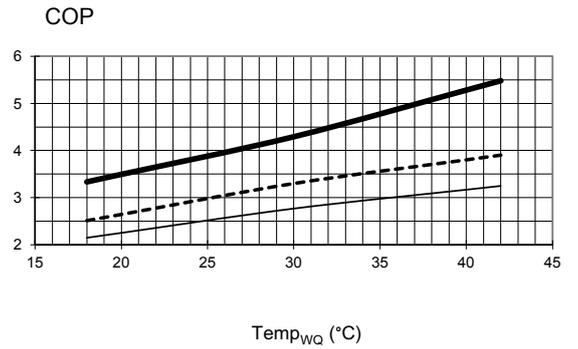
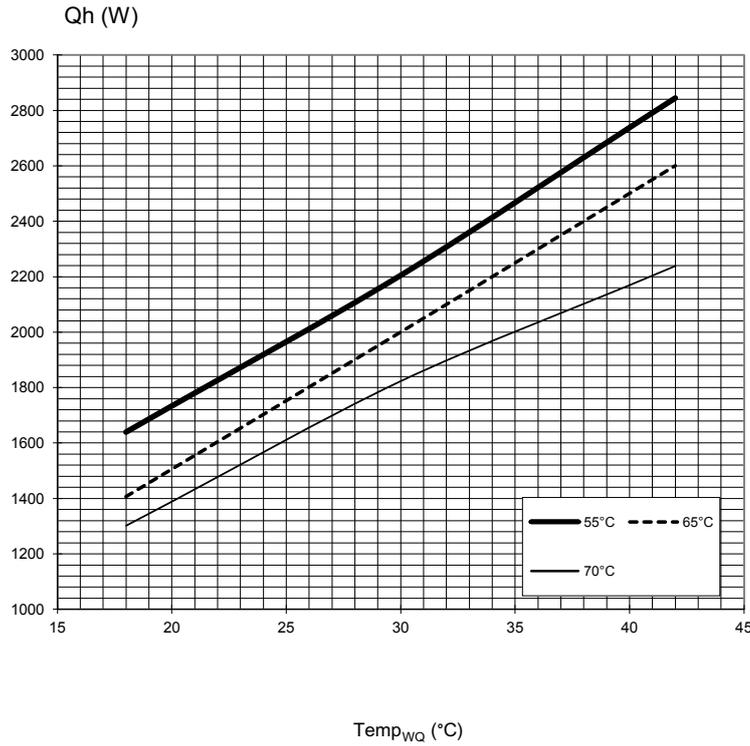
\*) comply with local regulations n.d. = not detectable

813248b



# WWB 21

# Performance curves



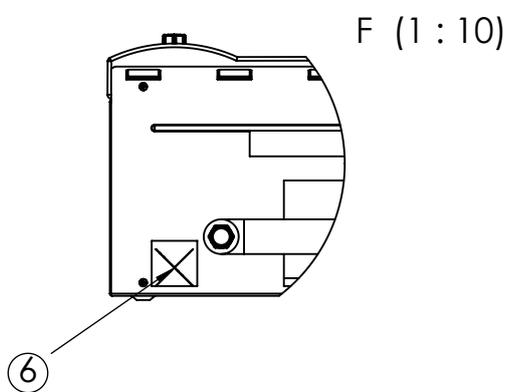
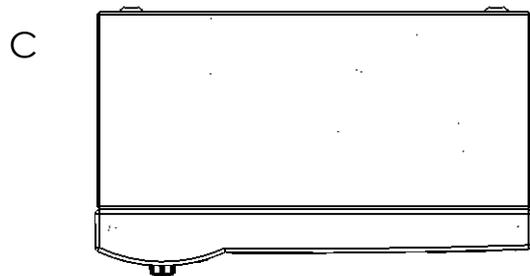
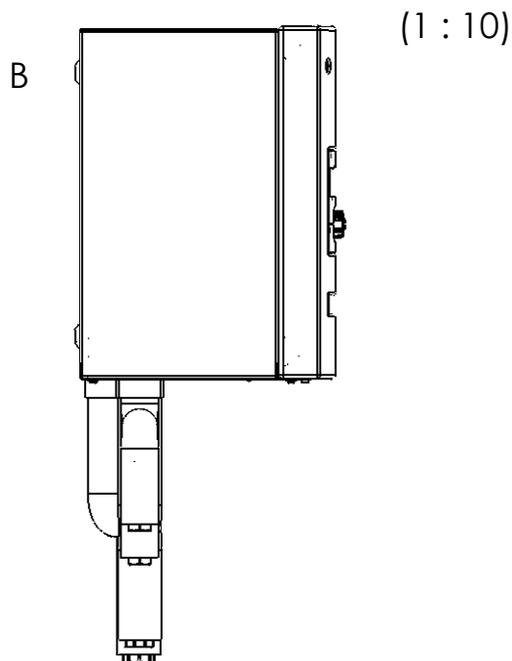
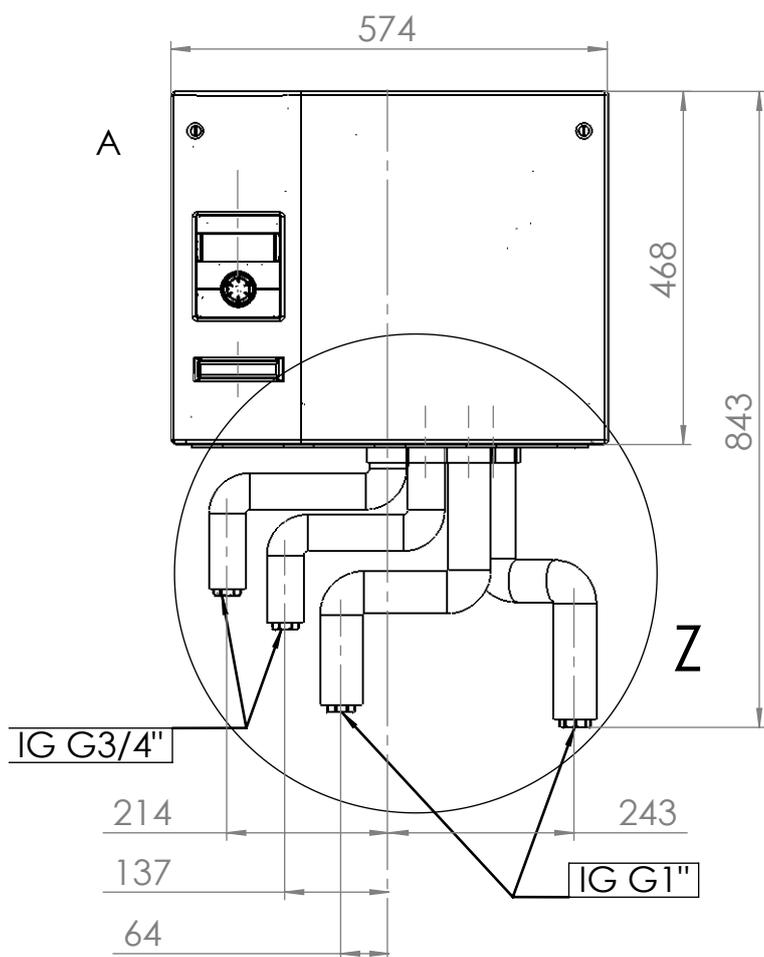
823219b

- Legend:
- $\dot{V}_{HW}$  Heating water flow rate
  - $\dot{V}_{HW}$  Heat source flow rate
  - $Temp_{HW}$  Heat source temperature
  - Qh Heating capacity
  - Pe Power consumption
  - COP Coefficient of performance / efficiency rating
  - $\Delta p_{HW}$  Heating circuit pressure loss
  - $\Delta p_{WQ}$  Heat source free compression



# Dimensioned drawings

# WWB 21



Z (1 : 7.5)

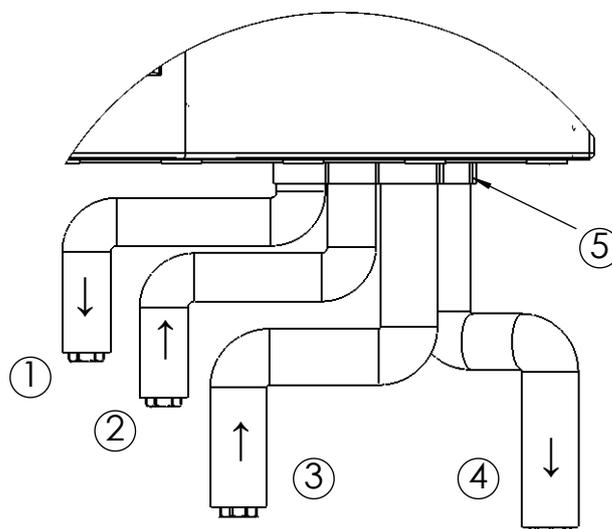
Legend: 819419-01

WWB 21 dimensions

- A Front view
- B Side view
- C Plan view
- F View from underneath
- Z Detail view of unit connections

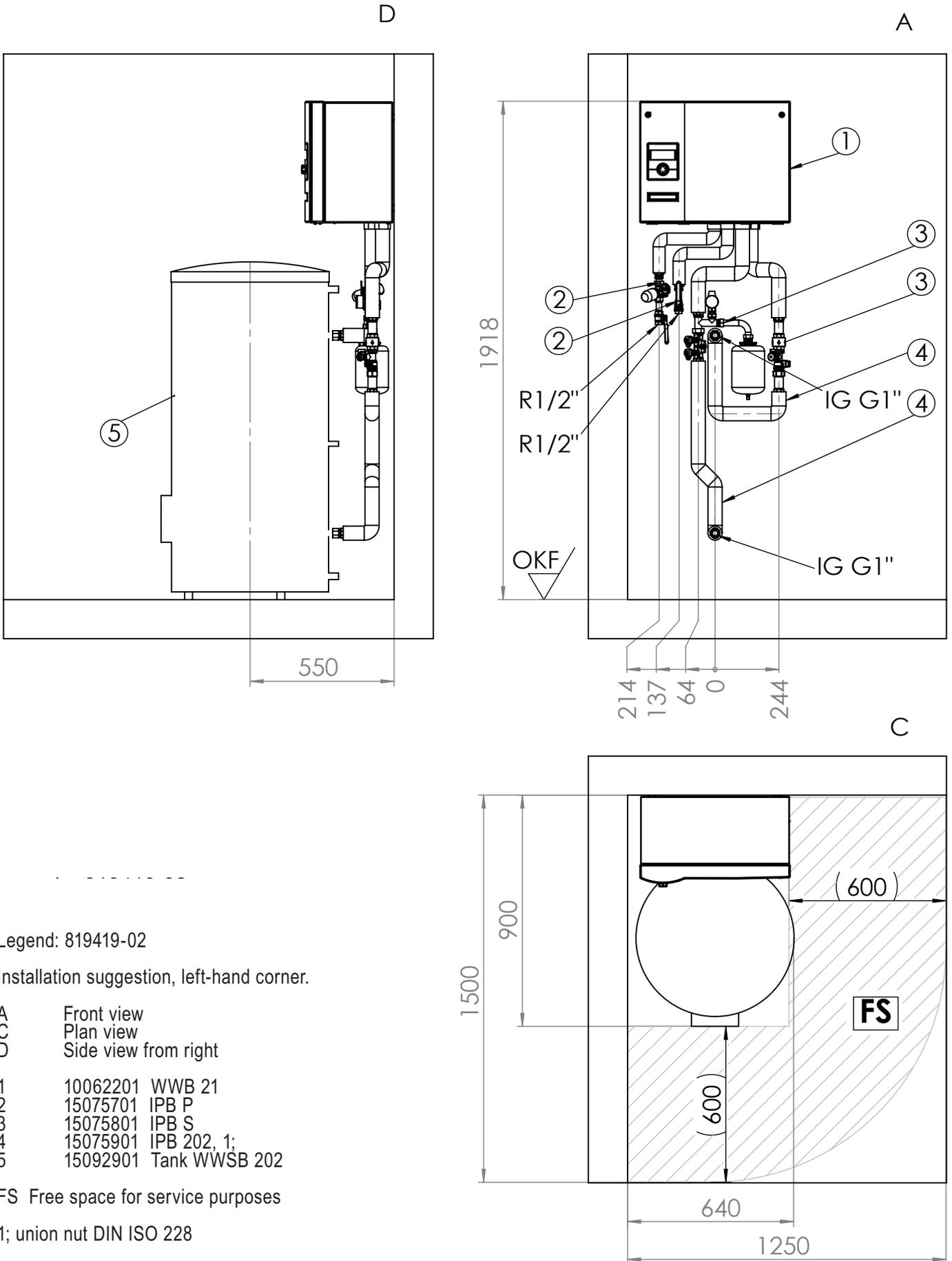
- 1 Heat source outlet (in scope of supply), 1;
- 2 Heat source inlet (in scope of supply), 1;
- 3 Heating water return (in scope of supply), 1;
- 4 Heating water flow (in scope of supply), 1;
- 5 Isolation kit (included in delivery)
- 6 Electric supply

1; union nut DIN ISO 228





# Installation plan WWB 21 Installation suggestion, left-hand corner



Legend: 819419-02

Installation suggestion, left-hand corner.

- A Front view
- C Plan view
- D Side view from right

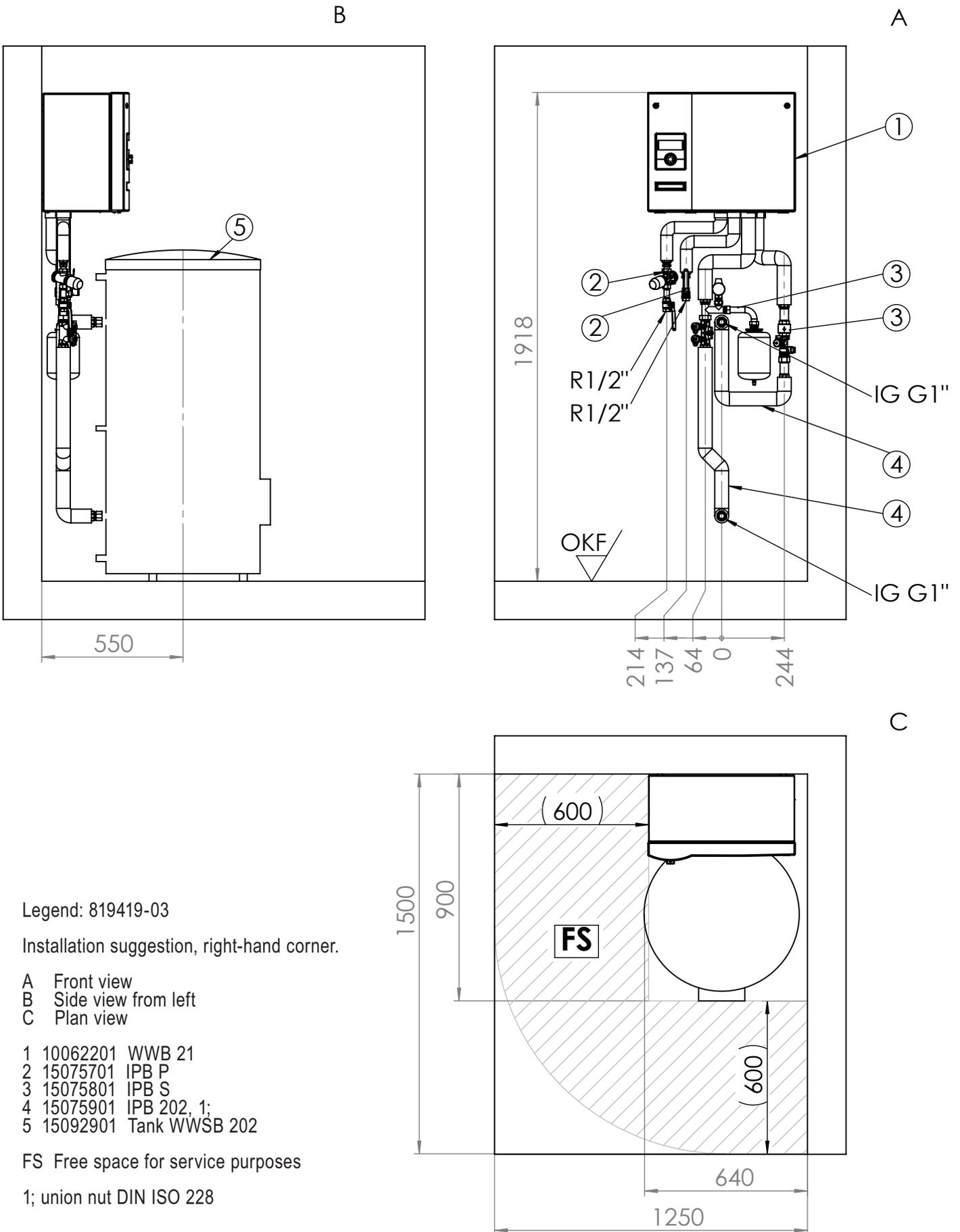
- 1 10062201 WWB 21
- 2 15075701 IPB P
- 3 15075801 IPB S
- 4 15075901 IPB 202, 1;
- 5 15092901 Tank WWSB 202

FS Free space for service purposes

1; union nut DIN ISO 228



# Installation suggestion, right-hand corner Installation plan WWB 21



Legend: 819419-03

Installation suggestion, right-hand corner.

- A Front view
- B Side view from left
- C Plan view

- 1 10062201 WWB 21
- 2 15075701 IPB P
- 3 15075801 IPB S
- 4 15075901 IPB 202, 1;
- 5 15092901 Tank WWSB 202

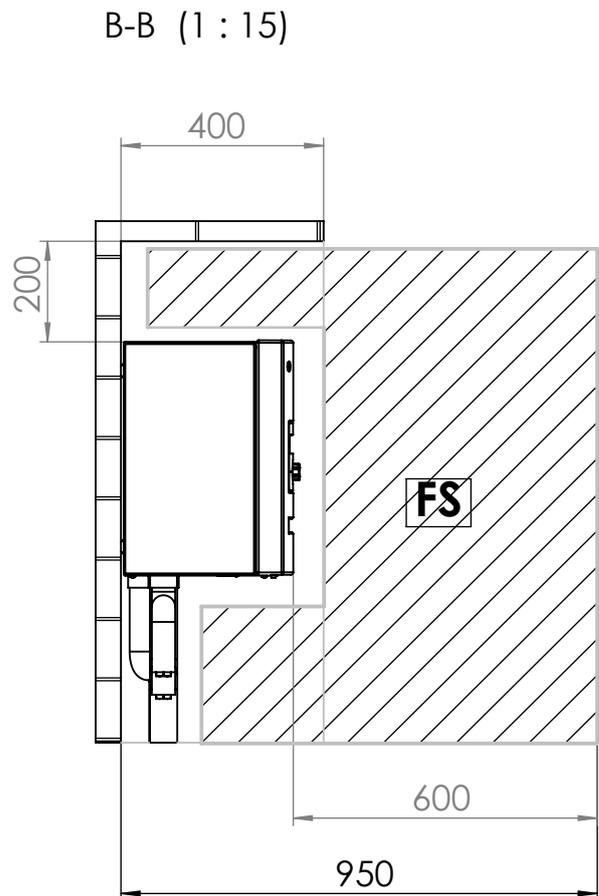
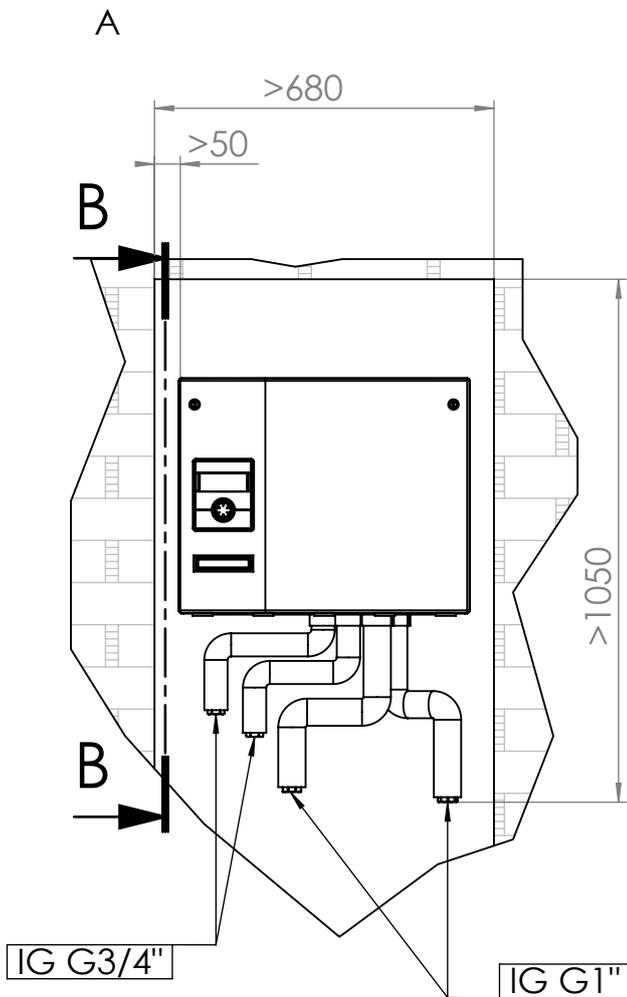
FS Free space for service purposes

1; union nut DIN ISO 228



# Installation plan WWB 21

# Minimum installation space



Legend: 819419-04

Minimum installation space

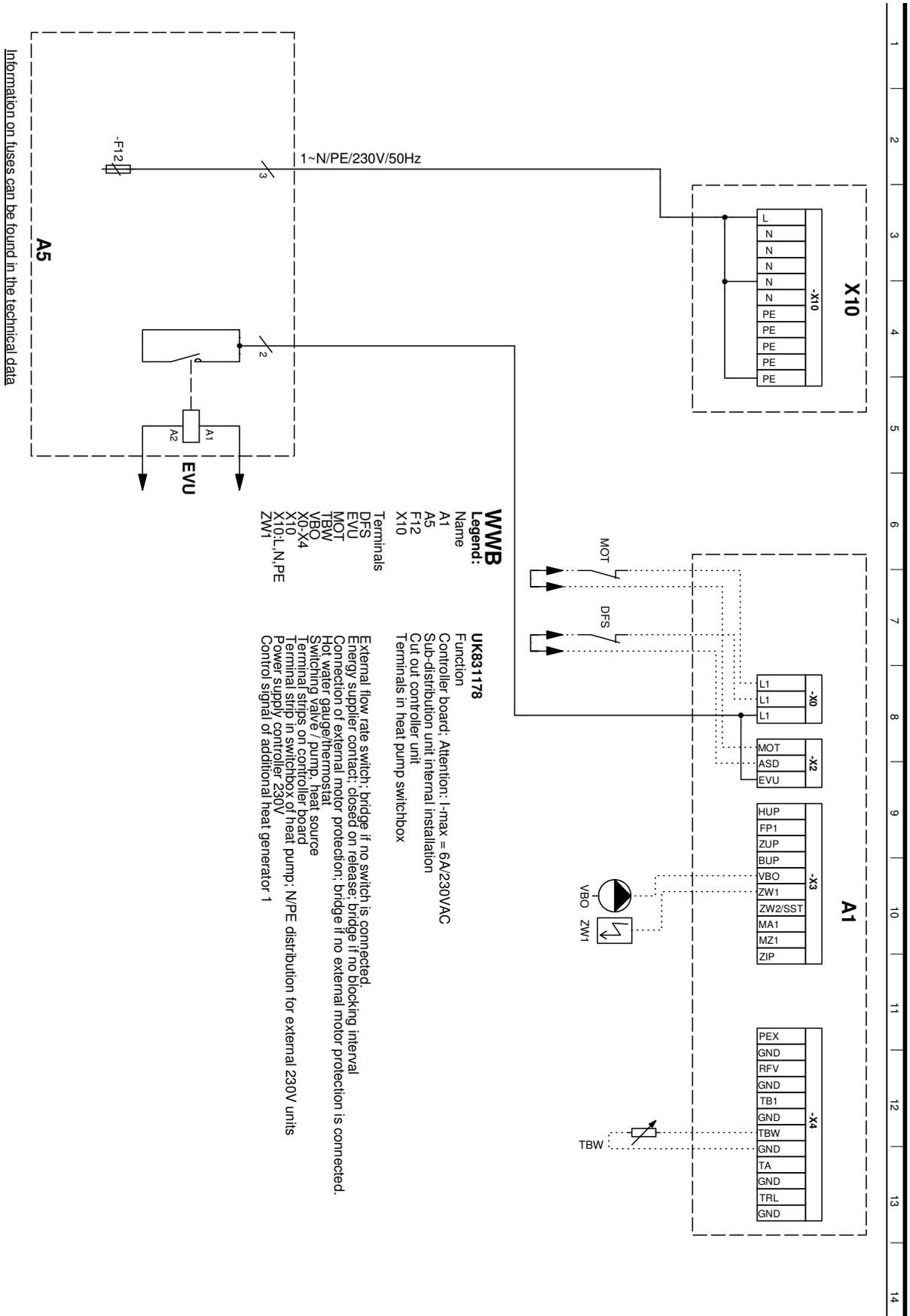
A Front view  
B Side view

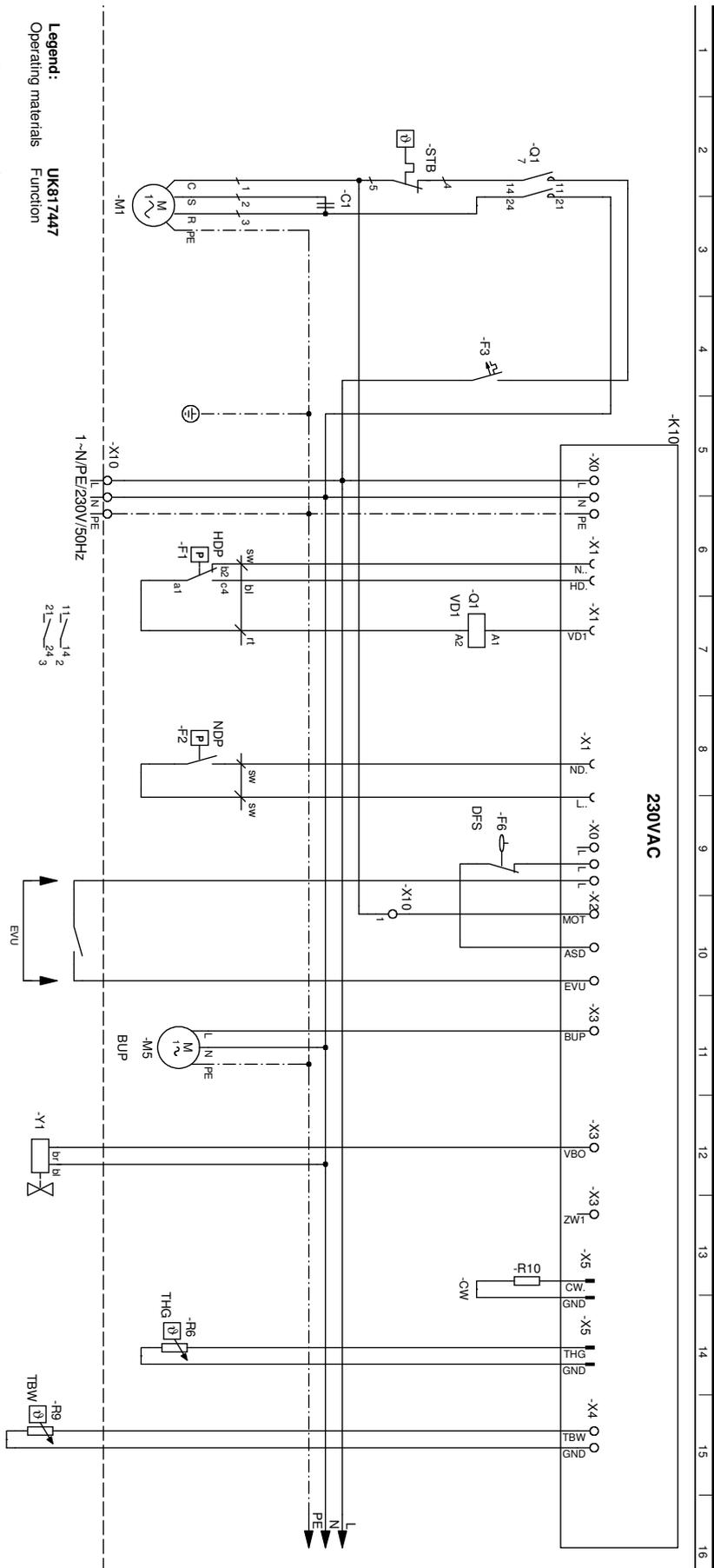
FS Free space for service purposes



# Terminal diagram

# WWB 21





- Legend:**
- |                  |   |                 |          |
|------------------|---|-----------------|----------|
| 1-N/PE/230V/50Hz | Operating materials   | <b>UK817447</b> | Function |
| EVU              | Controller supply   |                 |          |
| F1               | Energy supplier contact; closed on release; bridge if no blocking interval  |                 |          |
| F2               | High-pressure switch  |                 |          |
| F3               | Low-pressure switch   |                 |          |
| F6               | Back-up fuse  |                 |          |
| F7               | Flow rate switch  |                 |          |
| F8               | Controller board; Attention: I-max = 6A/230VAC  |                 |          |
| F9               | Compressor 1  |                 |          |
| F10              | Non-drinking water pump energy efficiency (Brauchwasser: non-drinking water, non-potable water, water for general purposes, domestic water uvw) |                 |          |
| M1               | Compressor 1  |                 |          |
| M5               | Non-drinking water pump   |                 |          |
| M10              | Non-drinking water pump   |                 |          |
| R6               | Hot water sensor  |                 |          |
| R9               | Domestic hot water sensor   |                 |          |
| R10              | Encoding resistor; 118 Ohm  |                 |          |
| STB              | Safety temperature limiter; compressor terminal strip in switchbox of heat pump; N/PE distribution for external 230V units                      |                 |          |
| X10              | Switching valve / pump, heat source   |                 |          |
| Y1               |   |                 |          |
| VBO              |   |                 |          |







## EC Declaration of Conformity



The undersigned confirms that the following designated device(s) as designed and marketed by us fulfill the standardized EC directives, the EC safety standards and the product-specific EC standards. In the event of modification of the device(s) without our approval, this declaration shall become invalid.

Designation of the device(s)

Heat Pump



Unit model	Number	Unit model	Number
SW 42H3	10070041	SW 42H1	10074042
SW 82H3	10070241	SW 62H1	10074142
SW 102H3	10070342	SW 82H1	10074242
SW 122H3	10070442	SW 102H1	10074342
SW 142H3	10070542	SW 132H1	10074442
SW 172H3	10070642		
SW 192H3	10070742	WWB 21	10062901
SW 232H3	10074642		
SW 262H3	10074742		
SW 302H3	10074842		

### EC Directives

2014/35/EU 813/2013  
 2014/30/EU  
 2011/65/EG  
 \*2014/68/EU

### EN..

EN 378 EN 349  
 EN 60529 EN 60335-1/-2-40  
 EN ISO 12100-1/2 EN 55014-1/-2  
 EN ISO 13857 EN 61000-3-2/-3-3  
 EN 14825

### \* Pressure equipment component

Category II  
 Module A1  
 Designated position:  
 TÜV-SÜD  
 Industrie Service GmbH (Nr.:0036)

### Company:

ait-deutschland GmbH  
 Industrie Str. 3  
 93359 Kasendorf  
 Germany

### Place, date:

Kasendorf, 27.05.2019

### Signature:

Jesper Stannow  
 Head of Heating Development

UK818173d



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