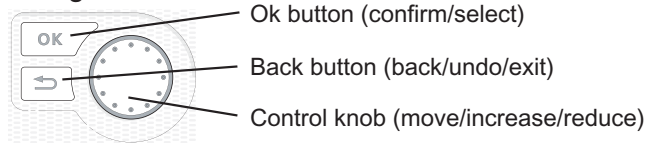


Operating manual
NIBE™ F1345
Ground source heat pump

Quick guide

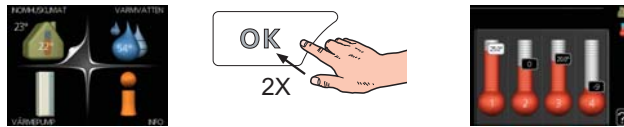
Navigation



A detailed explanation of the button functions can be found on page 6.

How to scroll through menus and make different settings is described on page 8.

Set the indoor climate



The mode for setting the indoor temperature is reached, when in the start mode in the main menu, by pressing the OK button twice. Read more about the settings on page 10.

Increase hot water volume



To temporarily increase the amount of hot water, first turn the control knob to mark menu 2 (water droplet) and then press the OK button twice. Read more about the settings on page 17.

In event of disturbances in comfort

If a disturbance in comfort of any type occurs there are some measures that can be taken before you need to contact your installer. See page 40 for instructions.

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1 Important information

Installation data

Product	F1345
Serial number Master	
Serial number Slave 1	
Serial number Slave 2	
Serial number Slave 3	
Serial number Slave 4	
Serial number Slave 5	
Serial number Slave 6	
Serial number Slave 7	
Serial number Slave 8	
Installation date	
Installer	
Type of brine - Mixing ratio/freezing point	
Active drilling depth/collector length	

No.	Name	Default settings	Set	✓	Accessories
191	heating curve (offset)	0			
191	heating curve (curve slope)	7			

Serial number must always be given

Certification that the installation is carried out according to instructions in NIBE's installer manual and applicable regulations.

Date _____ Signed _____

Safety information

This appliance is designed for use in a home environment and not intended to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. This in accordance to applicable parts of the low-voltage directive 2006/95/EC, LVD. The appliance is also intended for use by experts or trained users in shops, hotels, light industry, on farms and in similar environments. This in accordance to applicable parts of the machinery directive 2006/42/EC.

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

This is an original instruction manual. Translation is not allowed without approval from NIBE.

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Symbols



NOTE

This symbol indicates danger to machine or person.



Caution

This symbol indicates important information about what you should observe when maintaining your installation.



TIP

This symbol indicates tips on how to facilitate using the product.

Marking

F1345 is CE marked and fulfils IP21.

The CE marking means that NIBE ensures that the product meets all regulations that are placed on it based on relevant EU directives. The CE mark is obligatory for most products sold in the EU, regardless where they are made.

IP21 means that the product can be touched by hand, that objects with a diameter larger than or equivalent to 12.5 mm cannot penetrate and cause damage and that the product is protected against vertically falling drops.

Safety precautions

Caution

The installation must be carried out by a qualified installer.

If you install the system yourself, serious problems may occur, for example water leaks, refrigerant leaks, electric shocks, fire and personal injury, as a result of a system malfunction.

Use original accessories and the stated components for the installation.

If parts other than those stated by us are used, water leaks, electric shocks, fire and personal injury may occur as the unit may not work properly.

Install the unit in a location with good support.

Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury. Installation without sufficient support can also cause vibrations and noise.

Ensure that the unit is stable when installed, so that it can withstand earthquakes and strong winds.

Unsuitable installation locations can cause the unit to fall and cause material damage and personal injury.

The electrical installation must be carried out by a qualified electrician and the system must be connected as a separate circuit.

Power supply with insufficient capacity and incorrect function can cause electric shocks and fire.

Use types of pipe and tools stated for this type of refrigerant.

Using existing parts for other refrigerants can cause breakdowns and serious accidents due to process circuit bursts.

Do not perform any repairs yourself. Consult the dealer if the system requires repair.

Incorrectly performed repairs can cause water leakage, refrigerant leakage, electric shocks or fire.

Consult the dealer or an expert regarding removal of the heat pump.

Incorrect installation can cause water leakage, refrigerant leaks, electric shocks or fire.

Switch off the power supply in the event of a service or inspection.

If the power supply is not shut off, there is a risk of electric shocks and damage due to the rotating fan.

Do not run the unit with removed panels or protection.

Touching rotating equipment, hot surfaces or high voltage parts can cause personal injury due to entrapment, burns or electric shocks.

Cut the power before starting electrical work.

Failure to cut the power can cause electric shocks, damage and incorrect function of the equipment.

Care

Do not use the unit for specialist purposes such as for storing food, cooling precision instruments, freeze-conservation of animals, plants or art.

This can damage the items.

Dispose of any packaging material correctly.

Any remaining packaging material can cause personal injury as it may contain nails and wood.

Do not touch any buttons with wet hands.

This can cause electric shocks.

Do not shut off the power supply immediately after operation has started.

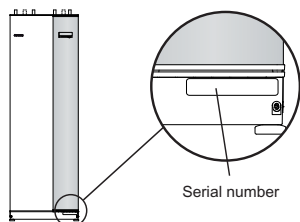
Wait at least 5 minutes, otherwise there is a risk of water leakage or breakdown.

Do not control the system with the main switch.

This can cause fire or water leakage. In addition, the fan can start unexpectedly, which can cause personal injury.

Serial number

The serial number can be found at the bottom right of the front cover and in the info menu (menu 3.1).



Caution

Always give the product's serial number (14 digits) when reporting a fault.

Contact information

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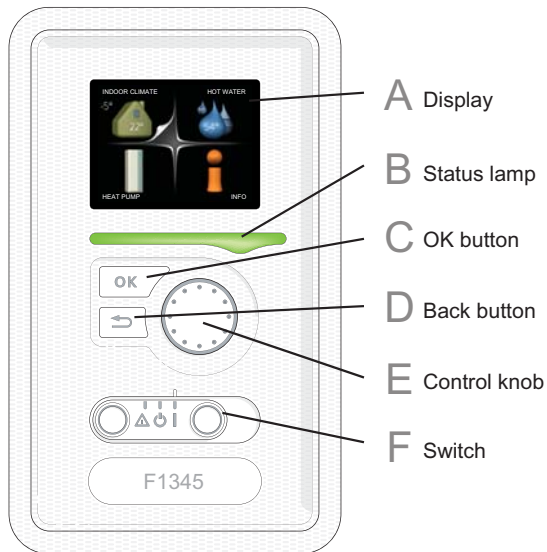
SE NIBE AB Sweden, Box 14, Hannabadsvägen 5, SE-285 21 Markaryd

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For countries not mention in this list, please contact Nibe Sweden or check www.nibe.eu for more information.

2 Control - Introduction

Display unit



F

Switch

The switch assumes three positions:

- On (I)
- Standby (⏻)
- Emergency mode (⚠)

Emergency mode must only be used in the event of a fault on the heat pump. In this mode, the compressor switches off and the immersion heater engages. The heat pump display is not illuminated and the status lamp illuminates yellow.

A Display

Instructions, settings and operational information are shown on the display. The easy-to-read display and menu system, facilitates navigation between the different menus and options to set the comfort or obtain the information you require.

B Status lamp

The status lamp indicates the status of the heat pump. It:

- lights green during normal operation.
- lights yellow in emergency mode.
- lights red in the event of a deployed alarm.

C OK button

The OK button is used to:

- confirm selections of sub menus/options/set values/page in the start guide.

D Back button

The back button is used to:

- go back to the previous menu.
- change a setting that has not been confirmed.

E Control knob

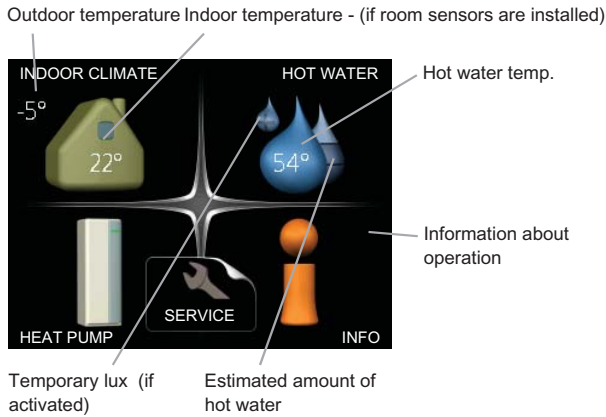
The control knob can be turned to the right or left. You can:

- scroll in menus and between options.
- increase and decrease the values.
- change page in multiple page instructions (for example help text and service info).

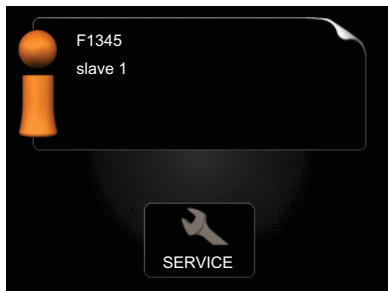
Menu system

When the door to the heat pump is opened, the menu system's four main menus are shown in the display as well as certain basic information.

Master



Slave



If the heat pump is set as slave a limited main menu is displayed because the majority of the settings for the system are made at the master heat pump.

Menu 1 - INDOOR CLIMATE

Setting and scheduling the indoor climate. See page 10.

Menu 2 - HOT WATER

Setting and scheduling hot water production. See page 17.

Menu 3 - INFO

Display of temperature and other operating information and access to the alarm log. See page 19.

This menu is also set in the slave heat pump's limited menu system.

Menu 4 - HEAT PUMP

Setting time, date, language, display, operating mode etc. See page 21.

Menu 5 - SERVICE

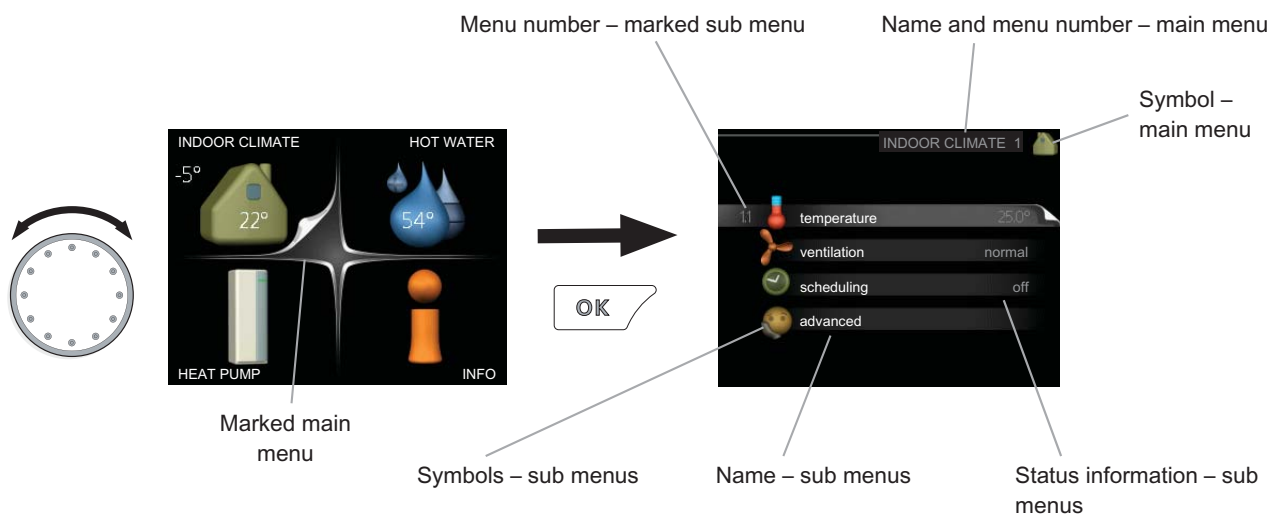
Advanced settings. These settings are not available to the end user. The menu is visible by pressing the Back button for 7 seconds. See page 25.

This menu is also set in the slave heat pump's limited menu system.

Symbols in the display

The following symbols can appear in the display during operation.

Symbol	Description
	This symbol appears by the information sign if there is information in menu 3.1 that you should note.
	These two symbols indicate whether the compressor or addition is blocked in F1345. These can, for example, be blocked depending on which operating mode is selected in menu 4.2, if blocking is scheduled in menu 4.9.5 or if an alarm has occurred that blocks one of them. Blocking the compressor. Blocking additional heat.
	This symbol appears if lux mode for the hot water is activated.
	This symbol indicates the actual speed of the fan if the speed has changed from the normal setting. Accessory NIBE FLM required.
	This symbol indicates whether solar heating is active. Accessory needed.
	This symbol indicates whether "holiday setting" is activated in menu 4.7.



Operation

To move the cursor, turn the control knob to the left or the right. The marked position is brighter and/or has a turned up tab.



Selecting menu

To advance in the menu system select a main menu by marking it and then pressing the OK button. A new window then opens with sub menus.

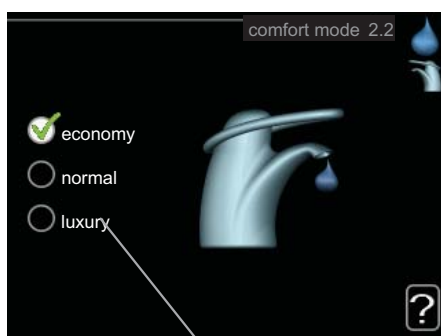
Select one of the sub menus by marking it and then pressing the OK button.

Setting a value




Values to be changed



Selecting options







Alternative

In an options menu the current selected option is indicated by a green tick. 

To select another option:

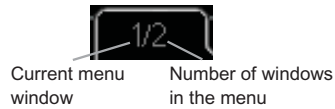
1. Mark the applicable option. One of the options is pre-selected (white). 
2. Press the OK button to confirm the selected option. The selected option has a green tick. 

To set a value:

1. Mark the value you want to set using the control knob. 
2. Press the OK button. The background of the value becomes green, which means that you have accessed the setting mode. 
3. Turn the control knob to the right to increase the value and to the left to reduce the value. 
4. Press the OK button to confirm the value you have set. To change and return to the original value, press the Back button. 

Scroll through the windows

A menu can consist of several windows. Turn the control knob to scroll between the windows.



Scroll through the windows in the start guide



Arrows to scroll through window in start guide

1. Turn the control knob until one of the arrows in the top left corner (at the page number) has been marked.
2. Press the OK button to skip between the steps in the start guide.

Help menu



In many menus there is a symbol that indicates that extra help is available.

To access the help text:

1. Use the control knob to select the help symbol.
2. Press the OK button.

The help text often consists of several windows that you can scroll between using the control knob.

3 Control - Menus

Menu 1 - INDOOR CLIMATE

Overview

1 - INDOOR CLIMATE	1.1 - temperature	
	1.2 - ventilation *	
	1.3 - scheduling	1.3.1 - heating
		1.3.2 - cooling *
		1.3.3 - ventilation *
	1.9 - advanced	1.9.1 - heating curve
		1.9.2 - external adjustment
		1.9.3 - min. flow line temp.
		1.9.4 - room sensor settings
		1.9.5 - cooling settings *
		1.9.6 - fan return time *
		1.9.7 - own curve
		1.9.8 - point offset

* Accessories are needed.

Sub-menus

For the menu **INDOOR CLIMATE** there are several sub-menus. Status information for the relevant menu can be found on the display to the right of the menus.

temperature Setting the temperature for the climate system. The status information shows the set values for the climate system. Tab for cooling system is only displayed if accessory for cooling are present or if the heat pump has the integrated cooling function.

ventilation Setting the fan speed. The status information shows the selected setting. This menu is only displayed if the exhaust air module is connected (accessory).

scheduling Scheduling heating, cooling and ventilation. Status information "set" is displayed if you set a schedule but it is not active now, "holiday setting" is displayed if the vacation schedule is active at the same time as the schedule (the vacation function is prioritised), "active" displays if any part of the schedule is active, otherwise it displays " off".

advanced Setting of heat curve, adjusting with external contact, minimum value for supply temperature, room sensor and cooling function.

Menu 1.1 - temperature

If the house has several climate systems, this is indicated on the display by a thermometer for each system.

If the heat pump has an accessory for cooling or integrated cooling function this is shown in the display with an extra tab.

Set the temperature (with room sensors installed and activated):

Setting range: 5 - 30 °C

Default value: 20

The value in the display appears as a temperature in °C if the heating system is controlled by a room sensor.

To change the room temperature, use the control knob to set the desired temperature in the display. Confirm the new setting by pressing the OK button. The new temperature is shown on the right-hand side of the symbol in the display.

Setting the temperature (without room sensors activated):

Setting range: -10 to +10

Default value: 0

The display shows the set values for heating (curve offset). To increase or reduce the indoor temperature, increase or reduce the value on the display.

Use the control knob to set a new value. Confirm the new setting by pressing the OK button.

The number of steps the value has to be changed to achieve a degree change of the indoor temperature depends on the heating unit. One step for under floor heating whilst radiators may require three.

Setting the desired value. The new value is shown on the right-hand side of the symbol in the display.



Caution

An increase in the room temperature can be slowed by the thermostats for the radiators or under floor heating. Therefore, open the thermostat valves fully, except in those rooms where a cooler temperature is required, e.g. bedrooms.



TIP

Wait 24 hours before making a new setting, so that the room temperature has time to stabilise.

If it is cold outdoors and the room temperature is too low, increase the curve slope in menu 1.9.1 by one increment.

If it is cold outdoors and the room temperature is too high, lower the curve slope menu 1.9.1 by one increment.

If it is warm outdoors and the room temperature is too low, increase the value in menu 1.1 by one increment.

If it is warm outdoors and the room temperature is too high, reduce the value in menu 1.1 by one increment.

Menu 1.2 - ventilation (accessory required)

Setting range: normal and speed 1-4

Default value: normal

The ventilation in the accommodation can be temporarily increased or reduced here.

When you have selected a new speed a clock starts a count down. When the time has counted down the ventilation speed returns to the normal setting.

If necessary, the different return times can be changed in menu 1.9.6.

The fan speed is shown in brackets (in percent) after each speed alternative.



TIP

If longer time changes are required use the holiday function or scheduling.

Menu 1.3 - scheduling

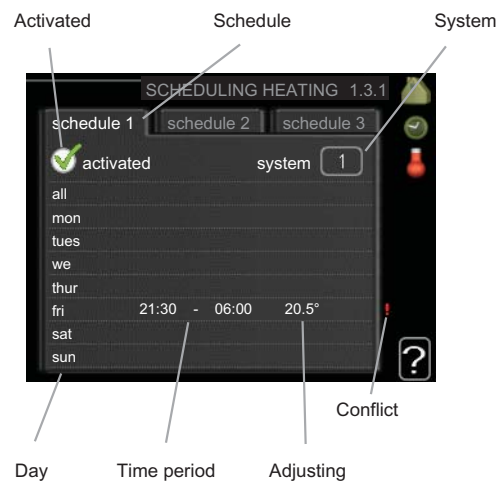
In the menu **scheduling** indoor climate (heating/cooling/ventilation) is scheduled for each weekday.

You can also schedule a longer period during a selected period (vacation) in menu 4.7.

Menu 1.3.1 - heating

Increases or decreases in the accommodation temperature can be scheduled here for up to three time periods per day. If a room sensor is installed and activated the desired room temperature (°C) is set during the time period. Without an activated room sensor the desired change is set (of setting in menu 1.1). A one degree change in room temperature requires one increment for underfloor heating and approximately two to three increments for the radiator system.

If two settings conflict with each other a red exclamation mark is displayed at the end of the line.



Schedule: The schedule to be changed is selected here.

Activated: Scheduling for the selected period is activated here. Set times are not affected at deactivation.

System: Which climate system the schedule is for is selected here. This alternative is only displayed if more than one climate system is present.

Day: Select which day or days of the week the schedule is to apply to here. To remove the scheduling for a particular day, the time for that day must be reset by setting the start time to the same as the stop time. If the line "all" is used, all days in the period are set for these times.

Time period: The start and stop time for the selected day for scheduling are selected here.

Adjusting: How much the heating curve is to be offset in relation to menu 1.1 during scheduling is set here. If the rooms sensor is installed the desired room temperature is set in °C.



TIP

If you wish to set similar scheduling for every day of the week start by filling in "all" and then changing the desired days.

**Caution**

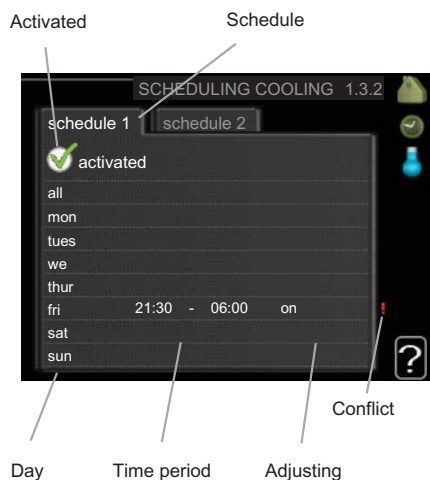
If the stop time is before the start time it means that the period extends past midnight. Scheduling always starts on the date that the start time is set for.

Changes of temperature in accommodation take time. For example, short time periods in combination with underfloor heating will not give a noticeable difference in room temperature.

Menu 1.3.2 - cooling (accessory required)

Here you can schedule when cooling is permitted in the accommodation for up to two different time periods per day.

If two settings conflict with each other a red exclamation mark is displayed at the end of the line.



Schedule: The schedule to be changed is selected here.

Activated: Scheduling for the selected period is activated here. Set times are not affected at deactivation.

Day: Select which day or days of the week the schedule is to apply to here. To remove the scheduling for a particular day, the time for that day must be reset by setting the start time to the same as the stop time. If the line "all" is used, all days in the period are set for these times.

Time period: The start and stop time for the selected day for scheduling are selected here.

Adjusting: Whether or not cooling is permitted during scheduling is set here.

**TIP**

If you wish to set similar scheduling for every day of the week start by filling in "all" and then changing the desired days.

**Caution**

If the stop time is before the start time it means that the period extends past midnight.

Scheduling always starts on the date that the start time is set for.

Menu 1.3.3 - ventilation (accessory required)

Increases or decreases in the ventilation to the accommodation can be scheduled here for up to two time periods per day.

If two settings conflict with each other a red exclamation mark is displayed at the end of the line.



Schedule: The schedule to be changed is selected here.

Activated: Scheduling for the selected period is activated here. Set times are not affected at deactivation.

Day: Select which day or days of the week the schedule is to apply to here. To remove the scheduling for a particular day, the time for that day must be reset by setting the start time to the same as the stop time. If the line "all" is used, all days in the period are set for these times.

Time period: The start and stop time for the selected day for scheduling are selected here.

Adjusting: The desired fan speed is set here.

**TIP**

If you wish to set similar scheduling for every day of the week start by filling in "all" and then changing the desired days.



Caution

If the stop time is before the start time it means that the period extends past midnight. Scheduling always starts on the date that the start time is set for.

A significant change over a longer period of time may cause poor indoor environment and worse operating economy.

Menu 1.9 - advanced

Menu **advanced** has orange text and is intended for the advanced user. This menu has several sub-menus.

heating curve Setting the heating curve slope.

external adjustment Setting the heat curve offset when the external contact is connected.

min. flow line temp. Setting minimum permitted flow line temperature.

room sensor settings Settings regarding the room sensor.

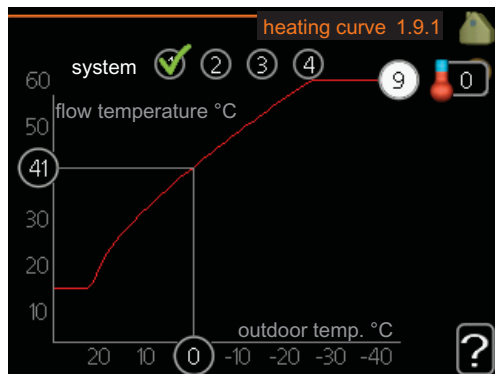
cooling settings Settings for cooling.

fan return time Fan return time settings in the event of temporary ventilation speed change.

own curve Setting own heat curve.

point offset Setting the offset of the heating curve at a specific outdoor temperature.

Menu 1.9.1 - heating curve



heating curve

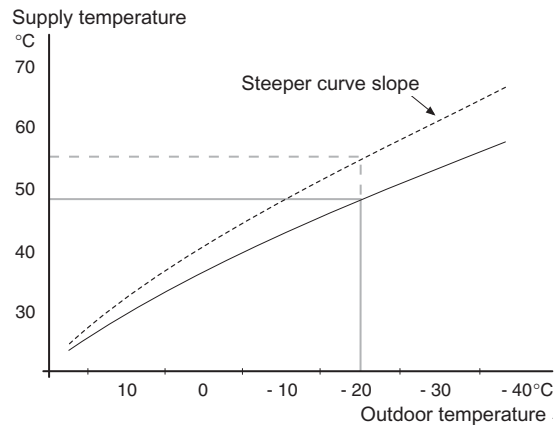
Setting range: 0 - 15

Default value: 9

In the menu **heating curve** the so-called heating curve for your house can be viewed. The task of the heating curve is to give an even indoor temperature, regardless of the outdoor temperature, and thereby energy efficient operation. It is from this heating curve that the heat pump's control computer determines the temperature of the water to the heating system, flow line temperature, and therefore the indoor temperature. You can select

heating curve and read off how the flow line temperature changes at different outdoor temperatures here.

Curve coefficient



The slope of the heating curve indicates how many degrees the supply temperature is to be increased/reduced when the outdoor temperature drops/increases. A steeper slope means a higher supply temperature at a certain outdoor temperature.

The optimum slope depends on the climate conditions in your location, if the house has radiators or under floor heating and how well insulated the house is.

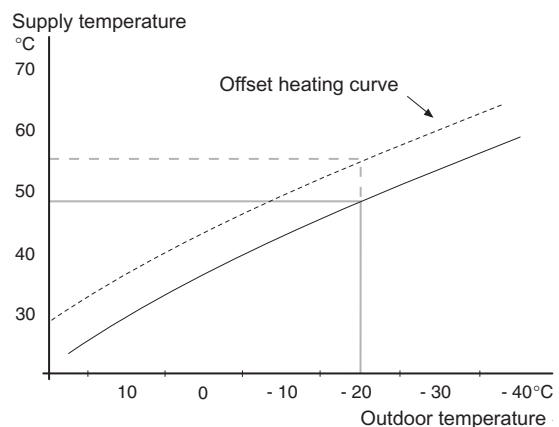
The heating curve is set when the heating installation is installed, but may need adjusting later. Thereafter the heating curve should not need further adjustment.



Caution

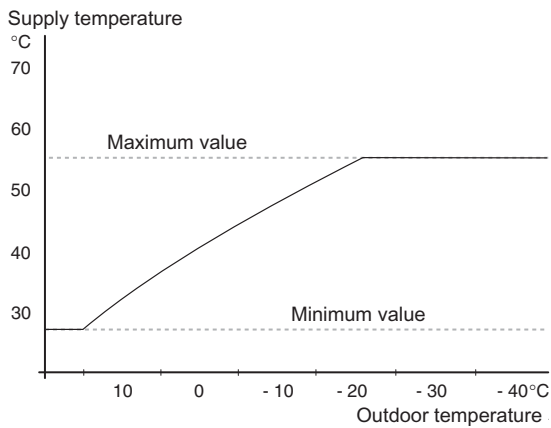
In the event of making fine adjustments for the indoor temperature, the heat curve must be offset up or down instead, this is done in menu 1.1 **temperature**.

Curve offset




An offset of the heating curve means that the supply temperature changes as much for all the outdoor temperatures, e.g. that a curve offset of +2 steps increases the supply temperature by 5 °C at all outdoor temperatures.

Flow line temperature– maximum and minimum values




Because the flow line temperature cannot be calculated higher than the set maximum value or lower than the set minimum value the heating curve flattens out at these temperatures.

 **Caution**
Underfloor heating systems are normally **max flow line temperature** set between 35 and 45 °C.
Check the max temperature for your floor with your installer/floor supplier.

The figure at the end of the curve indicates the curve slope. The figure beside the thermometer gives the curve offset. Use the control knob to set a new value. Confirm the new setting by pressing the OK button.

Curve 0 is an own heating curve created in menu 1.9.7.


To select another heat curve (slope):

 **NOTE**
If you only have one heating system, the number of the curve is already marked when the menu window opens.

1. Select the system (if more than one) for which the heat curve is to be changed.
2. When the system selection has been confirmed the heat curve number is marked.
3. Press the OK button to access the setting mode
4. Select a new heating curve. The heat curves are numbered from 0 to 15, the greater the number, the steeper the slope and the greater the supply temperature. Heating curve 0 means that **own curve** (menu 1.9.7) is used.
5. Press the OK button to exit the setting.

To read off a heating curve:

1. Turn the control knob so that the ring on the shaft with the outdoor temperature is marked.
2. Press the OK button.
3. Follow the grey line up to the heat curve and out to the left to read off the value for the supply temperature at the selected outdoor temperature.
4. You can now select to take read outs for different outdoor temperatures by turning the control knob to the right or left and read off the corresponding flow temperature.
5. Press the OK or Back button to exit read off mode.

 **TIP**
Wait 24 hours before making a new setting, so that the room temperature has time to stabilise.
If it is cold outdoors and the room temperature is too low, increase the curve slope by one increment.
If it is cold outdoors and the room temperature is too high, lower the curve slope by one increment.
If it is warm outdoors and the room temperature is too low, increase the curve offset by one increment.
If it is warm outdoors and the room temperature is too high, lower the curve offset by one increment.

Menu 1.9.2 - external adjustment

climate system

Setting range: -10 to +10 or desired room temperature if the room sensor is installed.

Default value: 0

Connecting an external contact, for example, a room thermostat or a timer allows you to temporarily or periodically raise or lower the room temperature. When the contact is on, the heat curve offset is changed by the number of steps selected in the menu. If a room sensor is installed and activated the desired room temperature (°C) is set.

If there is more than one climate system the setting can be made separately for each system.

Menu 1.9.3 - min. flow line temp.

climate system

Setting range: 5-70 °C

Default value: 20°C

Set the minimum temperature on the supply temperature to the climate system. This means that F1345 never calculates a temperature lower than that set here.

If there is more than one climate system the setting can be made separately for each system.



TIP

The value can be increased if you have, for example, a cellar that you always want to heat, even in summer.

You may also need to increase the value in "stop heating" menu 4.9.2 "auto mode setting".

Menu 1.9.4 - room sensor settings

factor system

Setting range: 0.0 - 6.0

Default value: 2.0

Room sensors to control the room temperature can be activated here.

Here you can set a factor that determines how much the supply temperature is to be affected by the difference between the desired room temperature and the actual room temperature. A higher value gives a greater change of the heating curve's set offset.

If several climate systems are installed the above settings can be made for the relevant systems.

Menu 1.9.5 - cooling settings (accessory required)

min. temp. cooling flow

Setting range: 5 - 50 °C

Default value: 18

cooling flow temp. at +20 °C

Setting range: 5 - 50 °C

Default value: 25

coolant flow line at +40°C

Setting range: 5 - 50 °C

Default value: 18

time betw. switch heat/cool

Setting range: 0 - 48 h

Default value: 2

heat at room under temp.

Setting range: 0.5 - 10.0 °C

Default value: 1.0

cool at room over temp.

Setting range: 0.5 - 10.0 °C

Default value: 1.0

mixing valve amplifier

Setting range: 0.1 - 10.0

Default value: 1.0

mixing valve step delay

Setting range: 10 - 300 s

Default values: 30 s

You can use F1345 to cool the house during hot periods of the year.

min. temp. cooling flow

Set the minimum temperature on the supply temperature to the climate system during cooling operation. This means that F1345 never calculates a temperature lower than that set here.

cooling flow temp. at +20 °C

Set the desired temperature on the flow temperature to the climate system during cooling operation when the outdoor temperature is +20 °C. F1345 then attempts to get as close to the set temperature as possible.

coolant flow line at +40°C

Set the desired temperature on the flow temperature to the climate system during cooling operation when the outdoor temperature is +40 °C. F1345 then attempts to get as close to the set temperature as possible.

time betw. switch heat/cool

Here you can set how long F1345 is to wait before it returns to heating mode when the cooling demand has ceased or vice versa.

close mix. valves in cool mode

If the heat pump is connected to more than one climate system condensation may occur in these if they are not intended for cooling.

To avoid this check "close mix. valves in cool mode", which means that the sub-shunts for the extra climate systems close when cooling operation is activated.

heat at room under temp.



Caution

This setting option only appears if a room temperature sensor is connected to F1345 and has been activated.

Here you can set how far the room temperature can drop below the desired temperature before F1345 switches to heating operation.

cool at room over temp.



Caution

This setting option only appears if a room temperature sensor is connected to F1345 and has been activated.

Here you can set how high the room temperature can increase above the desired temperature before F1345 switches to cooling operation.

mixing valve amplifier and mixing valve step delay

Shunt reinforcement and shunt wait time for the cooling system are set here.

Menu 1.9.6 - fan return time (accessory required)

speed 1-4

Setting range: 1 – 99 h

Default value: 4 h

Here you select the return time for temporary speed change (speed 1-4) on the ventilation in menu 1.2.

Return time is the time it takes before ventilation speed returns to normal.

Menu 1.9.7 - own curve

supply temperature

Setting range: 0 – 80 °C

You can create your own heating curve here, if there are special requirements, by setting the desired supply temperatures for different outdoor temperatures.



Caution

Curve 0 in menu 1.9.1 must be selected for this curve to apply.

Menu 1.9.8 - point offset

outdoor temp. point

Setting range: -40 – 30 °C

Default value: 0 °C

change in curve

Setting range: -10 – 10 °C

Default value: 0 °C

Select a change in the heating curve at a certain outdoor temperature here. A one degree change in room temperature requires one increment for underfloor heating and approximately two to three increments for the radiator system.

The heat curve is affected at ± 5 °C from set outdoor temp. point.

It is important that the correct heating curve is selected so that the room temperature is experienced as even.



TIP

If it is cold in the house, at, for example -2 °C, "outdoor temp. point" is set to "-2" and "change in curve" is increased until the desired room temperature is maintained.



Caution

Wait 24 hours before making a new setting, so that the room temperature has time to stabilise.

Menu 2 - HOT WATER

Overview

2 - HOT WATER	2.1 - temporary lux	
	2.2 - comfort mode	
	2.3 - scheduling	
	2.9 - advanced	2.9.1 - periodic increases

* Accessory needed.

Sub-menus

For the menu **HOT WATER** there are several sub-menus. Status information for the relevant menu can be found on the display to the right of the menus.

temporary lux Activation of temporary increase in the hot water temperature. Status information displays "off" or what length of time of the temporary temperature increase remains.

comfort mode Setting hot water comfort. The status information displays what mode is selected, "economy", "normal" or "luxury".

scheduling Scheduling hot water comfort. Status information "set" displays if any part of the schedule is active at present, "holiday setting" displays if vacation setting is in progress (menu 4.7), otherwise it displays "off".

advanced Setting periodic increase in the hot water temperature.

Menu 2.1 - temporary lux

Setting range: 3, 6 and 12 hours and mode "off"
 Default value: "off"

When hot water requirement has temporarily increased this menu can be used to select an increase in the hot water temperature to lux mode for a selectable time.



Caution

If comfort mode "luxury" is selected in menu 2.2 no further increase can be carried out.

The function is activated immediately when a time period is selected and confirmed using the OK button. The time to the right displays the remaining time at the selected setting.

When the time has run out F1345 returns to the mode set in menu 2.2.

Select "off" to switch off **temporary lux**.

Menu 2.2 - comfort mode

Setting range: economy, normal, luxury
 Default value: normal

The difference between the selectable modes is the temperature of the hot tap water. Higher temperature means that the hot water lasts longer.

economy: This mode gives less hot water than the other, but is more economical. This mode can be used in smaller households with a small hot water requirement.

normal: Normal mode gives a larger amount of hot water and is suitable for most households.

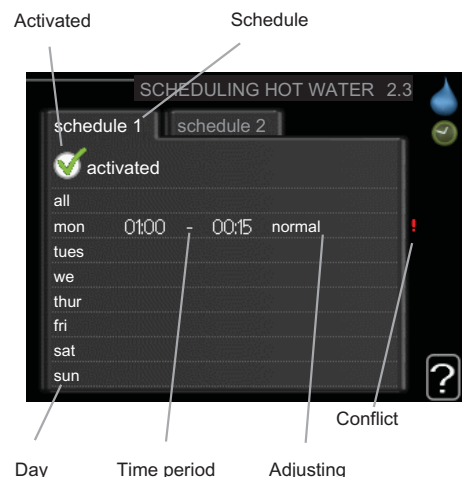
luxury: Lux mode gives the greatest possible amount of hot water. In this mode the immersion heater may be partially used to heat hot water, which may increase operating costs.

Menu 2.3 - scheduling

What hot water comfort the heat pump is to work with can be scheduled here for up to two different time periods per day.

Scheduling is activated/deactivated by ticking/unticking "activated". Set times are not affected at deactivation.

If two settings conflict with each other a red exclamation mark is displayed.




Schedule: The schedule to be changed is selected here.


Activated: Scheduling for the selected period is activated here. Set times are not affected at deactivation.

Day: Select which day or days of the week the schedule is to apply to here. To remove the scheduling for a particular day, the time for that day must be reset by setting the start time to the same as the stop time. If the line "all" is used, all days in the period are set for these times.

Time period: The start and stop time for the selected day for scheduling are selected here.

Adjusting: Set the hot water comfort that is to apply during scheduling here.

 **TIP**
If you wish to set similar scheduling for every day of the week start by filling in "all" and then changing the desired days.

 **Caution**
If the stop time is before the start time it means that the period extends past midnight.
Scheduling always starts on the date that the start time is set for.

Menu 2.9 - advanced

Menu **advanced** has orange text and is intended for the advanced user. This menu has several sub-menus.

Menu 2.9.1 - periodic increases

period

Setting range: 1 - 90 days

Default value: off

start time

Setting range: 00:00 - 23:00

Default value: 00:00

To prevent bacterial growth in the water heater, the compressor and the immersion heater can increase hot water temperature at regular intervals.

The length of time between increases can be selected here. The time can be set between 1 and 90 days. Factory setting is 14 days. Untick "activated" to switch off the function.

Menu 3 - INFO

Overview

3 - INFO	3.1 - service info *
	3.2 - compressor info *
	3.3 - add. heat info
	3.4 - alarm log *
	3.5 - indoor temp. log

* This menu is also set in the slave heat pump's limited menu system.

Sub-menus

For the menu **INFO** there are several sub-menus. No settings can be made in these menus, it is just display of information. Status information for the relevant menu can be found on the display to the right of the menus.

service info shows temperature levels and settings in the heat pump.

compressor info shows operating times, number of starts etc for the compressor.

add. heat info displays information about the addition's operating times etc.

alarm log displays the latest alarm and information about the heat pump when the alarm occurred.

indoor temp. log the average temperature indoors week by week during the past year.

Menu 3.1 - service info

Information about the heat pump's actual operating status (e.g. current temperatures etc.) can be obtained here. If several heat pumps are connected as master/slave, information about them is also shown in this menu. No changes can be made.

The information is on several pages. Turn the control knob to scroll between the pages.

This menu is also set in the slave heat pump's limited menu system.

Symbols in this menu:



Compressors
EP14/EP15 (cooling module) displays which compressor is operating.



Heating
A digit displays how many compressors (if more than one) are currently working with heating operation.



Internally connected external heat and external additional heat connected via accessory.



Brine pumps (blue)
EP14/EP15 (cooling module) displays which circulation pump is operating if more than one brine pump is connected to the heat pump.



Heating medium pumps (orange)
EP14/EP15 (cooling module) displays which circulation pump is operating.



Cooling
A digit displays how many compressors (if more than one) are currently working with cooling operation.



Ventilation



Hot water
A digit displays how many compressors (if more than one) are currently working with hot water charging.



Heating medium pumps (orange)
EP14/EP15 (cooling module) displays which circulation pump is operating.



Pool
A digit displays how many compressors (if more than one) are currently working with pool heating operation.

Menu 3.2 - compressor info

Information about the compressors' operating status and statistics in the installation can be obtained here. No changes can be made.

If several heat pumps are connected as master/slave, information about the other heat pumps' compressors is also shown in a tab system.

This menu is also set in the slave heat pump's limited menu system.

Menu 3.3 - add. heat info

Information about the additional heat settings, operating status and statistics can be obtained here. No changes can be made.

The information is on several pages. Turn the control knob to scroll between the pages.

Menu 3.4 - alarm log

To facilitate fault-finding the heat pump operating status at alarm alerts is stored here. You can see information for the 10 most recent alarms.

This menu is also set in the slave heat pump's limited menu system.

To view the run status in the event of an alarm, mark the alarm and press the OK button.

Menu 3.5 - indoor temp. log

Here you can see the average temperature indoors week by week during the past year. The dotted line indicates the annual average temperature.

The average outdoor temperature is only shown if a room temperature sensor/room unit is installed.

Otherwise, if an exhaust air module (NIBE FLM) is installed, the exhaust air temperature is shown.

To read off an average temperature

1. Turn the control knob so that the ring on the shaft with the week number is marked.
2. Press the OK button.
3. Follow the grey line up to the graph and out to the left to read off the average indoor temperature at the selected week.
4. You can now select to take read outs for different weeks by turning the control knob to the right or left and read off the average temperature.
5. Press the OK or Back button to exit read off mode.

Menu 4 - HEAT PUMP

Overview

4 - HEAT PUMP	4.1 - plus functions *	4.1.1 - pool 1 *
		4.1.2 - pool 2 *
		4.1.4 - sms *
	4.2 - op. mode	
	4.3 - my icons	
	4.4 - time & date	
	4.6 - language	
	4.7 - holiday setting	
	4.9 - advanced	4.9.1 - op. prioritisation
		4.9.2 - auto mode setting
		4.9.3 - degree minute setting
		4.9.4 - factory setting user
		4.9.5 - schedule blocking

* Accessory needed.

Sub-menus

For the menu **HEAT PUMP** there are several sub-menus. Status information for the relevant menu can be found on the display to the right of the menus.

plus functions Settings applying to any installed extra functions in the heating system.

op. mode Activation of manual or automatic operating mode. The status information shows the selected operating mode.

my icons Settings regarding which icons in the heat pump's user interface that are to appear in the slot when the door is closed.

time & date Setting current time and date.

language Select the language for the display here. The status information shows the selected language.

holiday setting Vacation scheduling heating, cooling and ventilation. Status information "set" is displayed if you set a vacation schedule but it is not active now, "active" displays if any part of the vacation schedule is active, otherwise it displays " off".

advanced Setting heat pump work mode.

Menu 4.1 - plus functions

Settings for any additional functions installed in the heating system can be made in the sub menus.

Menu 4.1.1 - 4.1.2 - pool 1 - pool 2 (accessory is required)

start temp

Setting range: 5.0 - 80.0 °C

Default value: 22.0 °C

stop temperature

Setting range: 5.0 - 80.0 °C

Default value: 24.0 °C

maximum number of compr.

Setting range: 1 - 18

Default value: 2

Select whether the pool control is to be activated, within what temperatures (start and stop temperature) pool heating must occur and how many compressors may work against the pool at the same time.

When the pool temperature drops below the set start temperature and there is no hot water or heating requirement, F1345 starts pool heating.

Untick "activated" to switch off the pool heating.



Caution


The start temperature cannot be set to a value that is higher than the stop temperature.

Menu 4.1.4 - sms

Make settings for the accessory SMS 40 here.

Add the mobile numbers that are to have access to change and receive status information from the heat pump. Mobile numbers must include country code e.g. +46 XXXXXXXX.

If you want to receive an SMS message in the event of the alarm mark the box to the right of the telephone number.

**NOTE**

Telephone numbers provided must be able to receive SMS messages.

Menu 4.2 - op. mode

op. mode

Setting range: auto, manual, add. heat only

Default value: auto

functions

Setting range: compressor, addition, heating, cooling

The heat pump operating mode is usually set to "auto". It is also possible to set the heat pump to "add. heat only", but only when an addition is used, or "manual" and select yourself what functions are to be permitted.

Change the operating mode by marking the desired mode and pressing the OK button. When an operating mode is selected it shows what in the heat pump is permitted (crossed out = not permitted) and selectable alternatives to the right. To select selectable functions that are permitted or not you mark the function using the control knob and press the OK button.


Operating mode auto

In this operating mode you cannot select which functions are to be permitted because it is handled automatically by the heat pump.

Operating mode manual

In this operating mode you can select what functions are permitted. You cannot deselect "compressor" in manual mode.

Operating mode add. heat only

**Caution**

If you choose mode "add. heat only" the compressor is deselected and there is a higher operating cost.

In this operating mode the compressor is not active and only additional heating is used.


Functions

"**compressor**" is that which produces heating and hot water for the accommodation. If "compressor" is deselected, a symbol in the main menu on the heat pump symbol is displayed. You cannot deselect "compressor" in manual mode.

"**addition**" is what helps the compressor to heat the accommodation and/or the hot water when it cannot manage the whole requirement alone.

"**heating**" means that you get heat in the accommodation. You can deselect the function when you do not wish to have heating running.

"**cooling**" means that you get cooling in the accommodation in hot weather. You can deselect the function when you do not wish to have the cooling running. This alternative requires an accessory for cooling or if the heat pump has a built in function for cooling.

**Caution**

If you deselect "addition" it may mean that sufficient heating in the accommodation is not achieved.

Menu 4.3 - my icons

You can select what icon should be visible when the door to F1345 is closed. You can select up to 3 icons. If you select more, the ones you selected first will disappear. The icons are displayed in the order you selected them.

Menu 4.4 - time & date

Set time and date and display mode here.

Menu 4.6 - language

Choose the language that you want the information to be displayed in here.

Menu 4.7 - holiday setting

To reduce energy consumption during a holiday you can schedule a reduction in heating and hot water temperature. Cooling, ventilation and pool can also be scheduled if the functions are connected.

If a room sensor is installed and activated the desired room temperature (°C) is set during the time period. This setting applies to all climate systems with room sensors.

If a room sensor is not activated, the desired offset of the heat curve is set. This setting applies to all climate systems without room sensors. A one degree change in room temperature requires one increment for under floor heating and approximately two to three increments for the radiator system.

Vacation scheduling starts at 00:00 on the start date and stops at 23:59 on the stop date.

**TIP**

Complete holiday setting about a day before your return so that room temperature and hot water have time to regain usual levels.

**TIP**

Set the vacation setting in advance and activate just before departure in order to maintain the comfort.

**Caution**

If you choose to switch off hot water production during the vacation "periodic increases" (preventing bacterial growth) are blocked during this time. "periodic increases" started in conjunction with the vacation setting being completed.

Menu 4.9 - advanced

Menu **advanced** has orange text and is intended for the advanced user. This menu has several sub-menus.

Menu 4.9.1 - op. prioritisation**op. prioritisation**

Setting range: 0 to 180 min

Default value: 20 min

Choose here how long the heat pump should work with each requirement if there are two or more requirements at the same time. If there is only one requirement the heat pump only works with that requirement.

The indicator marks where in the cycle the heat pump is. If 0 minutes is selected it means that requirement is not prioritised, but will only be activated when there is no other requirement.

Menu 4.9.2 - auto mode setting**start cooling**

Setting range: -20 – 40 °C

Default value: 25

stop heating

Setting range: -20 – 40 °C

Default values: 20

stop additional heat

Setting range: -20 – 40 °C

Default values: 15

filtering time

Setting range: 0 – 48 h

Default value: 24 h

When operating mode is set to "auto" the heat pump selects when start and stop of additional heat and heat production is permitted, dependent on the average outdoor temperature. If accessories for cooling are present or if the heat pump has the integrated cooling function you can also select the start temperature for cooling.

Select the average outdoor temperatures in this menu.

You can also set the time over which (filtering time) the average temperature is calculated. If you select 0, the present outdoor temperature is used.

**Caution**

It cannot be set "stop additional heat" higher than "stop heating".

**Caution**

In systems where heating and cooling share the same pipes "stop heating" cannot be set higher than "start cooling".

Menu 4.9.3 - degree minute setting

current value

Setting range: -3000 – 3000

start compressor

Setting range: -1000 – -30

Default value: -60

step difference compressors

Setting range: 10 – 2000

Default value: 60

start diff additional heat

Setting range: 100 – 1000


Default value: 400

diff. between additional steps

Setting range: 0 – 1000


Default value: 30

Degree minutes are a measurement of the current heating requirement in the house and determine when the compressor respectively additional heat will start/stop.

 **Caution**
Higher value on "start compressor" gives more compressor starts, which increases wear in the compressor. Too low value can give uneven indoor temperatures.

Menu 4.9.4 - factory setting user

All settings that are available to the user (including advanced menus) can be reset to default values here.

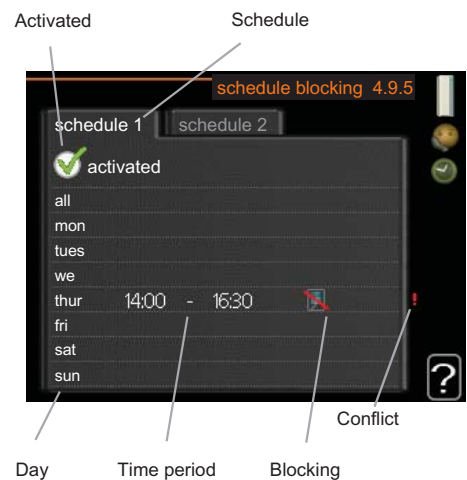
 **Caution**
After factory setting, personal settings such as heating curves must be reset.

Menu 4.9.5 - schedule blocking

The compressors in the heat pump and/or connected additional heating can be scheduled to be blocked for up to two different time periods here. If several heat pumps are connected as master/slave their compressors are blocked as well.

If two settings conflict with each other a red exclamation mark is displayed at the end of the line.

When scheduling is active the actual blocking symbol in the main menu on the heat pump symbol is displayed.



Schedule: The period to be changed is selected here.

Activated: Scheduling for the selected period is activated here. Set times are not affected at deactivation.

Day: Select which day or days of the week the schedule is to apply to here. To remove the scheduling for a particular day, the time for that day must be reset by setting the start time to the same as the stop time. If the line "all" is used, all days in the period are set for these times.

Time period: The start and stop time for the selected day for scheduling are selected here.

Blocking: The desired blocking is selected here.



Blocking of all available compressors.



Blocking of all available additional heating.



TIP

If you wish to set similar scheduling for every day of the week start by filling in "all" and then changing the desired days.



Caution

If the stop time is before the start time it means that the period extends past midnight.

Scheduling always starts on the date that the start time is set for.



Caution

Long term blocking can cause reduced comfort and operating economy.

Menu 5 - SERVICE

Overview

5 - SERVICE	5.1 - operating settings **	5.1.1 - hot water settings *
		5.1.2 - max flow line temperature
		5.1.3 - max diff flow line temp.
		5.1.4 - alarm actions
		5.1.5 - fan sp. exhaust air *
		5.1.7 - br pmp al set.
		5.1.8 - operating mode brine pump **
		5.1.9 - brine pump speed **
		5.1.10 - op. mod heat med pump **
		5.1.11 - pump speed heating medium **
		5.1.12 - step controlled add. heat
	5.2 - system settings	5.2.1 - master/slave mode **
		5.2.2 - installed slaves
		5.2.3 - docking
		5.2.4 - accessories
	5.3 - accessory settings	5.3.1 - FLM *
		5.3.2 - shunt controlled add. heat *
		5.3.3 - extra climate system *
		5.3.4 - solar heating *
		5.3.6 - step controlled add. heat AXC 50 *
		5.3.8 - hot water comfort *
	5.4 - soft in/outputs **	
	5.5 - factory setting service **	
	5.6 - forced control **	
	5.7 - start guide **	
	5.8 - quick start **	
	5.9 - floor drying function	
	5.10 - change log **	

* Accessory needed.

** This menu is also set in the slave heat pump's limited menu system.

Hold the Back button in for 7 seconds to access the Service menu.

Sub-menus

Menu **SERVICE** has orange text and is intended for the advanced user. This menu has several sub-menus. Status information for the relevant menu can be found on the display to the right of the menus.

operating settings Operating settings for the heat pump.

system settings System settings for the heat pump, activating accessories etc.

accessory settings Operational settings for different accessories.

soft in/outputs Setting software controlled in and outputs on the input circuit board (AA3).

factory setting service Total reset of all settings (including settings available to the user) to default values.

forced control Forced control of the different components in the heat pump.

start guide Manual start of the start guide which is run the first time the heat pump is started.

quick start Quick starting the compressor.

**NOTE**

Incorrect settings in the service menus can damage the heat pump.

Menu 5.1 - operating settings

Operating settings can be made for the heat pump in the sub menus.

This menu is also set in the slave heat pump's limited menu system.

Menu 5.1.1 - hot water settings**economy**

Setting range start temp. economy: 5 – 70 °C

Factory setting start temp. economy: 38 °C

Setting range stop temp. economy: 5 – 70 °C

Factory setting stop temp. economy: 43 °C

normal

Setting range start temp. normal: 5 – 70 °C

Factory setting start temp. normal: 45 °C

Setting range stop temp. normal: 5 – 70 °C

Factory setting stop temp. normal: 50 °C

luxury

Setting range start temp. lux: 5 – 70 °C

Factory setting start temp. lux: 47 °C

Setting range stop temp. lux: 5 – 70 °C

Factory setting stop temp. lux: 52 °C

stop temp. per. increase

Setting range: 55 – 70 °C

Default values: 55 °C

step difference compressors

Setting range: 0.0 - 20.0 °C

Default value: 0.5 °C

Here you set the start and stop temperature of the hot water for the different comfort options in menu 2.2 as well as the stop temperature for periodic increase in menu 2.9.1.

If several compressors are available set the difference between engagement disengagement of them during hot water charging and fixed condensing.

Menu 5.1.2 - max flow line temperature**climate system**

Setting range: 5-70 °C

Default value: 60 °C

Set the maximum supply temperature for the climate system here. If the installation has more than one climate system, individual maximum flow temperatures can be set for each system.

**Caution**

Underfloor heating systems are normally **max flow line temperature** set between 35 and 45 °C.

Menu 5.1.3 - max diff flow line temp.**max diff compressor**

Setting range: 1 – 25 °C

Default value: 10 °C

max diff addition

Setting range: 1 – 24 °C

Default value: 7 °C

Here you set the maximum permitted difference between the calculated and actual supply temperature during compressor respectively add. heat mode.

max diff compressor

When the current supply temperature **deviates** from the set value compared to that calculated, the heat pump is forced to stop irrespective of the degree-minute value.

If the calculated flow temperature **exceeds** the calculated flow with set value, the degree minute value is set to 0. The compressor stops when there is only a heating requirement.

max diff addition

If "addition" is selected and activated in menu 4.2 and the present supply temp **exceeds** the calculated with set value, the additional heat is forced to stop.

Menu 5.1.4 - alarm actions

Select how you want the heat pump to alert you that there is an alarm in the display here.

The different alternatives are that the heat pump stops producing hot water and/or reduces the room temperature.

**Caution**

If no alarm action is selected, it can result in higher energy consumption in the event of an alarm.

Menu 5.1.5 - fan sp. exhaust air (accessory is required)

normal and speed 1-4

Setting range: 0 – 100 %

Set the speed for the five different selectable speeds for the fan here.

If several exhaust air modules are installed settings can be made for each fan.

**Caution**

An incorrectly set ventilation flow can damage the house and may also increase energy consumption.

Menu 5.1.7 - br pmp al set.

min. brine out

Setting range: -14 – 15 °C

Default value: -8 °C

max brine in

Setting range: 10 – 30 °C

Default value: 20 °C

min. brine out

Set the temperature at which the heat pump is to activate the alarm for low temperature in outgoing brine.

If "automatic reset" is selected, the alarm resets when the temperature has increased by 1 °C below the set value.

max brine in

Set the temperature at which the heat pump is to activate the alarm for high temperature in incoming brine.

Select "alarm activated" to activate the alarm.

Menu 5.1.8 - operating mode brine pump

op. mode

Setting range: intermittent, continuous, 10 days continuous

Default value: intermittent

Set the operating mode of the brine pumps for this heat pump here.

This menu is also set in the slave heat pump's limited menu system.

intermittent: The brine pumps start 20 seconds before and stop at the same time as the compressors.

continuous: Continuous operation.

10 days continuous: Continuous operation for 10 days. Then the pumps shift to intermittent operation.

**TIP**

You can use "10 days continuous" at start-up to obtain continuous circulation during a start-up time in order to make it easier to bleed the system.

**NOTE**

F1345 40 and 60 kW only has one brine pump.

Menu 5.1.9 - brine pump speed

brine pump speed

Setting range: 0 - 100 %

Default values: 50 %

This menu is not displayed if you have a F1345 40 or 60 kW.

Set the speed of the brine pumps for this heat pump here.

This menu is also set in the slave heat pump's limited menu system.

Menu 5.1.10 - op. mod heat med pump

op. mode

Setting range: auto, intermittent, continuous

Default value: intermittent

Set the operating mode of the brine pumps for this heat pump here.

This menu is also set in the slave heat pump's limited menu system.

auto: The heating medium pumps run according to the current operating mode for F1345.

intermittent: The heating medium pumps start 20 seconds before and stop at the same time as the compressor.

continuous: Continuous operation.

Menu 5.1.11 - pump speed heating medium

hot water / heating / pool / economy / cooling

Setting range: 0 - 100 %

Default values: 70 %

Set the speed at which the heat pumps are to operate in the present operating mode for this heat pump.

This menu is also set in the slave heat pump's limited menu system.

"**hot water**" means operating mode hot water for the heating medium pumps.

"**heating**" means operating mode heating for the heating medium pumps.

"**pool**" means operating mode pool heating for the heating medium pumps.

"**economy**" means operating mode heating for the heating medium pumps but when the heat pump neither has a need for compressor operation nor electrical additional heat and slows down.

"**cooling**" means operating mode cooling for the heating medium pumps.

Menu 5.1.12 - step controlled add. heat

max step

Setting range (binary stepping deactivated): 0 – 3

Setting range (binary stepping activated): 0 – 7

Default value: 3

fuse size

Setting range: 1 - 200 A

Default values: 16 A

Make settings for internally connected external step controlled additional heat here. Step controlled additional heat is for example when an external electric boiler is installed.

It is possible, for example, to select when the additional heat is to start, to set the maximum number of permitted steps and whether binary stepping is to be used.

See the accessory installation instructions for function description.

Menu 5.2 - system settings

Make different system settings for the heat pump here, e.g. master/slave settings, docking settings and which accessories are installed.

Menu 5.2.1 - master/slave mode

Setting range: master, slave 1-8

Default value: master

Set the heat pump as master- or slave unit. In systems with one heat pump it must be "master".

This menu is also set in the slave heat pump's limited menu system.



Caution

In systems with several heat pumps each pump must have a unique name, that is only one heat pump can be "master" and only one for example can be "slave 5".

Menu 5.2.2 - installed slaves

Set which slaves are connected to the master heat pump.

There are two ways of activating connected slaves. You can either mark the alternative in the list or use the automatic function "search installed slaves".

search installed slaves

Mark "search installed slaves" and press the OK button to automatically find connected slaves for the master heat pump.



NOTE

Before these settings are made, each slave must have received a unique name (see menu 5.2.1).

Menu 5.2.3 - docking

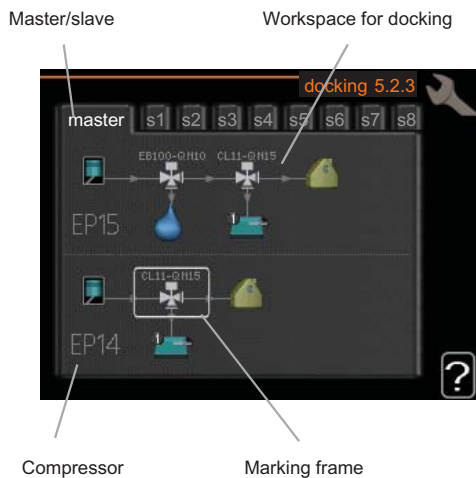
Enter how your system is docked regarding pipes, for example to pool heating, hot water heating and heating the building.



TIP

Examples of docking alternatives can be found at www.nibe.eu.

This menu has a docking memory which means that the control system remembers how a particular reversing valve is docked and automatically enters the correct docking the next time you use the same reversing valve.



Master/slave: Select which heat pump the docking setting is to be made for (if the heat pump is alone in the system only master is displayed).

Compressor: Select if your compressor (EP14 or EP15) is blocked (factory setting), externally controlled via soft input or standard (docked for example to pool heating, hot water heating and heating the building).

Marking frame: Move around the marking frame using the control knob. Use the OK button to select what you want to change and to confirm setting in the options box that appears to the right.

Workspace for docking: The system docking is drawn here.

Symbol	Description
	Compressor (blocked)
	Compressor (externally controlled)
	Compressor (standard)
	Reversing valves for hot water - respectively pool control. The designations above the reversing valve indicate where it is electrically connected (EB100 = Master, EB101 = Slave 1, CL11 = Pool 1 etc.).
	Hot water charging
	Pool 1
	Pool 2
	Heating (heating the building, includes any extra climate system)

Menu 5.2.4 - accessories

Inform the heat pump which accessories are installed here.

There are two ways of activating connected accessories. You can either mark the alternative in the list or use the automatic function "search installed acc."

search installed acc.

Mark "search installed acc." and press the OK button to automatically find connected accessories for F1345.



Caution

"level sensor" are not found automatically but must be ticked off by hand.



NOTE

Only mark the option for ground water pump if the accessory AXC 50 is to be used to control the circulation pump.

Menu 5.3 - accessory settings

The operating settings for accessories that are installed and activated are made in the sub-menus for this.

Menu 5.3.1 - FLM

time between defrosts

Setting range: 1 – 30 h

Default value: 10 h

months btwn filter alarms

Setting range: 1 – 12

Default value: 3

continuous pump op.: Select for continuous operation of the circulation pump in the exhaust air module.

time between defrosts: Set the minimum time that must pass between defrostings of the heat exchanger in the exhaust air module.

When the exhaust air module is in operation the heat exchanger is cooled so that ice builds up on it. When too much ice builds up the heat transfer capacity of the heat exchanger is reduced and defrosting is required. Defrosting warms up the heat exchanger so that the ice melts and runs off via the condensation hose.

months btwn filter alarms: Set how many months should pass before the heat pump informs that it is time to clean the filter in the exhaust air module.

Clean the exhaust air module's air filter regularly, how often depends on the amount of dust in the ventilation air.

Menu 5.3.2 - shunt controlled add. heat

start addition

Setting range: -2000 – -30 GM

Default values: -400 GM

minimum running time

Setting range: 0 – 48 h

Default value: 12 h

min temp.

Setting range: 5 – 90 °C

Default value: 55 °C

mixing valve amplifier

Setting range: 0.1 –10.0

Default value: 1.0

mixing valve step delay

Setting range: 10 – 300 s

Default values: 30 s

Set when the addition is to start, the minimum run time and the minimum temperature for external addition with shunt here. External addition with shunt is then for example wood/oil/gas/pellet boiler.

For the shunt you can set shunt amplification and shunt waiting time.

See the accessory installation instructions for function description.

Menu 5.3.3 - extra climate system

mixing valve amplifier

Setting range: 0.1 –10.0

Default value: 1.0

mixing valve step delay

Setting range: 10 – 300 s

Default values: 30 s

Set the shunt amplification and shunt waiting time for the different extra climate systems that are installed.

See the accessory installation instructions for function description.

Menu 5.3.4 - solar heating

start delta-T

Setting range: 1 - 40 °C

Default value: 8 °C

stop delta-T

Setting range: 0 - 40 °C

Default value: 4 °C

max. tank temperature

Setting range: 5 - 110 °C

Default value: 95 °C

max. solar collector temp.

Setting range: 80 - 200 °C

Default value: 125 °C

anti-freeze temperature

Setting range: -20 - +20 °C

Default value: 2 °C

start solar collector cooling

Setting range: 80 - 200 °C

Default value: 110 °C

start delta-T, stop delta-T: Here you can set the temperature difference between solar panel and solar tank at which the circulation pump is to start and stop.

max. tank temperature, max. solar collector temp.: Here you can set the maximum temperatures in tank respectively solar panel at which the circulation pump is to stop. This is to protect against excess temperatures in the solar tank and production of steam in the solar circuit.

anti-freeze temperature: Here you can set the temperature in the solar panel at which the circulation pump is to start to prevent freezing.

start solar collector cooling: If the temperature in the solar panel is greater than this setting at the same time that the temperature in the solar tank is greater than the set maximum temperature, the external function for cooling is activated.

Menu 5.3.6 - step controlled add. heat AXC 50

start addition

Setting range: -2000 – -30 GM

Default values: -400 GM

diff. between additional steps

Setting range: 0 – 1000 GM

Default values: 30 GM

max step

Setting range (binary stepping deactivated): 0 – 3

Setting range (binary stepping activated): 0 – 7

Default value: 3

Make settings for step controlled addition here. Step controlled addition is for example an external electric boiler.

It is possible, for example, to select when the additional heat is to start, to set the maximum number of permitted steps and whether binary stepping is to be used.

See the accessory installation instructions for function description.

Menu 5.3.8 - hot water comfort

outgoing hot water

Setting range: 40 - 65 °C

Default value: 55 °C

mixing valve amplifier

Setting range: 0.1 –10.0

Default value: 1.0

mixing valve step delay

Setting range: 10 – 300 s

Default values: 30 s

Make settings for the hot water comfort here.

See the accessory installation instructions for function description.

activating imm heater: Set whether an immersion heater is installed in the water heater here.

activ. imm heater in heat mode: Set whether the immersion heater in the tank (required if the alternative above is activated) will be permitted to charge hot water if the compressors in the heat pump prioritise heating.

activating the mixing valve: Set whether a mixing valve for limiting the temperature of hot water from the water heater is installed. If this alternative has been activated

you can set the outgoing hot water temperature, shunt amplification and shunt waiting time for the mixing valve.

outgoing hot water: Set the temperature at which the mixing valve is to restrict hot water from the water heater.

Menu 5.4 - soft in/outputs

Here you can select which in/output on the terminal block (X6) the external contact function (see installation manual) must be connected to.

This menu is also set in the slave heat pump's limited menu system.

Selectable inputs on terminal block AUX1-3 (X6:17-19 and X6:GND) and output on terminal block X5.

Menu 5.5 - factory setting service

All settings can be reset (including settings available to the user) to default values here.

This menu is also set in the slave heat pump's limited menu system.



NOTE

When resetting, the start guide is displayed the next time the heat pump is restarted.

Menu 5.6 - forced control

You can force control the different components in the heat pump and any connected accessories here.

This menu is also set in the slave heat pump's limited menu system.

Menu 5.7 - start guide

When the heat pump is started for the first time the start guide starts automatically. Start it manually here.

This menu is also set in the slave heat pump's limited menu system.

See installer manual for more information about the start guide.

Menu 5.8 - quick start

It is possible to start the compressor from here.

This menu is also set in the slave heat pump's limited menu system.



Caution

There must be a heating or hot water demand to start the compressor.



Caution

Do not quick start the compressor too many times in succession over a short period of time as this may damage the compressor and its ancillary equipment.

Menu 5.9 - floor drying function

length of period 1 - 3, 5-7

Setting range: 0 - 30 days

Default value: 2 days

temp. period 1 - 3, 5-7

Setting range: 15 - 70 °C

Default value:

temp. period 1	20 °C
temp. period 2	30 °C
temp. period 3	40 °C
temp. period 5	40 °C
temp. period 6	30 °C
temp. period 7	20 °C

length of period 4

Setting range: 0 - 30 days

Default value: 3 days

temp. period 4

Setting range: 15 - 70 °C

Default value: 45 °C

Set the function for under floor drying here.

You can set up to seven period times with different calculated flow temperatures. If less than seven periods are to be used, set the remaining period times to 0 days.

Mark the active window to activate the under floor drying function. A counter at the bottom shows the number of days the function has been active. The function counts degree minutes as during normal heating operation but for the flow temperatures that are set for the respective period.



NOTE

During floor drying the heating medium pump in 100% runs regardless of the setting in menu 5.1.10.



TIP

If operating mode "add. heat only" is to be used, select it in menu 4.2.

For a more even flow temperature the addition can be started earlier by setting "start for addition" in menus 4.9.2 to -80. When set under floor drying periods have stopped, reset the menus 4.2 and 4.9.2 as per previous settings.

Menu 5.10 - change log

Read off any previous changes to the control system here.

The date, time and ID no. (unique to certain settings) and the new set value is shown for every change.

This menu is also set in the slave heat pump's limited menu system.



NOTE

The change log is saved at restart and remains unchanged after factory setting.

4 Service

Service actions



NOTE

Servicing should only be carried out by persons with the necessary expertise.

When replacing components on F1345 only replacement parts from NIBE may be used.

Emergency mode



NOTE

Switch (SF1) must not be moved to "I" or "⚠" until F1345 has been filled with water. Otherwise the compressor can be damaged.

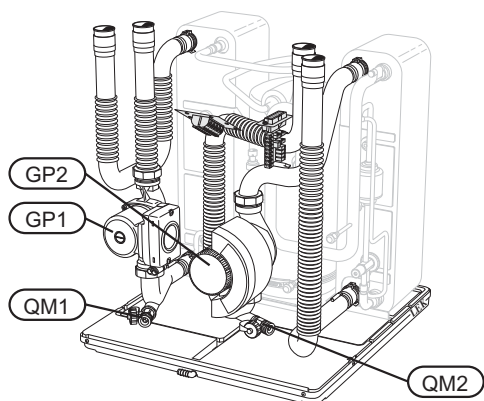
Emergency mode is used in event of operational interference and in conjunction with service. Hot water is not produced in emergency mode.

Emergency mode is activated by setting switch (SF1) to "⚠". This means that:

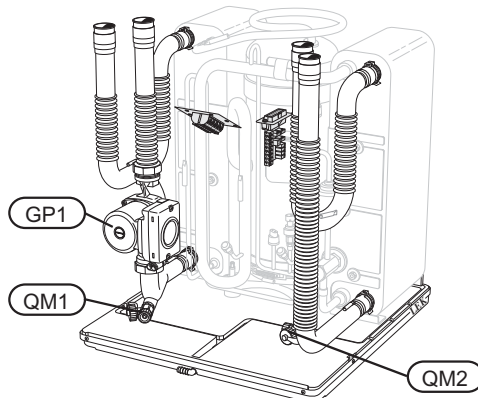
- The status lamp illuminates yellow.
- The display is not lit and the control computer is not connected.
- Hot water is not produced.
- The compressor and brine pump for each cooling module are off.
- Accessories are switched off.
- Internal heating medium pumps are active.
- The emergency mode relay (K1) is active.

External additional heating is active if it is connected to the emergency mode relay (K1, terminal block X4). Ensure that the heating medium circulates through the external additional heating.

F1345 24 and 30 kW, 3x400 V



F1345 40 and 60 kW, 3x400 V



Draining the water heater (if docked)

The siphon principle is used to empty the hot water heater. This can be done either via the drain valve on the incoming cold water pipe or by inserting a hose into the cold water connection.

Draining the climate system

In order to carry out service on the climate system, it may be easier to drain the system first. This can be done in different ways depending on what needs doing:



NOTE

There may be some hot water when draining the heating medium side/climate system. There is a risk of scalding.

Draining the heating medium side in a cooling module

If, for example, the heating medium pump requires replacing or a cooling module requires servicing, drain the heating medium side as follows:

1. Close the shut-off valves outside the heat pump for the heating medium side (return and flow line).
2. Connect a hose to the bleed valve (QM1) and open the valve. Some liquid will run out.
3. Air must get into the system for the remaining liquid to run out. Do this by slightly slackening off the connection at the shut-off valve that joins the climate system and the heat pump at the connection (XL2) for the cooling module.

When the heating medium side is drained, the required service can be performed and/or replacement of any components carried out.

Draining the entire climate system

If the entire climate system requires draining, do this as follows:

1. Connect a hose to the bleed valve (QM1) and open the valve. Some liquid will run out.

- Air must get into the system for the remaining liquid to run out. This is done by unscrewing the bleed screw on the highest radiator in the building.

When the climate system is empty the requisite service can be carried out.

Emptying the brine system

In order to service the brine system it may be easier to drain the system first.

Draining the brine system in a cooling module

If, for example, the brine pump requires replacing or a cooling module requires servicing, drain the brine system by:

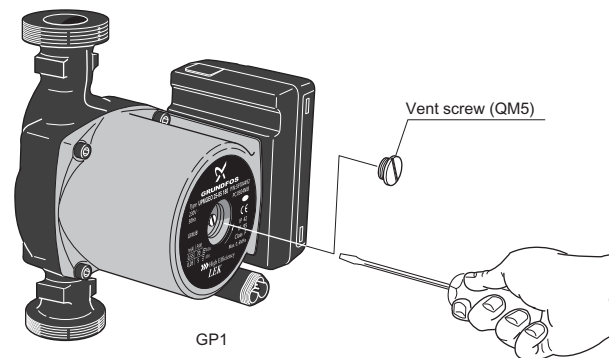
- Close the shut-off valve outside the heat pump for the brine system.
- Connect a hose to the drain valve (QM2), place the other opening of the hose in a container and open the valve. A small amount of brine will flow into the container.
- Air must get into the system for the remaining brine to run out. Do this by slightly slackening off the connection at the shut-off valve that joins the brine side and the heat pump at the connection (XL7) for the cooling module.

When the brine side is empty the requisite service can be carried out.

Helping the circulation pump to start (GP1)

- Shut off F1345 by setting the switch to "⏻".
- Open the service cover.
- Remove the cover for the cooling module.
- Loosen the venting screw with a screwdriver. Hold a cloth around the screwdriver blade as a small amount of water may run out.
- Insert a screwdriver and turn the pump motor around.
- Screw in the venting screw.
- Start F1345 by setting the switch to "I" and check whether the circulation pump works.

It is usually much easier to start the circulation pump with F1345 running, switch set to "I". If helping the circulation pump to start is performed with F1345 running, be prepared for the screwdriver to jerk when the pump starts.



The image shows an example of what a circulation pump can look like.

Temperature sensor data

Temperature (°C)	Resistance (kOhm)	Voltage (VDC)
-40	351.0	3.256
-35	251.6	3.240
-30	182.5	3.218
-25	133.8	3.189
-20	99.22	3.150
-15	74.32	3.105
-10	56.20	3.047
-5	42.89	2.976
0	33.02	2.889
5	25.61	2.789
10	20.02	2.673
15	15.77	2.541
20	12.51	2.399
25	10.00	2.245
30	8.045	2.083
35	6.514	1.916
40	5.306	1.752
45	4.348	1.587
50	3.583	1.426
55	2.968	1.278
60	2.467	1.136
65	2.068	1.007
70	1.739	0.891
75	1.469	0.785
80	1.246	0.691
85	1.061	0.607
90	0.908	0.533
95	0.779	0.469
100	0.672	0.414

Extracting the cooling modules

The cooling modules can be pulled out for service and transport.



NOTE

The heat pump must not be moved when only the lower cooling module has been pulled out. If the heat pump is not secured in position the upper cooling module must always be removed before the lower one can be pulled out.



Caution

The cooling modules are easier to remove if drained first (see page 33).

Weight of the cooling module

Type (F1345)	Weight (kg)
24 kW	130
30 kW	135
40 kW	143.5
60 kW	144



NOTE

Shut off the heat pump and turn off the current on the safety breaker.

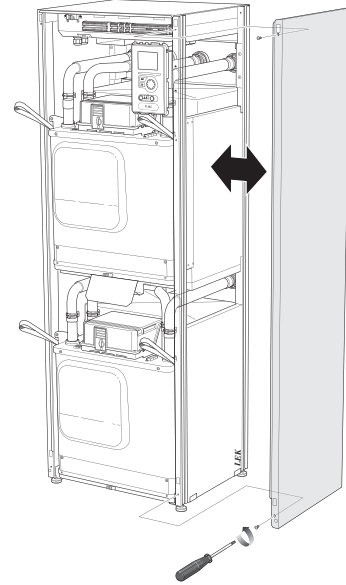


Caution

Remove the front cover according to the description in the installer manual.

- 1 Close the shut-off valves outside the heat pump.
Drain the cooling module or cooling modules according to the instructions on page 33.

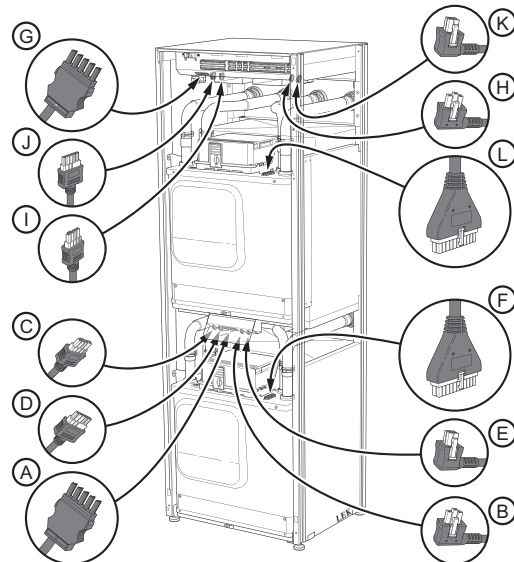
- 2 Remove the side panel to be able to remove the display unit (this procedure need only be done if you are going to pull out the upper cooling module).



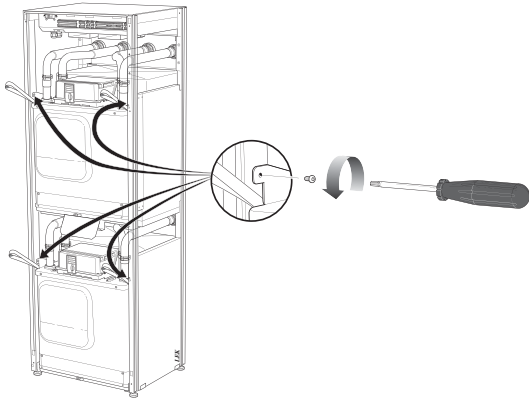
- 3 Disconnect the connectors for the relevant cooling module.

Cooling module EP14 (lower): XJ1 (A), XJ3 (B), XJ4 (C), XJ5 (D), XJ10 (E) and EP14-AA100:XJ1 (F).

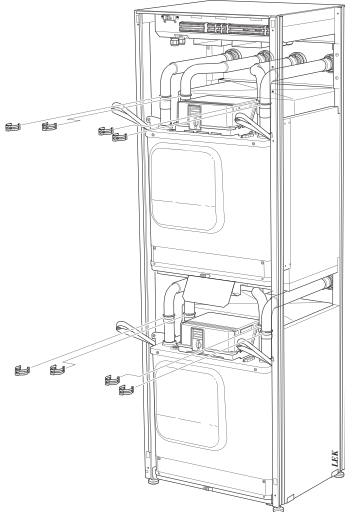
Cooling module EP15 (upper): XJ2 (G), XJ6 (H), XJ7 (I), XJ8 (J), XJ9 (K) and EP15-AA100:XJ1 (L).



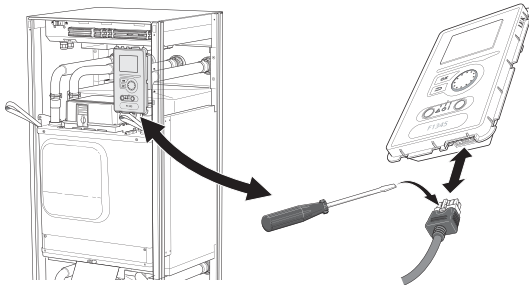
- 4 Remove the screws (two for each cooling module).



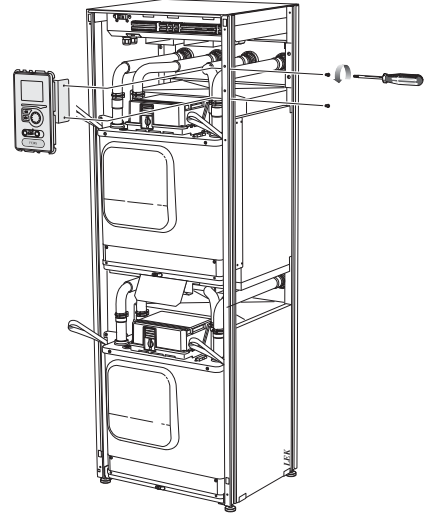
- 5 Pull off the clips (four for each cooling module) and separate the pipes carefully.



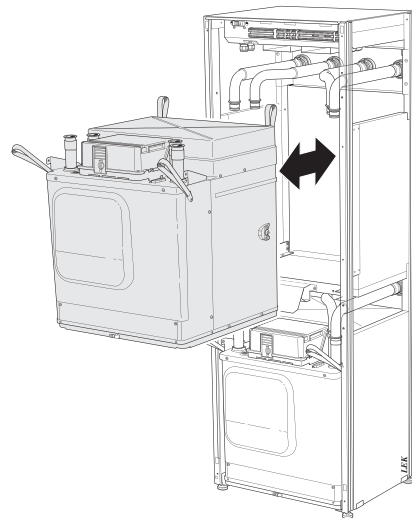
- 6 Remove the connector from the underside of the display unit (this procedure need only be done if you are going to pull out the upper cooling module).



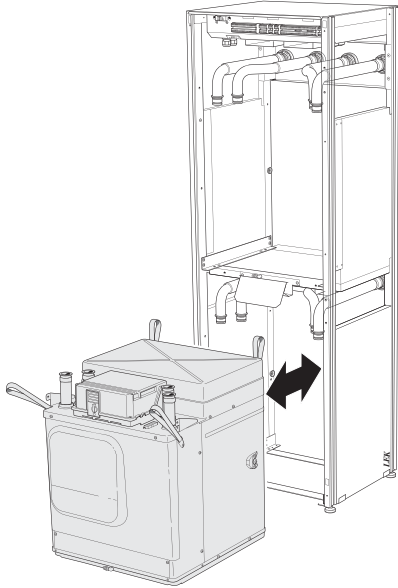
- 7 Remove the screws holding the display unit in the frame (this procedure need only be done if you are going to pull out the upper cooling module).



- 8 Carefully pull out the upper cooling module (EP15). Use a height adjustable relief surface for this procedure.



- 9 Carefully pull out the lower cooling module (EP14).
If the heat pump is not secured in position the upper cooling module must always be removed before the lower one can be pulled out.



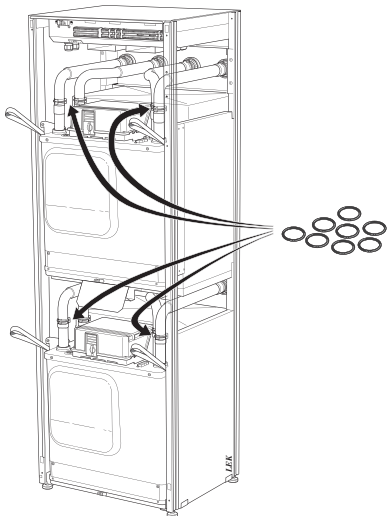
TIP

The cooling module is installed in reverse order.

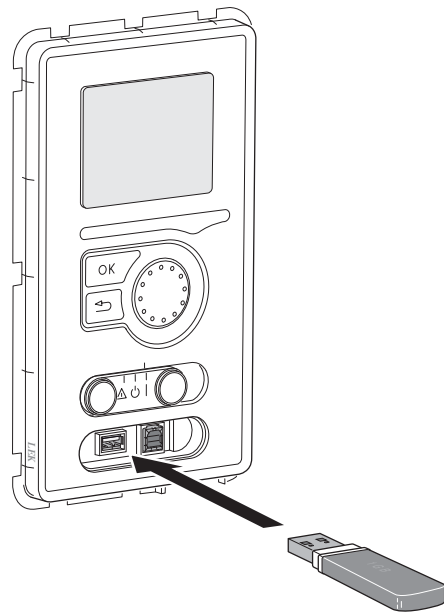


NOTE

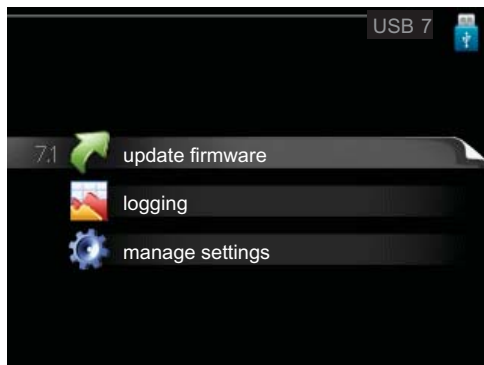
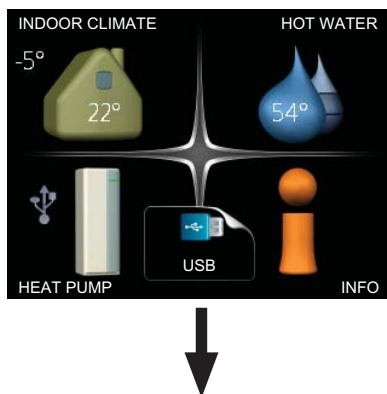
At reinstallation, the supplied O-rings must replace the existing ones at the connections to the heat pump (see image).



USB service outlet

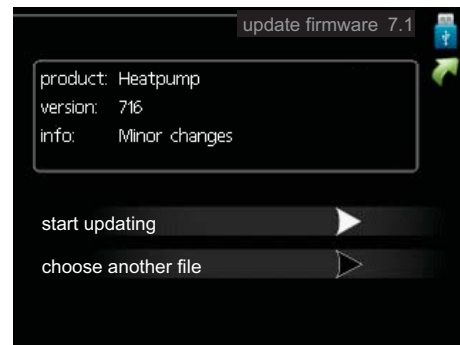


F1345 is equipped with a USB socket in the display unit. This USB socket can be used to connect a USB memory to update the software, save logged information and handle the settings in F1345.



When a USB memory is connected a new menu (menu 7) appears in the display.

Menu 7.1 - update firmware



This allows you to update the software in F1345.



NOTE

For the following functions to work the USB memory must contain files with software for F1345 from NIBE.

The fact box at the top of the display shows information (always in English) of the most probable update that the update software has selected from the USB memory.

This information states which product the software is intended for, the software version and general information about them. If you wish to select another file than the one selected, the correct file can be selected by "choose another file".

start updating

Select "start updating" if you want to start the update. You are asked whether you really want to update the software. Respond "yes" to continue or "no" to undo.

If you responded "yes" to the previous question the update starts and you can now follow the progress of the update on the display. When the update is complete F1345 restarts.



NOTE

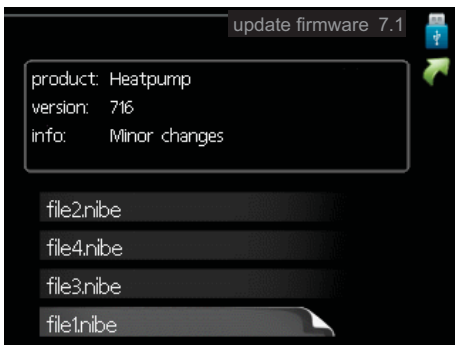
A software update does not reset the menu settings in F1345.



NOTE

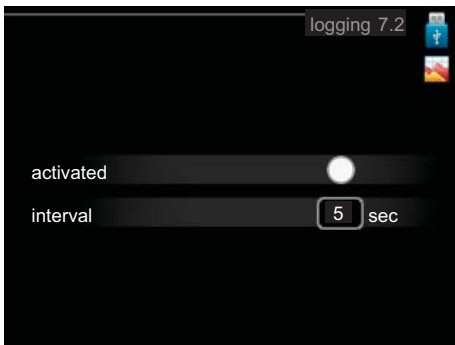
If the update is interrupted before it is complete (for example power cut etc.) the software can be reset to the previous version if the OK button is held in during start up until the green lamp starts to illuminate (takes about 10 seconds).

choose another file



Select "choose another file" if you do not want to use the suggested software. When you scroll through the files, information about the marked software is shown in a fact box just as before. When you have selected a file with the OK button you will return to the previous page (menu 7.1) where you can choose to start the update.

Menu 7.2 - logging



Setting range: 1 s – 60 min
Default setting range: 5 s

Set whether the present measurement values from F1345 are to be saved in a log on the USB memory.

Log for longer periods

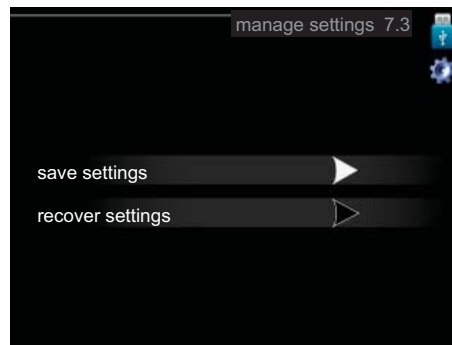
1. Set the desired interval between loggings.
2. Tick "activated".
3. Mark "read log settings" and press the OK button.
4. The present values from F1345 are saved in a file in the USB memory at the set interval until "activated" is unticked.



Caution

Untick "activated" before removing the USB memory.

Menu 7.3 - manage settings



Here you can manage (save as or retrieve from) all the menu settings (user and service menus) in F1345 with a USB memory.

Via "save settings" you save the menu settings to the USB memory in order to restore them later or to copy the settings to another F1345.



NOTE

When you save the menu settings to the USB memory you replace any previously saved settings on the USB memory.

Via "recover settings" you reset all menu settings from the USB memory.



NOTE

Reset of the menu settings from the USB memory cannot be undone.

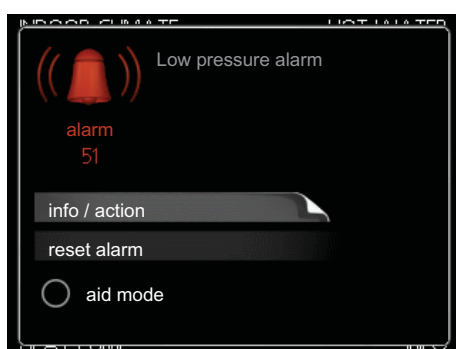
5 Disturbances in comfort

In most cases, the heat pump notes operational interference (operational interference can lead to disturbance in comfort) and indicates this with alarms and shows action instructions in the display.

Info-menu

All the heat pump measurement values are gathered under menu 3.1 in the heat pump menu system. Looking through the values in this menu can often simplify finding the fault source. See page 19 for more information about menu 3.1.

Manage alarm



In the event of an alarm, some kind of malfunction has occurred, which is indicated by the status lamp changing from green continuously to red continuously. In addition, an alarm bell appears in the information window.

Alarm

In the event of an alarm with a red status lamp a malfunction has occurred that the heat pump cannot remedy itself. In the display, by turning the control knob and pressing the OK button, you can see the type of alarm it is and reset it. You can also choose to set the heat pump to aid mode.

info / action Here you can read what the alarm means and receive tips on what you can do to correct the problem that caused the alarm.

reset alarm In most cases it is enough to select "reset alarm" to correct the problem that caused the alarm. If a green light illuminates after selecting "reset alarm" the alarm has been remedied. If a red light is still visible and a menu called "alarm" is visible in the display, the problem that caused the alarm remains. If the alarm disappears and then returns, see the troubleshooting section (page 40).

aid mode "aid mode" is a type of emergency mode. This means that the heat pump produces heat and/or hot water despite there being some kind of problem. This can mean that the heat pump's compressor is not running. In this case the immersion heater produces heat and/or hot water.



Caution

Selecting "aid mode" is not the same as correcting the problem that caused the alarm. The status lamp will therefore continue to be red.

If the alarm does not reset, contact your installer for suitable remedial action.



NOTE

Always communicate the product's serial number (14 digits) when reporting a fault.

Troubleshooting



NOTE

Work behind covers secured by screws may only be carried out by, or under the supervision of, a qualified installation engineer.



NOTE

In the event of action to rectify malfunctions that require work within screwed hatches the incoming electricity must be isolated at the safety switch.



NOTE

Because F1345 can be connected to a large number of external units, these should also be checked.

If the operational interference is not shown in the display the following tips can be used:

Basic actions

Start by checking the following possible fault sources:

- The switch's (SF1) position.
- Group and main fuses of the building.
- The building's earth circuit breaker.
- The heat pump's miniature circuit breaker (FC1).
- Correctly set load monitor (if installed).

Low hot water temperature or a lack of hot water

- Closed or choked filling valve for the hot water heater.
 - Open the valve.
- Mixing valve (if there is one installed) set too low.
 - Adjust the mixer valve.
- Heat pump in incorrect operating mode.
 - If mode "manual" is selected, select "addition".

- Large hot water consumption.
 - Wait until the hot water has heated up. Temporarily increased hot water capacity (temporary lux) can be activated in menu 2.1.
- Too low hot water setting.
 - Enter menu 2.2 and select a higher comfort mode.
- Too low or no operating prioritisation of hot water.
 - Enter menu 4.9.1 and increase the time for when hot water is to be prioritised.

Low room temperature

- Closed thermostats in several rooms.
 - Set the thermostats to max in as many rooms as possible. Adjust the room temperature via menu 1.1 instead of choking the thermostats.
- Heat pump in incorrect operating mode.
 - Enter menu 4.2. If mode "auto" is selected, select a higher value on "stop heating" in menu 4.9.2.
 - If mode "manual" is selected, select "heating". If this is not enough, select "addition".
- Too low set value on the automatic heating control.
 - Enter menu 1.1 (temperature) and adjust the heat curve offset of the heat curve. If the room temperature is only low in cold weather the curve slope in the menu 1.9.1 (heating curve) needs to be adjusted up.
- Too low or no operating prioritisation of heat.
 - Enter menu 4.9.1 and increase the time for when heating is to be prioritised.
- Holiday mode activated in menu 1.3.4.
 - Enter menu 1.3.4 and select "Off".
- External switch for changing the room heating activated.
 - Check any external switches.
- Circulation pump(s) (GP1 and/or GP2) stopped.
 - See section "Helping the circulation pump to start" on page 34.
- Air in the climate system.
 - Vent the climate system.
- Closed valves to the climate system.
 - Open the valves.

High room temperature

- Too high set value on the automatic heating control.
 - Enter menu 1.1 (temperature) and adjust the heat curve offset downwards. If the room temperature is only high in cold weather the curve slope in menu 1.9.1 (heating curve) needs to be adjusted down.

- External switch for changing the room heating activated.
 - Check any external switches.

Low system pressure

- Not enough water in the climate system.
 - Top up the water in the climate system.

Low or a lack of ventilation

This part of the fault-tracing chapter only applies if the NIBE FLM accessory is installed.

- Filter blocked.
 - Clean or replace the filter.
- Exhaust air device blocked or throttled down too much.
 - Check and clean the exhaust air devices.
- Fan speed in reduced mode.
 - Enter menu 1.2 and select "normal".
- External switch for changing the fan speed activated.
 - Check any external switches.

High or distracting ventilation

This part of the fault-tracing chapter only applies if the NIBE FLM accessory is installed.

- The ventilation is not adjusted.
 - Order/implement ventilation adjustment.
- Fan speed in forced mode.
 - Enter menu 1.2 and select "normal".
- External switch for changing the fan speed activated.
 - Check any external switches.
- Filter blocked.
 - Clean or replace the filter.

The compressor does not start

- There is no heating requirement.
 - The heat pump does not call on heating nor hot water.
- Temperature conditions tripped.
 - Wait until the temperature condition has been reset.
- Minimum time between compressor starts has not been reached.
 - Wait 30 minutes and check if the compressor has started.
- Alarm tripped.
 - Follow the display instructions.

Gurgling sound

This part of the fault-tracing chapter only applies if the NIBE FLM accessory is installed.

- Not enough water in the water seal.
 - Refill the water seal with water.
- Choked water seal.
 - Check and adjust the condensation water hose.

Alarm list

A-alarm

At an A alarm the red light shows on the front and an alarm icon is displayed and the alarm relay is activated (if the AUX output is selected for this in menu 5.4). First go through the suggested actions shown in the display.

Depending on the settings in menu 5.1.4 the heat pump can stop producing hot water and/or reduce the room temperature to alert you to the fact that an alarm has occurred.



Caution

The alarm texts in the display can vary depending on how many heat pumps are connected to the system.

Among other things, text can be added depending on what heat pump the alarm applies (EB10# where EB100 is the master and EB101 – EB108 is the slave 1 – slave 8) and where in the heat pump the component that alarms is (for example EP14 which is the lower cooling module).

Resetting the A alarm

Alarms numbers 1 - 39 are reset automatically when a fault free sensor has been connected for 60 seconds or via manual resetting in the alarm menu.

Alarm numbers 40 - 53 are reset manually in the alarm menu.

Alarm number 54 is reset by resetting the motor protection breaker and by manually resetting the alarm in the alarm menu.

Alarm numbers 55 - 57 are reset manually in the alarm menu.

Alarm numbers 70-99 reset automatically when the communication is resumed.

Alarm no.	Alarm text on the display	Cause	Heat pump action.	May be due to
1	Sensor flt:BT1	No contact with the sensor. (Temperature sensor, Outdoor)	Calculated supply temp is set to min supply.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
3	Sensor flt:BT3	No contact with the sensor. (Temperature sensor, Heating medium return)	Compressor blocked during hot water charging. "Max condenser supply" is set to "max return".	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
6	Sensor flt:BT6	No contact with the sensor. (Temperature sensor, Hot water charging)	Hot water charging is blocked.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
11	Sens flt:BT11	No contact with the sensor. (Temperature sensor, Brine out)	Compressor blocked.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
12	Sens flt:BT12	No contact with the sensor. (Temperature sensor, Condenser supply)	Compressor blocked.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
20*	Flt: AZ1-BT20	No contact with the sensor. (Temperature sensor, Exhaust air)	Circulation pump (AZ1-GP2) in FLM is blocked.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
21*	Err: AZ1-BT21	No contact with the sensor. (Temperature sensor, Extract air)	Circulation pump (AZ1-GP2) in FLM is blocked.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor

Alarm no.	Alarm text on the display	Cause	Heat pump action.	May be due to
25	Err: BT25	No contact with the sensor. (Temperature sensor, Heating medium supply, External)	Additional heat is blocked. New actual value = BT71 + 10K	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
26*	Err: AZ1-BT26	No contact with the sensor. (Temperature sensor, Brine collector in)	Circulation pump (AZ1-GP2) in FLM is blocked.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
27	Sensor flt:BP8	No contact with the sensor. (Sensor, low pressure)	Compressor blocked.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
28	Sens flt:BT71	No contact with the sensor. (Temperature sensor, Heating medium return, External)	No action. Together with alarm 25 heating is blocked.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
29	Sens flt:BT29	No contact with the sensor. (Temperature sensor, Compressor)	Compressor blocked.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
33*	Flt: EP30-BT53	No contact with the sensor. (Temperature sensor, Solar panel)	Solar accessory is blocked.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
34*	Flt: EP30-BT54	No contact with the sensor. (Temperature sensor, Solar coil)	Solar accessory is blocked.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
35*	Flt:EM1-BT52	No contact with the sensor. (Temperature sensor, Boiler)	Shunt closes. Burner stops.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
36*	Sensor flt:EP21 BT2	No contact with the sensor. (Temperature sensor, Heating medium flow, Climate system 2)	Controls the return sensor (EP21-BT3).	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
37*	Sensor flt:EP22 BT2	No contact with the sensor. (Temperature sensor, Heating medium flow, Climate system 3)	Controls the return sensor (EP22-BT3).	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
38*	Sensor flt:EP23 BT2	No contact with the sensor. (Temperature sensor, Heating medium flow, Climate system 4)	Controls the return sensor (EP23-BT3).	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
39*	Err: EQ1-BT64	No contact with the sensor. (Temperature sensor, Cooling supply line)	Cooling blocked. Cooling shunt closes.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor

Alarm no.	Alarm text on the display	Cause	Heat pump action.	May be due to
40	Compr.phs 1	The compressor phase mentioned has been below 160 V for 30 min.	Compressor blocked.	Phase failure
41	Compr.phs 2			
42	Compr.phs 3			
43	In phs seq	The phases are connected in the wrong order.	Compressor blocked.	The phase order of the incoming electrical supply is wrong.
44	Flt: Sft-start	Fuses for the large soft start card are defective (does not apply to 30, 40 and 60 kW).	Compressor blocked.	<ul style="list-style-type: none"> ▪ Defective fuse. ▪ Defective soft start card.
51	LP alarm	Low pressure sensor transmitter is below cut-out value.	Compressor blocked.	<p>Bad circulation in the brine.</p> <ul style="list-style-type: none"> ▪ Check the brine pump. ▪ Check that the brine has been vented. ▪ Check the brine's freezing point. <p>Lack of heating medium or other fault in the cooling circuit.</p> <ul style="list-style-type: none"> ▪ Contact an authorised refrigeration technician.
53*	Lvl sen Br	Brine level switch/ pressure switch has tripped.	Compressor and brine pump blocked.	Leakage in the brine circuit.
54	MP alarm	The motor protection breaker has tripped.	Compressor blocked.	<ul style="list-style-type: none"> ▪ Phase failure. ▪ Defective compressor.
55	Hot gas alarm	The compressor has been stopped 3 times in 240 min because the hot gas has exceeded 135 °C.	Compressor blocked.	Defective compressor.
56	Erroneous serial no	The heat pump has a serial number that does not exist.	Compressors are stopped and relay is deactivated.	Incorrectly entered serial number.
57	Erroneous software	The heat pump program and serial numbers do not match each other.	Compressors are stopped and relay is deactivated.	Incorrect software installed.
58	Pressure switch alarm	High or low pressure switch has tripped.	Compressor blocked.	Bad circulation in the brine or heating medium side.
60	Lo Bri out	The temperature of the outgoing brine (BT11) goes below the set min-temperature and the alarm is selected to be permanent.	Compressor blocked.	<p>Bad circulation in the brine.</p> <ul style="list-style-type: none"> ▪ Check the brine pump. ▪ Check that the brine has been vented. ▪ Check the brine's freezing point.
70	Comm.fault In	Communication with the input card (AA3) is missing.	Blocks relevant compressor. If the heat pump is the master the calculated supply is set to min supply.	Defective communication cables.

Alarm no.	Alarm text on the display	Cause	Heat pump action.	May be due to
71	Com.flt Base	Communication with the input card (AA2 or AA26) is missing.	Compressor blocked.	Defective communication cables.
72	Comm.flt MC	Communication with the soft start card (AA10) is missing.	Compressor blocked.	Defective communication cables.
73-95*	Com.err. Acc.	Communication with the accessory card is missing.	Accessory is blocked.	<ul style="list-style-type: none"> ▪ Defective communication cables. ▪ Incorrectly set dipswitch.
96-99*	Com.err. RMU	Communication with the room unit is missing.	Room unit is blocked.	Defective communication cables.
252	Slave heatpump #1 comm.err.	Communication with the slave is missing.	Compressor blocked in the slave.	Defective communication cables.
	Slave heatpump #2 comm.err.			
	Slave heatpump #3 comm.err.			
	Slave heatpump #4 comm.err.			
	Slave heatpump #5 comm.err.			
	Slave heatpump #6 comm.err.			
	Slave heatpump #7 comm.err.			
	Slave heatpump #8 comm.err.			
253*	Flt: QZ1-BT70	No contact with the sensor. (Temperature sensor, Hot water supply)	The mixing valve is closed and only cold water is permitted.	<ul style="list-style-type: none"> ▪ Open-circuit or short-circuit on sensor input. ▪ Defective sensor

* Accessory needed.

B alarm

In the event of a B alarm the green light shows on the front and a symbol with a service technician is displayed

in the information window until the alarm is reset. All alarms are automatically reset if the cause is rectified. These alarms are so called information alarms and are not registered in the alarm log.

Alarm no.	Alarm text on the display	Cause	Heat pump action.	Resets automatically when	May be due to
101	Sensor flt:BT1	No contact with the sensor. (Temperature sensor, Outdoor)	Calculated supply temp is set to min supply.	Continuous contact with the sensor.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
103	Sensor flt:BT3	No contact with the sensor. (Temperature sensor, Heating medium return)	Compressor blocked during hot water charging. "Max condenser supply" is set to "max return".	Continuous contact with the sensor.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
106	Sensor flt:BT6	No contact with the sensor. (Temperature sensor, Hot water charging)	Hot water charging is blocked.	Continuous contact with the sensor.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
111	Sens flt:BT11	No contact with the sensor. (Temperature sensor, Brine out)	Compressor blocked.	Continuous contact with the sensor.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
112	Sens flt:BT12	No contact with the sensor. (Temperature sensor, Condenser supply)	Compressor blocked.	Continuous contact with the sensor.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
125	Err: BT25	No contact with the sensor. (Temperature sensor, Heating medium supply, External)	Additional heat is blocked. New actual value = BT71 + 10K	Continuous contact with the sensor.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
128	Sens flt:BT71	No contact with the sensor. (Temperature sensor, Heating medium return, External)	No action. Together with alarm 25 heating is blocked.	Continuous contact with the sensor.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
129	Sens flt:BT29	No contact with the sensor. (Temperature sensor, Compressor)	Compressor blocked.	Continuous contact with the sensor.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor
135*	Flt:EM1-BT52	No contact with the sensor. (Temperature sensor, Boiler)	Shunt closes. Burner stops.	Continuous contact with the sensor.	<ul style="list-style-type: none"> ■ Open-circuit or short-circuit on sensor input. ■ Defective sensor

Alarm no.	Alarm text on the display	Cause	Heat pump action.	Resets automatically when	May be due to
136*	Sensor flt:EP21 BT2	No contact with the sensor. (Temperature sensor, Heating medium flow, Climate system 2)	No function.	Continuous contact with the sensor.	<ul style="list-style-type: none"> ▪ Open-circuit or short-circuit on sensor input. ▪ Defective sensor
137*	Sensor flt:EP22 BT2	No contact with the sensor. (Temperature sensor, Heating medium flow, Climate system 3)	No function.	Continuous contact with the sensor.	<ul style="list-style-type: none"> ▪ Open-circuit or short-circuit on sensor input. ▪ Defective sensor
138*	Sensor flt:EP23 BT2	No contact with the sensor. (Temperature sensor, Heating medium flow, Climate system 4)	No function.	Continuous contact with the sensor.	<ul style="list-style-type: none"> ▪ Open-circuit or short-circuit on sensor input. ▪ Defective sensor
139*	Err: EQ1-BT64	No contact with the sensor. (Temperature sensor, Cooling supply line)	Cooling blocked. Cooling shunt closes.	Continuous contact with the sensor.	<ul style="list-style-type: none"> ▪ Open-circuit or short-circuit on sensor input. ▪ Defective sensor
140	Compr.phs 1	Phase 1 to the compressor has been briefly absent.	Compressor blocked.	The phase returns.	Any check of <ul style="list-style-type: none"> ▪ Phase fuses ▪ Cable connections
141	Compr.phs 2	Phase 2 to the compressor has been briefly absent.			
142	Compr.phs 3	Phase 3 to the compressor has been briefly absent.			
160	Lo Bri out	Brine out has reached set min temperature.	Compressor blocked.	The brine temperature has been raised 1 C at brine in during a start attempt.	Possible incorrect settings
161	High Brine in	Brine out has reached set max temperature.	Compressor blocked.	The brine temperature has fallen 1°C at brine in during a start attempt.	Possible incorrect settings
162	Hi cond. out	Brine out has reached max permitted temperature.	Compressor blocked.	The heating medium temperature has been raised 2 °C at heating medium in during a start attempt.	Possible incorrect settings
163	High cond. in	Condenser in has reached max permitted temperature.	Compressor blocked.	The heating medium temperature has fallen 2 °C at heating medium in during a start attempt.	Possible incorrect settings

Alarm no.	Alarm text on the display	Cause	Heat pump action.	Resets automatically when	May be due to
170	Comm.fault In	Communication fault has occurred with entry card. AA3.	Only information	Communication has resumed.	Check any communication cables and connections.
171	Com.flt Base	Communication fault has occurred with base card AA2 or AA26.	Only information	Communication has resumed.	Check any communication cables and connections.
172	Comm.flt MC	Communication fault has occurred with soft start card AA10.	Only information	Communication has resumed.	Check any communication cables and connections.
173-179*	Com.err. Acc.	Communication fault has occurred with the accessory card.	Accessory is blocked	Communication has resumed.	<ul style="list-style-type: none"> ▪ Defective communication cables. ▪ Incorrectly set dip switch.
180	Anti-freeze	<ul style="list-style-type: none"> ▪ Outdoor temperature is below +3 °C at the same time as heating is blocked. ▪ Outdoor temperature is below +3 °C at the same time as the compressor is blocked by the alarm and additional heat is not permitted. ▪ Temperature sensor, outdoor (BT1) is missing. 	Heating is permitted and the calculated supply temperature is set to min supply temperature.	The outdoor temperature exceeds +3 °C or heating is permitted.	Incorrect settings
181*	Problems at periodic increasing	Periodic hot water increase did not reach the stop temperature in 5 hours.	Only information	Information is shown in the display.	Incorrect settings
182	Load monitor active	Measured power consumption exceeds set fuse size in menu 5.1.12.	The heat pump disconnects the electrical steps for the electrical additional heat step by step.	Power consumption reduced to below set fuse size in menu 5.1.12.	-
184*	Filter alarm	Time set in menu 5.3.1 has expired.	Only information	-	-
185-195*	Com.err. Acc.	Communication fault has occurred with the accessory card.	Accessory is blocked	Communication has resumed.	<ul style="list-style-type: none"> ▪ Defective communication cables. ▪ Incorrectly set dip switch.

Alarm no.	Alarm text on the display	Cause	Heat pump action.	Resets automatically when	May be due to
196-199*	Com.err. RMU	Communication fault has occurred with room unit.	Only information	Communication has resumed.	Check any communication cables and connections.

* Accessory needed.

6 Item register

Item register

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