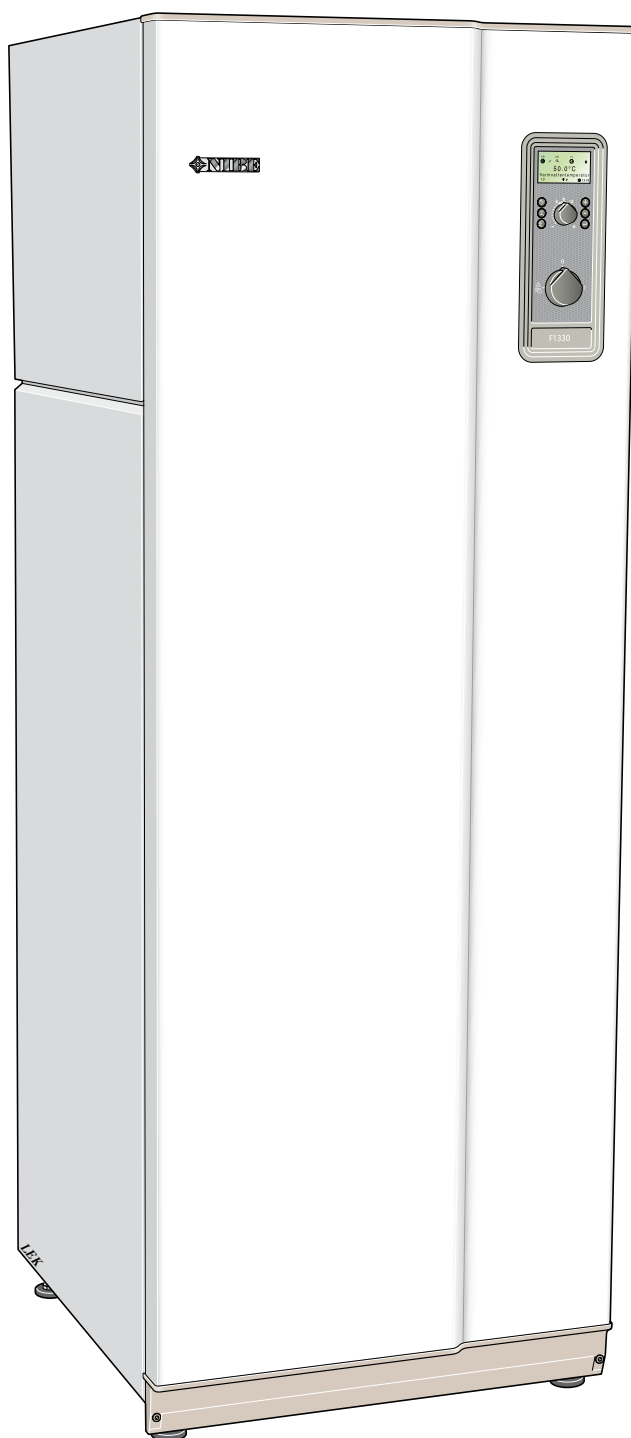




MOS GB 0909-1
F1330
031385

INSTALLATION AND MAINTENANCE INSTRUCTIONS

NIBE F1330



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In order to get the ultimate benefit from your heat pump F1330 you should read through this Installation and Maintenance Instruction.

F1330 is a heat pump for heating large properties such as apartment buildings and industrial properties. Soil, rock or lakes can be used as heat source.

F1330 is a Swedish made quality product offering a long life span and safe operation.

The Installation and Maintenance Instructions also takes up accessories for F1330 and the pictures show the heat pump with accessories installed.

Completed by the installer when the heat pump is installed

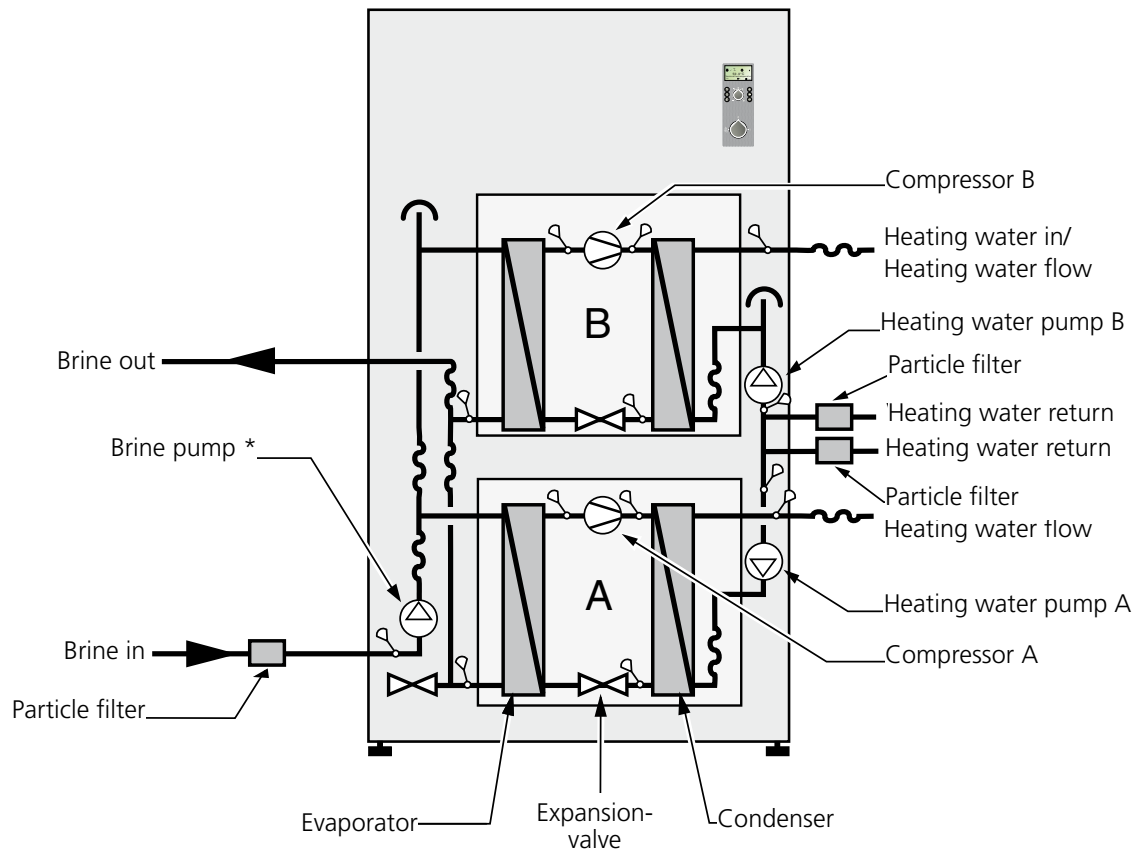
Type designation / serial number			
F1330-__ kW / _ _ _ _ _			
Installation date			
Installer			
Type of brine – Mixing proportion/freezing point			
Active drilling depth/collector length			
Settings			
Menu		Factory setting	Menu
			Factory setting
0.2.1	Oper.type Master	Off	2.1 Curve slope
0.2.2	Oper.type slave 1	Off	2.2 Offset heating curve
0.2.3	Oper.type slave 2	Off	6.1.1 Op-mode external CP
0.2.4	Oper.type slave 3	Off	9.1.1 Exp.card 11
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0.2.6	Oper.type slave 5	Off	9.1.3 RCU
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			9.1.7 Fixed condensing
			9.1.8 Additive
			9.1.9 Extra collector
			9.1.10 Cooling
			9.1.11 Room control mode
Date_____ Sign_____			

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

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

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System description



* The brine pump for 60 kW is supplied and installed externally outside the heat pump.

Principle of operation

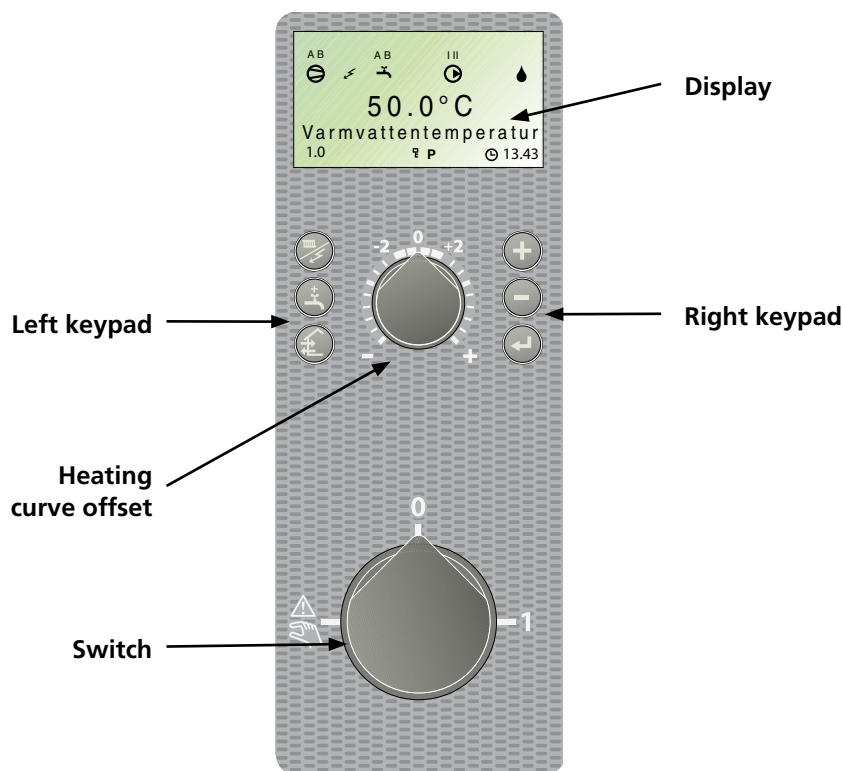
F1310 consists of two heat pump modules and a CPU with a display to control the heat pump and any additional heating. F1330 has integrated circulation pumps (except 60 kW which has an external brine pump) making it easy to connect to the brine and heating medium circuits.

The energy from the heat source is taken up via a closed collector system in which a mixture of water and anti-freeze circulates. The heat source can be rock, soil, lake, exhaust air or other process heating.

Ground water can also be used as a heat source. This requires an intermediate heat exchanger.

The brine emits its heat to the refrigerant in the heat pump's evaporator. It then vaporises and is compressed in the compressor. The refrigerant, with its increased temperature, is led into the condenser where it emits its energy to the heating medium circuit.

Front panel



Display

First row:

- Compressor symbol**
- A B** Indicates that one of the compressors in the heat pump is operational.
- A** indicates that compressor A (lower module) is operational.
- B** indicates that compressor B (top module) is operational.

- Additional symbol**
- Indicates when immersion heater is operational.

- Extra hot water symbol**
- A B** Indicates when the Extra hot water function is active.
- A** indicates that a temporary temperature increase is activated.
- B** indicates that a time determined temperature increase, for example periodic, is activated.

- Circulation pump symbol**
- I II** I indicates that the heating medium pump A is operational.
- II** indicates that the heating medium pump B is operational.

- Oil boiler symbol**
- Indicates that the oil boiler is activated.

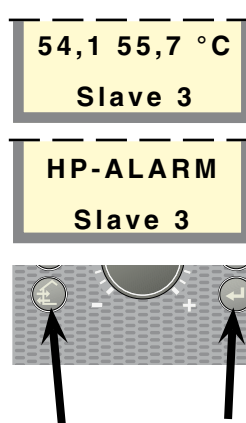
Second row: Value of the current parameter.

Third row: Description of current display parameter.

Fourth row: Shows menu numbers, key lock, clock symbol and time.

Key lock symbol The program ignores the enter button being pressed when key lock is activated, this prevents the settings from being changed unintentionally. Key lock is activated in the main menus by pressing the plus and minus buttons simultaneously. The key symbol will then be shown on the display. The same procedure is used to deactivate the key lock.

Timer symbol The symbol becomes visible when a timer function is selected, for example, periodic lowering of the flow-temperature or time setting for extra hot water.



Screen saver mode

In screen saver mode, you can see any alarms as well as the flow temperatures currently given by the compressors (VBFA and VBFB) and whether the heat pump is a Master or Slave. The screen saver is deactivated by pressing the enter button and the button in the lower left for approximately 8 seconds. Menu 1.0 is then displayed. The screen saver comes on automatically 30 minutes after the last button was pressed and when starting the heat pump.

Switch

with three positions **1 – 0 –** 

- 1** Normal mode. All control functions connected.
- 0** Heat pump off.

 See the section, Actions with operating disturbances > Standby mode.

The power switch must not be turned to either the "1" or "  " position before the heating system has been filled.

Offset heating curve



The Offset heating curve knob is used to change the heating curve's parallel offset and in doing so the room temperature. Turning clockwise increases the room temperature. When the knob is turned, menu 2.0 is shown on the display and the value for the calculated flow temperature changes.

Note! Only the knob on the Master unit can be used for this setting.

Right keypad



The **plus button** is used to browse through the menu system (forwards) or raise the value of the selected parameter.

See the section Control > General.



The **minus button** is used to browse through the menu system (backwards) or lower the value of the selected parameter.

See the section Control > General.



The **enter button** is used to select a sub menu in the menu system, to activate a parameter change as well as confirm a parameter change.

See the section Control > General.

Left keypad



The desired **operating mode** with regard to permitting/blocking of the circulation pump and additional heating is set using the Operating mode button. The selection does not need to be confirmed with the enter button.

The current operating mode is shown on the display when the button is pressed and the mode changes when you continue to press the button. The display returns to the normal display mode once the enter button is pressed.

The different operating modes are:

Auto mode:

F1330 automatically selects the operating mode by taking the outdoor temperature into account. The circulation pumps and additional heating are permitted to be operational when the need arises.

Summer mode:

Only hot water production using F1330. The circulation pumps and additional heating are blocked. However, when Extra hot water is activated, the additional heat (XVV) can be connected.

Spring/Autumn mode:

Only production of heating and hot water using F1330. The circulation pumps are operational. Additional heat blocked. However, when Extra hot water is activated the additional heat (XVV) can be connected.

Only additional heat:

Compressors blocked. The function can also be activated/deactivated by pressing the "operating mode button" for 7 seconds.



Extra hot water

When the button is pressed the current Extra hot water position is shown on the display, further pressing changes the position in the increments 24, 12, 6 and 3 hours and off. When Extra hot water is activated, the hot water temperature is increased to a higher level (set on menu 1.4) than normal. The temperature then returns to the normal value. The function is active when an A is displayed above the Extra hot water icon.



See screensaver mode.

Room temperature

Automatic heating control system

The indoor temperature depends on several factors. Sunlight and heat emissions from people and household machines are normally sufficient to keep the house warm during the warmer parts of the year. When it gets colder outside, the heating system must be started. The colder it is outside, the warmer radiators and floor heating system must be.

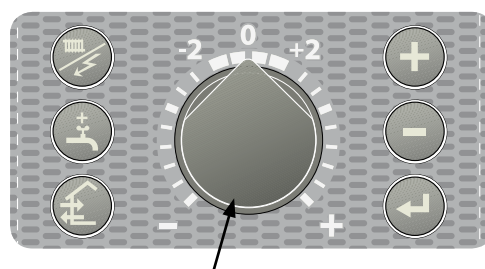
Heat production is usually controlled using the floating condensing principle. This means that the temperature level needed for heating at a given outside temperature is produced on the basis of values taken from sensors for outside temperature and flow temperature. This adjustment is made automatically, however the basic settings must first be made on the boiler, see the section Room temperature > Default setting.

Default setting

The basic heating is set using menu 2.1 and with the Offset heating curve knob.

If the required room temperature is not obtained, readjustment may be necessary.

NOTE! Wait one day between settings so that the temperatures have time to stabilise.



Heating
curve offset

Readjusting the default settings

Cold weather conditions

When the room temperature is too low, the Curve slope value is increased in menu 2.1 by one increment.

When the room temperature is too high, the Curve slope value is lowered in menu 2.1 by one increment.

Warm weather conditions

If the room temperature is low, turn the Heating curve offset knob one step clockwise.

If the room temperature is high, turn the Heating curve offset knob one step anticlockwise.

Changing the room temperature manually

If you want to temporarily or permanently lower or raise the indoor temperature relative to the previously set temperature, turn the Heating curve offset knob anticlockwise or clockwise. One to three lines approximately represents a 1 degree change in room temperature.

NOTE! An increase in the room temperature may be inhibited by the radiator or floor heating thermostats, if so these must be turned up.

Setting the heating controls

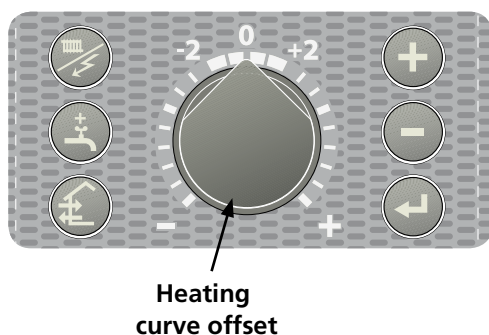
Setting using diagrams

The heating control system of the F1330 is controlled by the outside temperature. This means the flow temperature is regulated in relation to the current outdoor temperature.

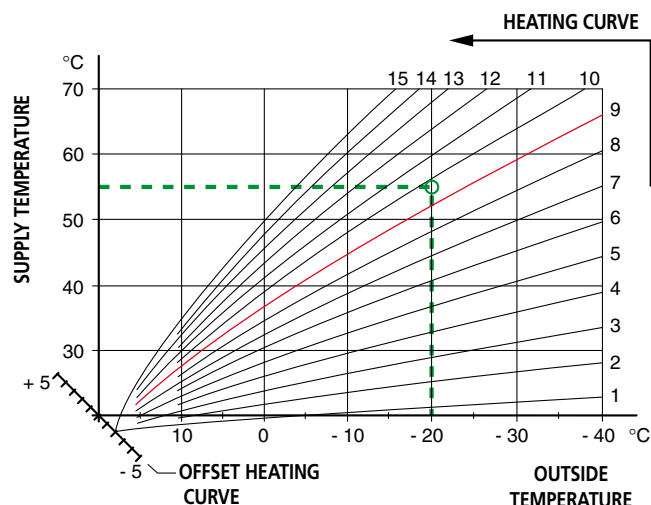
The relation between the outdoor temperature and flow temperature is set in menu 2.1, Curve slope.

The diagram is based on the dimensioned outdoor temperature in the area and the dimensioned supply temperature of the heating system. When these two values meet, the heating control's curve slope can be read.

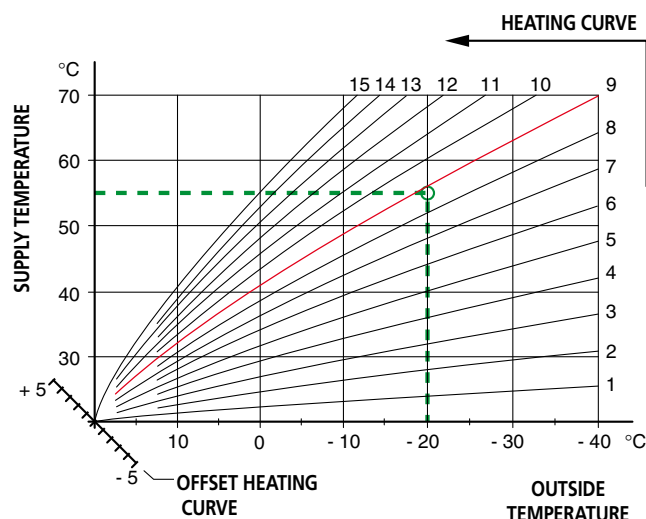
The Heating curve offset knob is then set on the Master unit. A suitable value for underfloor heating is -1 and for a radiator system -2.



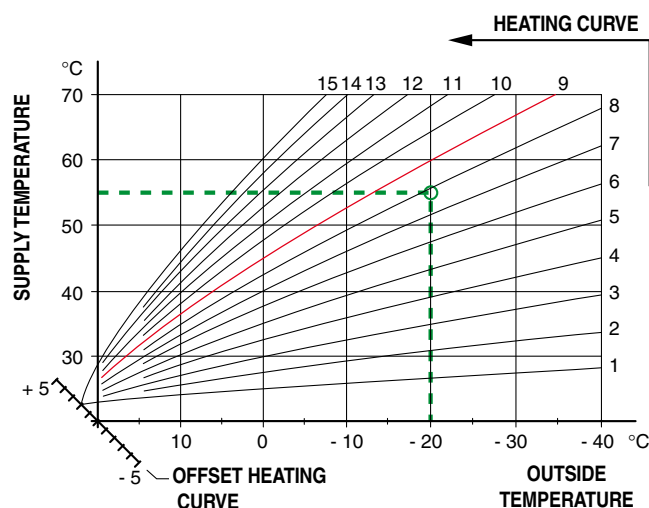
Offset heating curve -2



Offset heating curve 0



Offset heating curve +2





General information for the installer

Transport and storage

The F1330 must be transported and stored upright and dry.

Installation

The F1330 must be installed on a firm surface, preferably a concrete floor or a concrete foundation in a boiler room or a separate equipment room. Avoid installing it in or adjacent to a sound-sensitive room. Wherever the unit is located, any wall that backs on to a bedroom should be fitted with sound insulation.

Master / Slave

Several F1330s can be interconnected to work together. This is done by selecting one heat pump as the Master and the others as Slaves. External units, e.g. oil boiler, are connected to the Master unit. Each Slave is given a unique address for communication with the Master unit. See the section Description of functions - Start up > Master/Slave.

External control (e.g. DUC)

F1330 can be controlled up to a certain point using signals from an external system (e.g. DUC). See the section Description of functions - External control.

External communication (RCU)

The NIBE RCU communication unit enables F1330 to be controlled and monitored using a computer or a principle system (SCADA-system), which can read the ModbusTCP-protocol, in a local network or via the internet.

The integrated GSM module also enables control and monitoring by sending text messages from a mobile phone. In the event of an alarm, the RCU can send SMS/E-mails to the programmed recipient. For the GSM function to work in the RCU, the communications module must be equipped with a valid GSM subscription. This may for example be a cash card or a special telematics subscription.

It is possible to connect two independent switch functions to the RCU to detect external events such as a movement alarm or freezing protection.

Collectors

Type	Soil heat recommended collector length	Rock heat recommended active drilling depth
22	3 x 350 - 4 x 400 m	2 x 180 - 3 x 180 m
30	3 x 450 - 4 x 450 m	3 x 150 - 5 x 150 m
40	4 x 500 - 6 x 500 m	4 x 170 - 5 x 200 m
60	6 x 450 - 8 x 450 m	6 x 150 - 8 x 180 m

The maximum length of each loop is 500 metres.

The hose normally used is PEM hose 40 x 2.4 PN 6.3.

The length of the collector hose varies depending on the rock/soil conditions and on the heating system, e.g. radiators or underfloor heating.

Collectors are always connected in parallel, with some means of adjusting the flow.

For surface soil heat, the hose should be buried at a depth of about 1 metre and the distance between the hoses should be at least 1 metre.

For rock heat, there must be a distance of at least 15 meters between boreholes.

Inspection of the installation

In accordance with applicable regulations, heating installations must undergo an installation inspection before being commissioned. The inspection must be carried out by a suitably qualified person. The above applies to closed heating systems. If the heat pump is replaced, the installation must be inspected again.

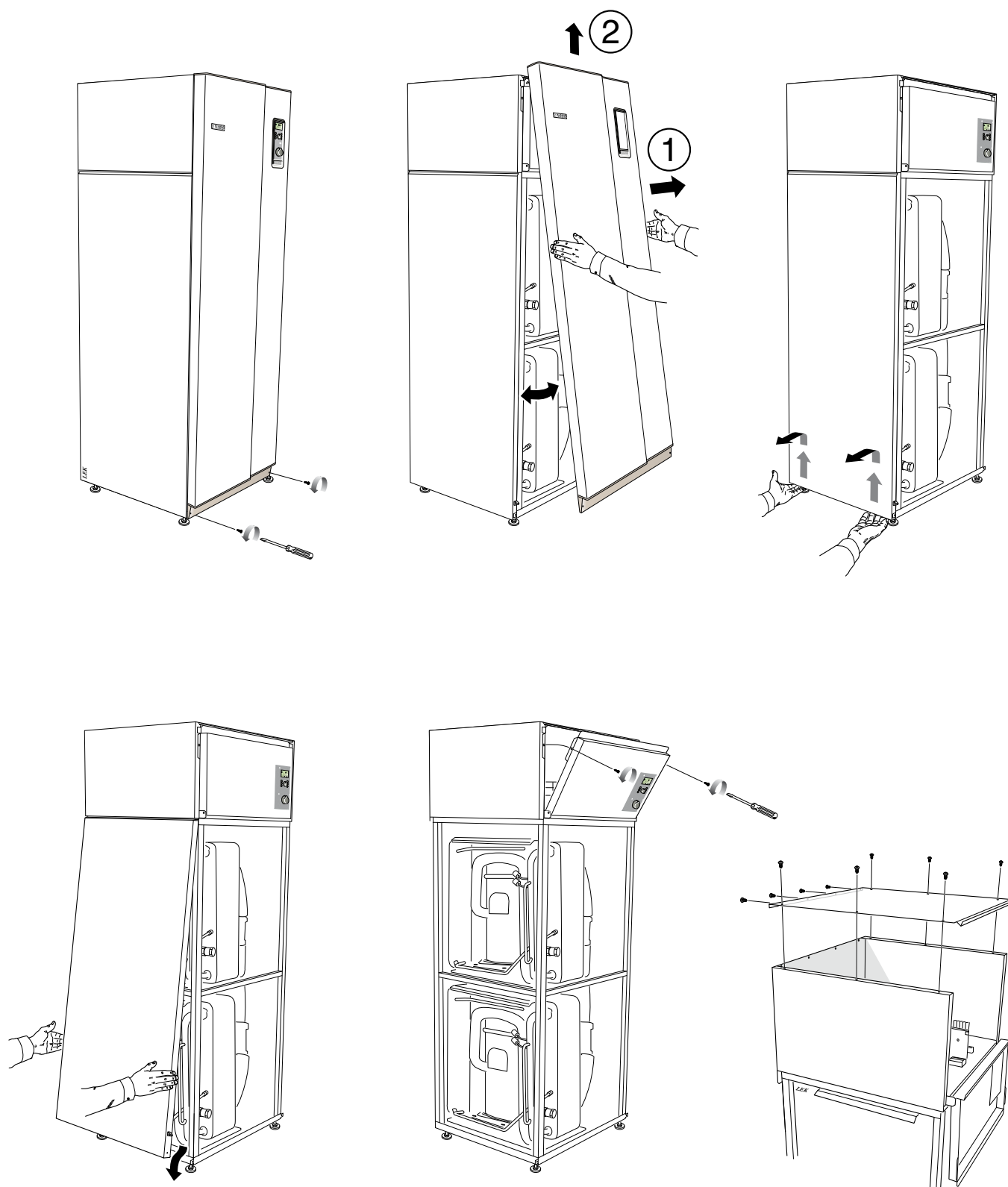
NOTE!

The sensor and communication cables must not be routed close to the power cable.

This applies to all external sensors and all communication cables.

When cable conduit is used for the outdoor sensor this should be sealed to prevent condensation in the outdoor sensor capsule.

Removing the covers



Pipe connections

General

Pipe installation must be carried out in accordance with current norms and directives. F1330 can work up to a return temperature of approx. 58 °C and an outgoing temperature from the heat pump of approx. 65 °C. When F1330 is not equipped with shut off valves, these must be fitted outside of the heat pump to assist future service work.

Pipe connections (heating medium)

Pipes are connected at the rear of the heat pump. The necessary safety equipment, shutoff valves (fitted as close as possible to the heat pump), and the particle filter and flexible hoses supplied must be fitted.

When connecting to a system with thermostats on all radiators/coils, a relief valve must be fitted, or some of the thermostats must be removed to ensure sufficient flow.

The unit is designed to allow hot water production with one or two heat pump modules. However, this requires different pipework and a different electrical installation.

Pipe connections (brine)

When dimensioning the collector, consideration must be given to the geographical location, type of rock and ground and the degree of coverage provided by the heat pump.

When installing the collector hose, ensure it rises constantly towards the heat pump to avoid air pockets. If this is not possible, install high points to vent the air.

All brine pipes in heated rooms must be insulated against condensation.

As the temperature of the collector system can fall below 0 °C it must be protected against freezing down to -15 °C. One litre of ready mixed brine per meter of collector hose (applies when using PEM-hose 40 x 2.4 PN 6.3) is used as a guide value when making the volume calculation.

The collector system should be labelled to show what antifreeze has been used.

Shut-off valves should be installed as close to the heat pump as possible. Fit a particle filter to the incoming pipe.

In the case of connection to an open groundwater system, an intermediate frost-protected circuit must be provided, because of the risk of dirt and freezing in the evaporator. This requires an additional heat exchanger.

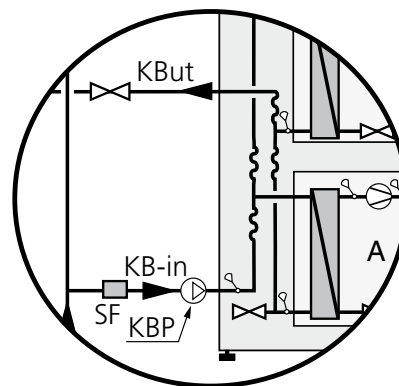
NOTE!

The pipe system needs to be flushed out before the heat pump is connected so that debris cannot damage component parts. This applies to both hot and cold sides.

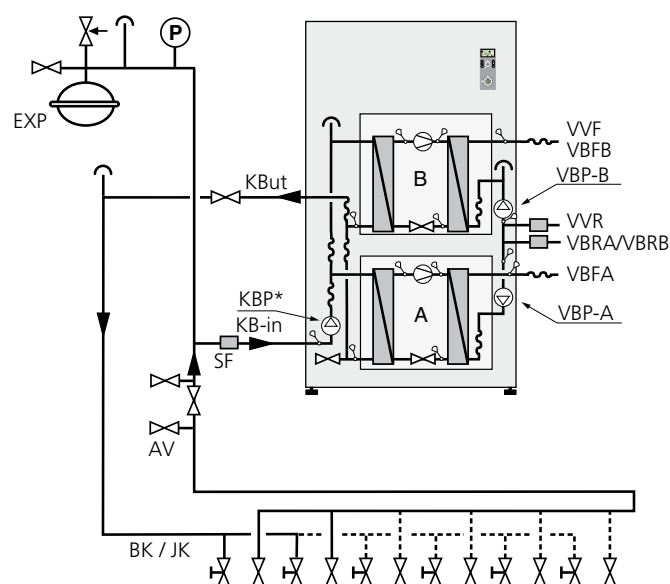
NOTE!

The heat pump's pipe must not be soldered directly, due to internal sensors. Compression ring or press coupling should be used.

Connecting external brine pump (60 kW only)



The enclosed external brine pump for F1330 -60kW is installed externally outside the heat pump on incoming connection (4) (see image above).



AV	Shutoff valve
BK	Rock collector
EXP	Level vessel
JK	Soil collector
KB-in	Brine in
KB-ut	Brine out
SF	Particle filter

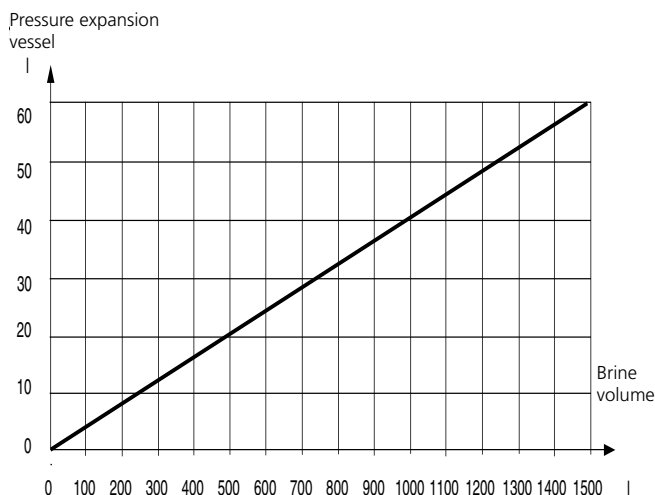
*The brine pump for 60 kW is supplied and installed externally outside the heat pump.

Pipe connections

Pressure expansion vessel

The brine circuit should be fitted with a pressure expansion vessel. If there is a level vessel, this should be replaced. The brine side should be pressurised to at least 0.5 bar.

The pressure expansion vessel should be dimensioned as set out in the diagram, to prevent operating disturbances. The pressure expansion vessel covers the temperature range from -10 °C to +20 °C at a pre-pressure of 0.5 bar and the safety valve's opening pressure 3 bar.

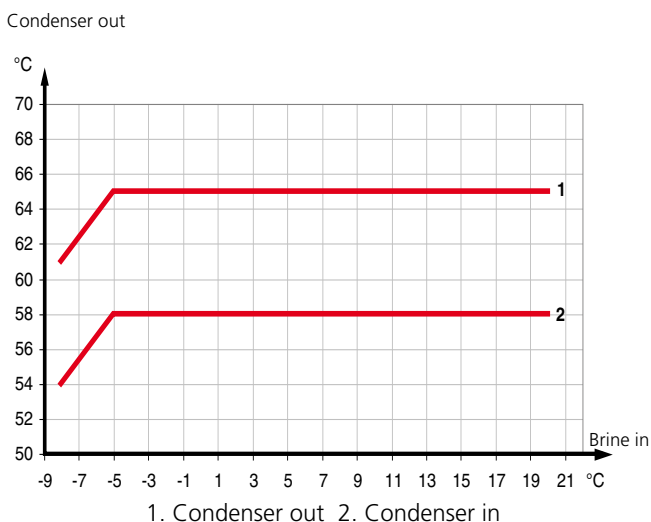


Limiting condenser out and condenser in

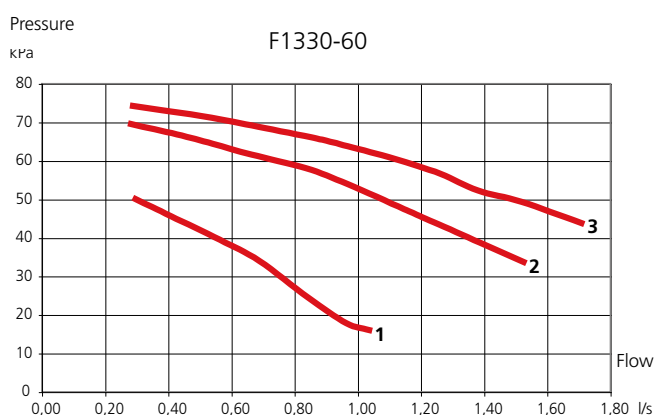
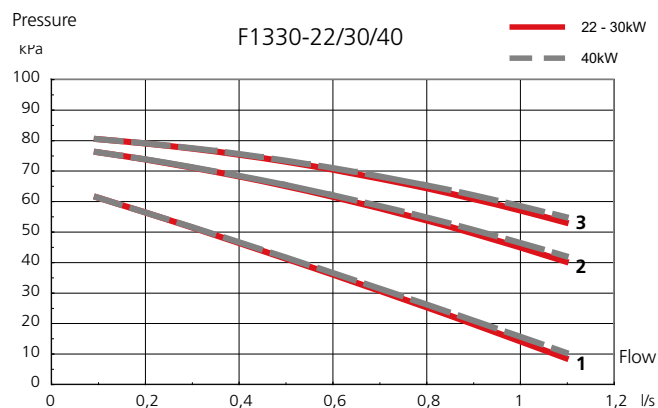
For HTF in hotter than -5 °C, limiting of max condenser out 65 °C and max condenser in 58 °C.

For HTF in colder than -5 °C, max condenser out and max condenser in lowers automatically, according to diagram, additional heat maintains desired supply temperature.

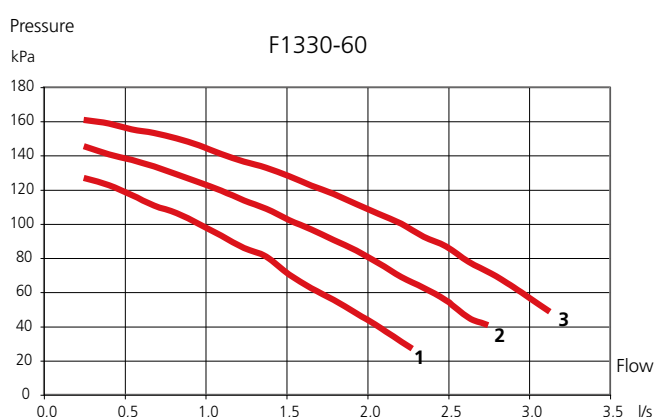
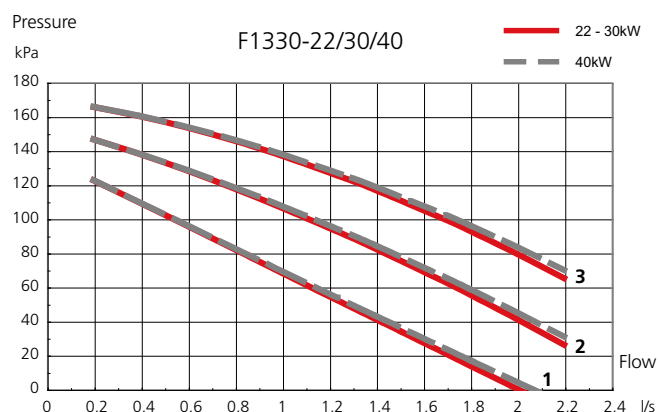
For HTF in lower than -8 °C, the compressor stops and the desired supply temperature is only maintained by additional heat.



Available pressure, heating medium side



Available pressure, collector side (ethanol 28 %)



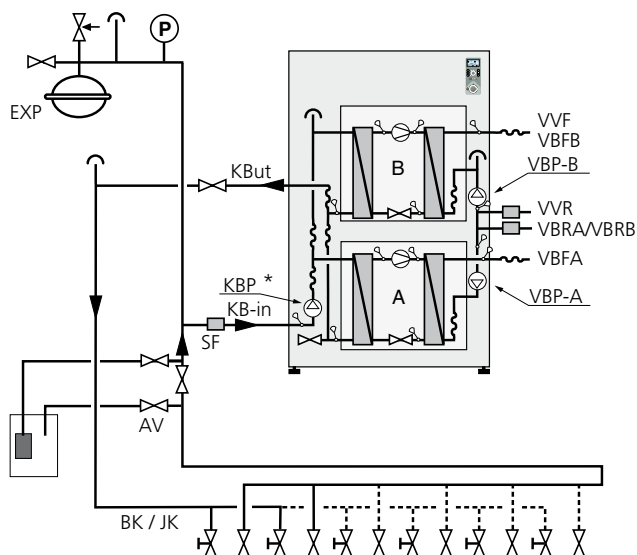
Filling and venting the collector system

The brine circuit must be supplied with a pressure expansion vessel. If there is a level vessel this should be replaced. The brine side should be pressurised to at least 0.5 bar.

The pressure expansion vessel should be dimensioned as set out in the diagram, to prevent operating disturbances. The pressure expansion vessel covers the temperature range from -10 °C to +20 °C at a pre-pressure of 0.5 bar and the safety valve's opening pressure 3 bar.

To fill the collector system, mix antifreeze with water in an open container which connect with filling pump and hoses as illustrated. The brine should be protected from freezing down till -15 °C.

- The valve on the main pipe between service connections is closed.
- To fill, start the pump in the filling vessel and allow it to run until the fluid comes back in the return hose.
- The fluid can circulate via the mixing vessel until fluid, without air, returns to the return hose.
- Stop the filling pump and clean the particle filter. Start the filling pump again.
- Open the valve on the main pipe between the service branches while the filling pump is still operational (to release the air between the branches).
- Close the valve on the return hose.
- Pressurise the system (to max 3 bar) with the filling pump.
- Close the filling valve and stop the filling pump.



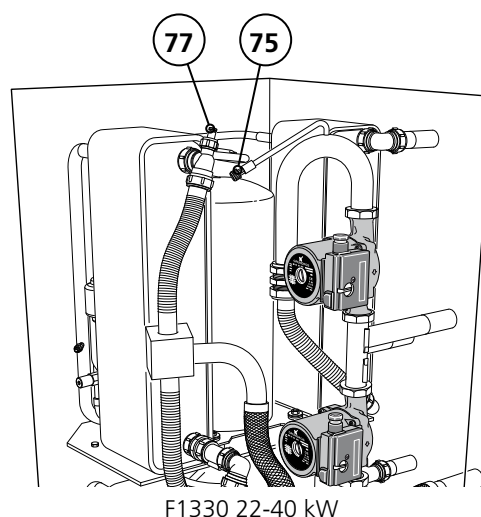
* The brine pump for 60 kW is supplied and installed externally outside the heat pump..

AV	Shutoff valve	KB-in	Brine in
BK	Rock collector	KB-ut	Brine out
EXP	Level vessel	KBP	Brine pump
JK	Soil collector	SF	Particle filter

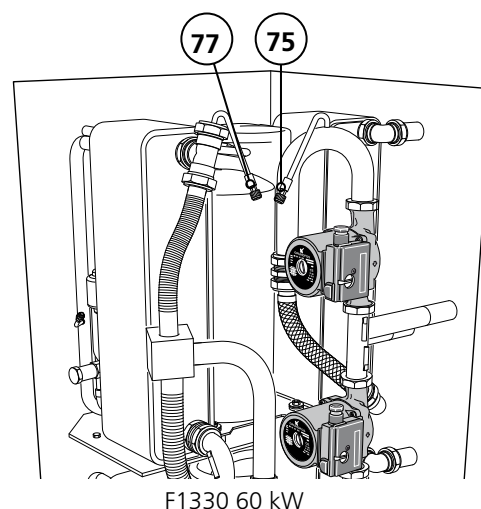
Filling the heating medium system

The heating medium system is filled with water until the required pressure is reached and then vented.

Internal venting valves



F1330 22-40 kW



F1330 60 kW

Readjusting, heating medium side (75)

Air is initially released from the hot water and venting may be necessary. If bubbling sounds can be heard from the heat pump, the entire system requires further venting. When the system has stabilised (correct pressure and all the air removed) the heating controls can be set at the required value.

Readjusting, brine side (77)

Check that all air is removed from the collector system by opening the venting valves. The pressure in the brine circuit is checked with the help of pressure gauges. Filling of collector system is done by pumping ready mixed brine through the filling valve.

Venting and filling are repeated until all the air has been removed and the correct pressure (0.5 - 3 bar) has been obtained.

NOTE!

To access and change the speed of the brine pump (22-40 kW) the circulation pump's distribution box must be opened.

The speed is set to "3" (maximum speed) upon delivery.

Docking

Docking

General

F1330 can be installed in several different ways, some of which are described below.

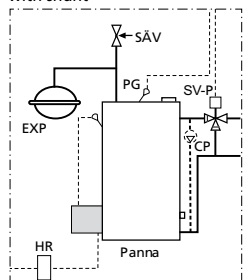
More docking options can be found at <http://www.nibe.com>

NOTE!

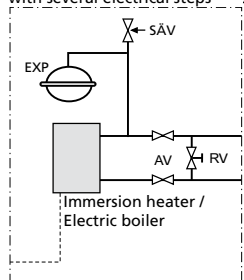
The safety equipment must be installed in accordance with current regulations for all docking options.

Example F1330 docked with an oil boiler/pellet boiler and water heater (floating condensing)

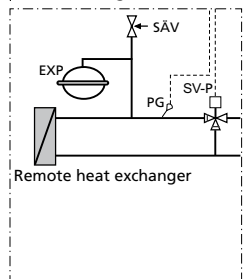
Oil-fired boiler or electric boiler with shunt



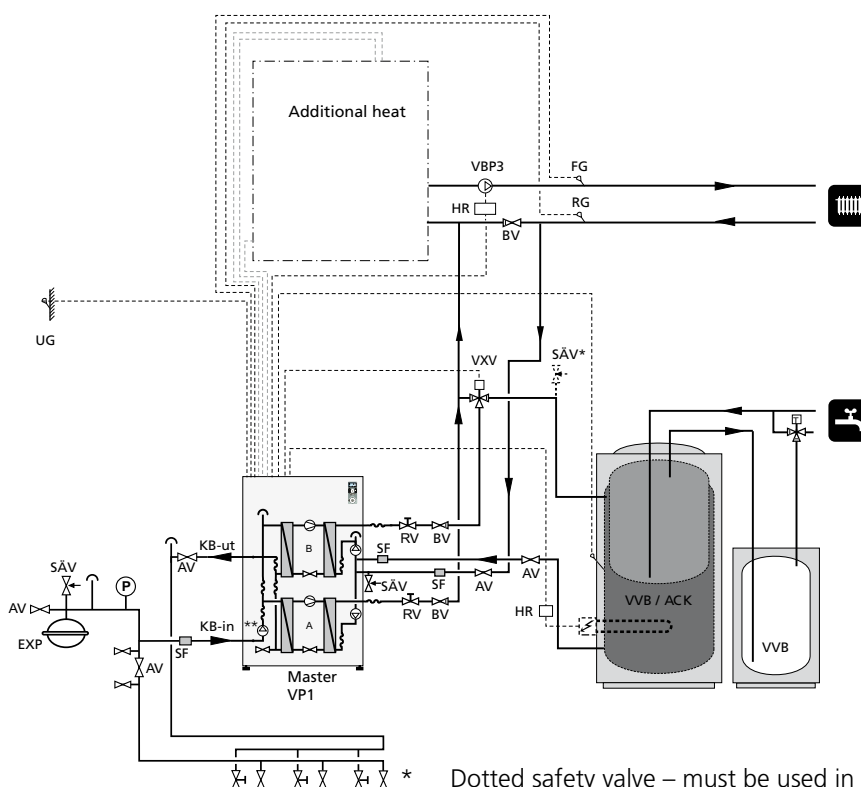
Smaller electric boiler with several electrical steps



District heating



Remote heat exchanger



F1330 gives priority to hot water charging at half power (heat pump module B) via a shuttle valve (RV). When the water heater/accumulator tank (VVB/ACK) is fully charged the shuttle valve (VXV) switches over to the heating circuit. When there is a heat requirement, module A starts first. For larger requirements, module B takes care of the heating. The boiler is connected automatically when the energy demand exceeds the capacity of the heat pump and the shunt (SV-P) is activated when the temperature on the boiler sensor (PG) is above 55 °C.

If VVB/ACK is fitted with an immersion heater (IU) and a junction box (K11) the Extra hot water function can be used. A by-pass contactor is recommended.

A	Heat pump module A
AV	Shutoff valve
B	Heat pump module B
BV	Non-return valve
EXP	Expansion tank with necessary safety equipment

* Dotted safety valve – must be used in connection with immersion heater.

** The brine pump for 60 kW is supplied and installed externally outside the heat pump.

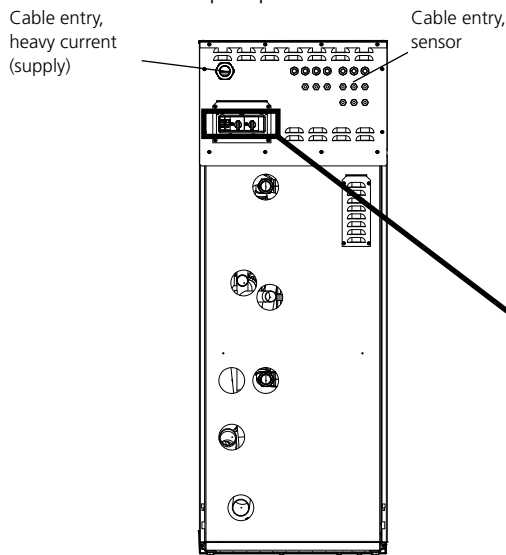
FG	Flow sensor
HR	Auxiliary relay /Contactor with by-pass
KB-in	Brine in
KB-ut	Brine out
PG	Boiler sensor
RG	Return sensor
RV	Control valve
SF	Particle filter
SV-P	Shunt
SÄV	Safety valve
UG	Outside temperature sensor
VBP3	Heating medium pump 3
VVB	Water heater
VVB/ACK	Accumulator with water heater
VVG	Hot water sensor
VXV	Shuttle valve

Electrical connection

Electrical installation

The cable for incoming power shall enter from the rear as set out in the figure.

The sensor inputs and communication connection are of the type SELV. **Sensors cables must not be routed together with power cables.** Cables may be taken out from the rear of the heat pump.



NOTE!

Electrical installation and servicing must be carried out under the supervision of a qualified electrician in accordance with the stipulations in force.

Connection of external sensors

See respective Description of functions for connection of external sensors.

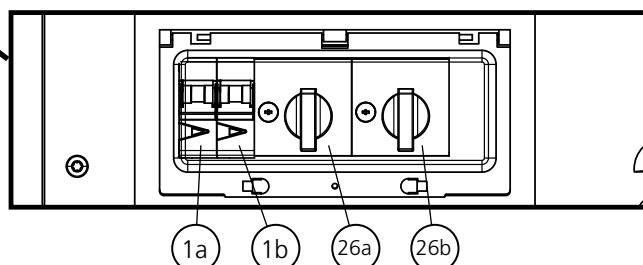
For example, for the flow sensor (FG), return sensor (RG), outdoor sensor (UG) see Description of functions - Basic functions > Heat production. For the hot water sensor (VVG), see Description of functions - Basic functions > Hot water production.

NOTE!

The sensor and communication cables must not be routed close to the power cable.

This applies to all external sensors and all communication cables.

When cable conduit is used for the outdoor sensor this should be sealed to prevent condensation in the outdoor sensor capsule.



Miniature circuit-breaker

Control, circulation pumps and their wiring, are internally fuse protected with miniature circuit breakers -F1 (1a) and -F2 (1b).

Control is fused by -F1 (1a) and the circulation pumps with their cabling are fused by -F2 (1b).

Resetting

The miniature circuit breakers -F1 (1a) and -F2 (1b) can be accessed on the reverse of the heat pump (see image).

Motor cut-out

The heat pump is equipped with two motor cut-outs. If the current becomes too high in any of the compressors, the motor cut-outs cut the current to the affected compressor.

Motor cut-out -Q1A (26a) cuts the power supply to compressor A.

Motor cut-out -Q1B (26B) cuts the power supply to compressor B.

Resetting

The motor cut-outs-Q1A (26a) and-Q1B (26b) can be accessed on the reverse of the heat pump (see image). If a cut-out deploys, it can be reset by turning the knob to the vertical position.

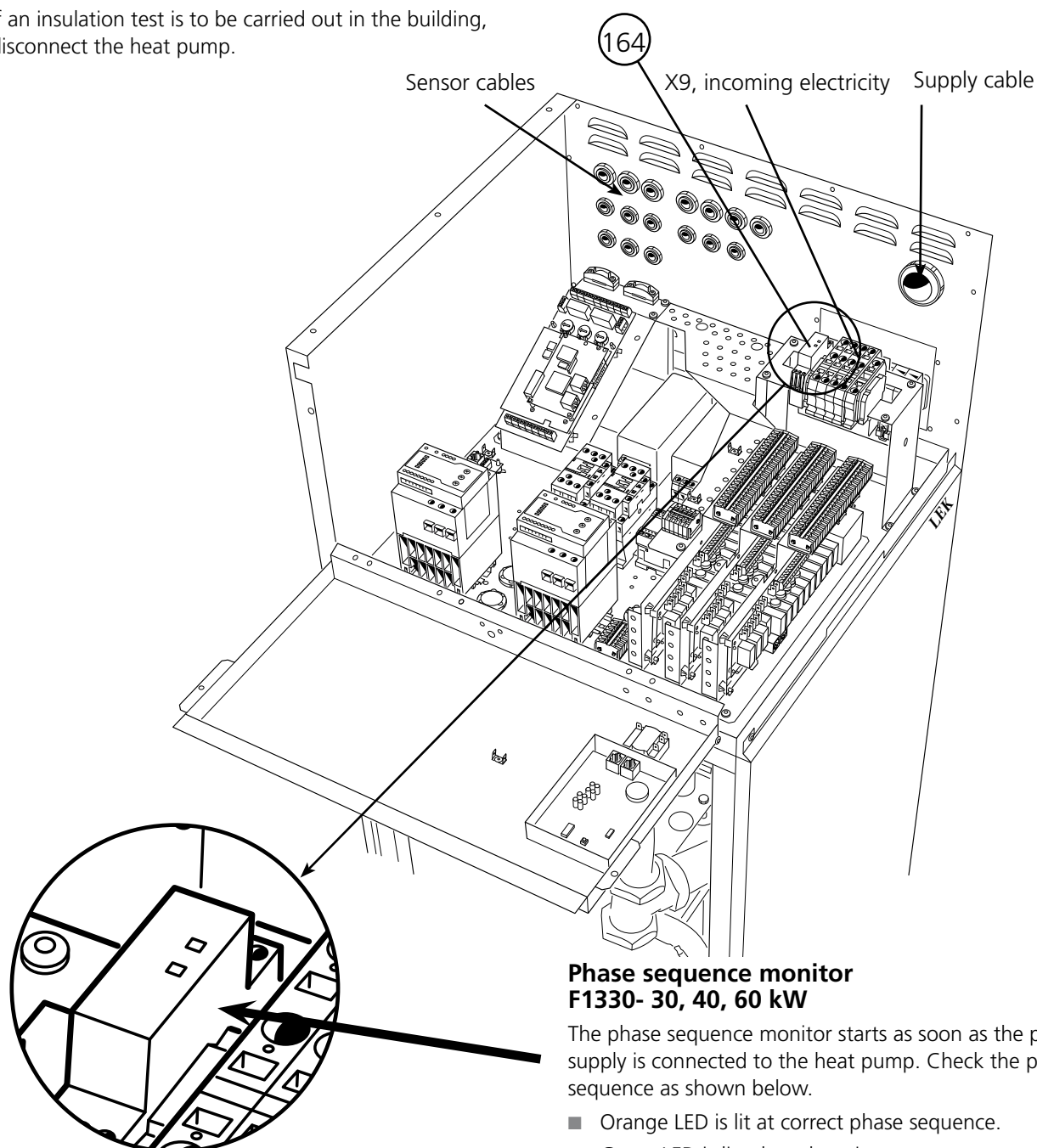
NOTE!

Reset the miniature circuit-breaker and the motor cut-out. They may have tripped during transportation.

Electrical connection

Connection

- A heat pump must not be connected without the permission of the electricity supplier and must be connected under the supervision of a qualified electrician.
- If an miniature circuit-breaker is used this should have a motor characteristic D (compressor operation). For MCB size see Technical Specifications.
- When the building is equipped with an earth-fault breaker, the heat pump should be equipped with a separate one
- The F1330 does not include an isolator switch on the incoming electrical supply. The installation must be preceded by a circuit-breaker with at least a 3 mm breaking gap.
- If an insulation test is to be carried out in the building, disconnect the heat pump.
- Connect the heat pump to the terminal block X9, 400 V 3-phase, neutral + earth via a distribution board with fuses. Where there is more than one heat pump, each unit must have a separate supply.
- Continue the installation by carrying out the inspection set out in Description of functions - Start up > Inspection.
- **NOTE! It is not permitted to fit additional components in the electrical connection area.**
- **Note that F1330 provides 230V control signals that are intended to control external contactors and not to drive pumps.**



Phase sequence monitor F1330- 30, 40, 60 kW

The phase sequence monitor starts as soon as the power supply is connected to the heat pump. Check the phase sequence as shown below.

- Orange LED is lit at correct phase sequence.
- Green LED is lit when there is power.
- If there is a fault in the phase sequence, the heat pump triggers a brine alarm in both modules.

The heat pump in the picture is fitted with accessories.

Description of functions - Start up

Inspection

This inspection should be done on all heat pumps in the system individually. Other heat pumps should be switched off when the inspection is made.

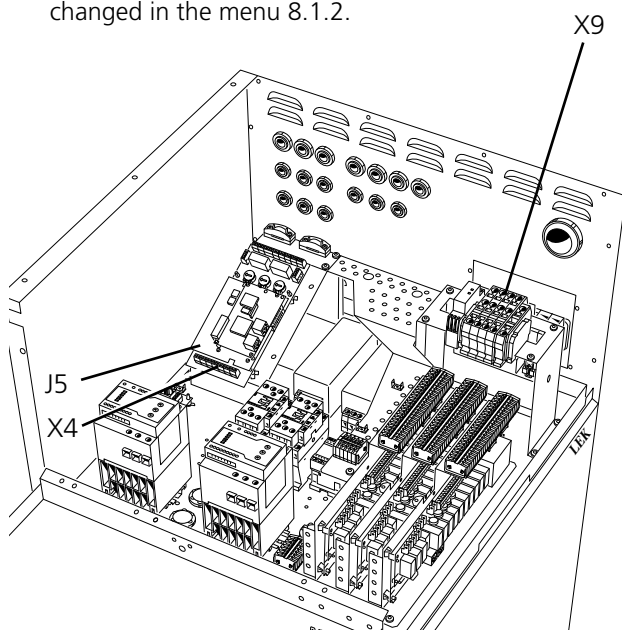
When F1330 is switched off during the inspection, the Service mode should be reselected from menu 8.1.1 to gain access to menus that are not normally accessible.

NOTE!

F1330-60 must be powered and the switch in position 1 for at least 12 hours before the compressors can be started. This is because the compressor oil must reach the correct operating temperature.

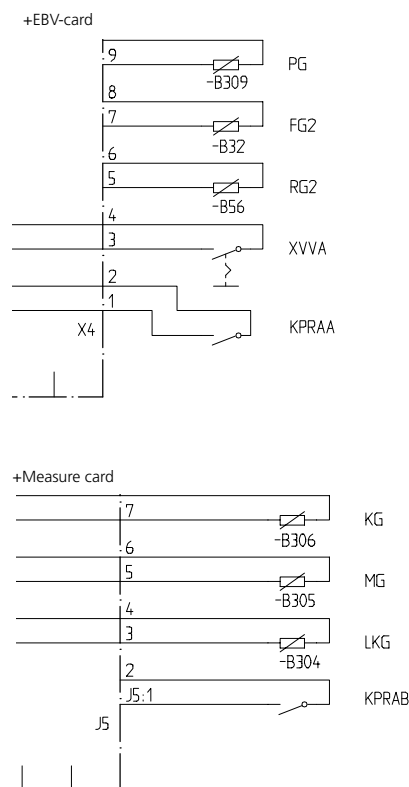
If these instructions are not followed there is a risk of seriously damaging the compressors, this applies upon first-start up.

1. Start the heat pump by turning the power switch (8) to the 1 position. The unit will now enter screen saver mode and the text Master will be shown on the bottom row of the display. When only Connecting flashes the heat pump this may be because the heat pump is set as a Slave. If so, set the unit as the Master according to the instructions in Description of Functions – Start up > Master/Slave.
2. Deactivate the screen saver by holding down the button in the far left corner and the enter button for approximately 8 seconds. (See the section the Description of Functions – Start up > Screensaver.)
3. Set in the Service position from menu 8.1.1. (See the example in Control > Changing parameters.)
4. On delivery F1330 is set with English as the menu language, if another language is required this can be changed in the menu 8.1.2.



The heat pump in the picture is fitted with accessories.

5. Start the brine pump (KBP) by setting Continuous in menu 5.4.6. See the section Description of functions - Basic functions > Brine pump.
6. Check that the direction of rotation of the brine pump agrees with the arrow on the pump. When the direction of rotation is wrong, two of the incoming phases on terminal block X9 must be switched.
7. Start the heating medium pump A (VBP-A) and the heating medium pump B (VBP-B) by setting Continuous in menu 5.4.7 and 5.4.8. See the section Description of functions - Basic functions > Heating medium pumps.
8. Check that the brine and heating medium pumps are vented and if necessary help the pumps to start.
9. Go to menu 5.2.2 and check that the temperatures correspond with the collector temperature, which indicates the brine flow.
10. Short the inputs KPRAA and KPRAB with their own strap.



Description of functions - Start up

11. Set the heat pump's operating type to External control in menu 0.2.1.
12. Remove the strap for compressor A (KPRAA).
13. Compressor A starts. Note there may be a slight delay of a few minutes before starting. See menu 0.1.1 to see the time to start.
14. Check the temperature difference on the heat medium in menu 5.2.1. Nominal difference is 5 to 10 °C.
15. Check the temperature difference on the brine medium in menu 5.2.2. Nominal difference is 2 to 5 °C.
16. Reset the strap for compressor A (KPRAA).
17. Remove the strap for compressor B (KPRAB).
18. Compressor B starts. Note there may be a slight delay of a few minutes before starting. See menu 0.1.2 to see the time to start.
19. Check the temperature difference on the heat medium in menu 5.3.1. Nominal difference is 5 to 10 °C.
20. Check the temperature difference on the brine medium in menu 5.3.2. Nominal difference is 2 to 5 °C.
21. Reset the strap for compressor B (KPRAB).
22. Reset all settings by selecting Extended in menu 5.4.10. Note that the setting returns to Off as soon as the heat pump has made the factory setting.
23. Set the power switch (8) in position "0".
24. Remove both straps (KPRAA and KPRAB).

When all heat pumps have undergone this inspection, continue with "Description of functions" - "Start up" > "Start up with a F1330" or if several F1330 are connected "Description of functions" - "Start up" > "Start up with several F1330s in a system"

Start up with a F1330

1. Start the heat pump by turning the power switch (8) to the 1 position. The unit will now enter screen saver mode and the text Master will be shown on the bottom row of the display.
2. When only Connecting flashes the heat pump this may be because the heat pump is set as a Slave. If so, set the unit as the Master according to the instructions in Description of Functions - Start up > Master/Slave.
3. Deactivate the screen saver by holding down the button in the far left corner and the enter button for approximately 8 seconds. (See the section the Description of Functions - Start up > Screensaver.)
4. Set in the Service position from menu 8.1.1. (See the example in Control > Changing parameters.)
5. Set the heat pump's operating type, i.e. whether the heat pump should produce hot water and/or heating. This is done in menu 0.2.1. (See the section Description of Functions - Start up > Operating type selection.)
6. Continue the start up settings with the help of Description of Functions - Basic Functions. Connect and configure the pertinent functions for the installation.

See "Dealing with malfunctions" at the end of the booklet in the event of any problems at start-up.

Start up with several F1330s in a system

1. F1330 is delivered as the Master. Other units in the system must be selected as unique slaves. This is done according to the instructions in Description of Functions - Start up > Master/Slave. It is extremely important that this is done for all units when the following settings are made.
2. Start all the heat pumps by turning the power switch (8) to the 1 position. The slaves will now flash Connecting, while the Master is in screen saver mode.
3. Deactivate the screen saver on the Master by holding down the button in the far left corner and the enter button for approximately 8 seconds. (See the section the Description of Functions - Start up > Screensaver.)
4. Set the Master in the Service position from menu 8.1.1. (See the example in Control > Changing parameters.)
5. Set each connected unit's operating type, i.e. which pumps should produce hot water and/or heating. This is done in menu 0.2.1. (See the section Description of Functions - Start up > "Operating type selection".) As long as Off is selected as the operating type, no communication with the Slave will occur, however, as soon as the operating type is changed to something other than Off, the Slave's display will stop flashing Connecting and will enter Screen saver mode.
6. Check that all connected heat pumps display the correct Slave number on the display. If this is not the case, check that all communication cables are correctly connected and shutoff all heat pumps. Now restart the Slaves and then the Master. Should the wrong Slave number be displayed or a display continues to flash Connecting - start again with the Master/Slave settings in point 1.
7. Continue with the start up settings with the help of Description of Functions - Basic Functions. Connect and configure the pertinent functions for the installation.

Operating type selection

The operating type must be selected for each connected F1330. This is selected in the sub-menus to 0.2.0 and can be selected from:

Off: Compressor modules A and B are not used. No communication with the heat pump.

Heat: Compressor modules A and B only provide heating. No shuttle valve necessary.

Hot water: Compressor modules A and B only provide hot water. No shuttle valve necessary.

Combi: Compressor module B provides both hot water and heating via the shuttle valve, while compressor module A always provides heating. The shuttle valve should be installed to the flow line on compressor B.

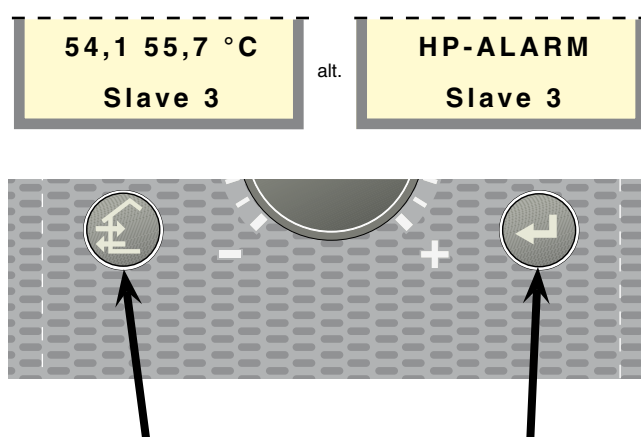
Parallel: Compressor modules A and B provide both hot water and heating via the shuttle valve. The shuttle valve should be connected to the common flow line for compressors A and B.

External control: Start and stop signal from external equipment. The shuttle valve can be connected, but should not be controlled from F1330.

Screen saver

In screen saver mode, you can see any alarms as well as the flow temperatures currently given by the compressors (VBFA and VBFB) and whether the heat pump is a Master or Slave. **The screen saver is deactivated by pressing the enter button and the button in the lower left for approximately 8 seconds.** Menu 1.0 is then displayed. The screen saver comes on automatically 30 minutes after the last button was pressed and when starting the heat pump.

Exemple:



Description of functions - Start up

Master / Slave

F1330 is always delivered as the Master. Up to 8 Slaves can be connected to the Master. Only one heat pump with each address can be installed in the same system, i. e. only one Master and only one Slave 5.

External temperature sensors and control signals should only be connected to the Master, with the exception of the shuttle valve/s (VXV) which can be connected one on each heat pump. See the section Description of functions - Start up > Operating type selection for setting, as well as Description of functions - Basic functions > Hot water production for connecting a shuttle valve (VXV).

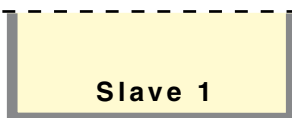
Should contact between the heat pumps fail, the Master will attempt to re-establish communications every ten minutes. During the period of the communication error, the text Com. error will be shown as the status of the heat pump in menu 0.1.x, 5.2.0 and 5.3.0.

When starting a system with several heat pumps, the Master should never be switched on before the Slaves. If this does occur, the Master will not find the Slaves during start up and the Slaves will then not work for up to 10 minutes.

In order to reset the heat pump between Master and Slave 1 – 8, proceed as follows:

1. Check that the heat pump is switched off. Disconnect the communication between the heat pumps. The easiest way to do this is to temporarily disconnect the modular cables from the communications card. (fig. 1)
2. Set the power switch (8) in position "1".
3. Wait approximately 30 seconds.
4. Turn the selector switch marked U6 (fig. 4) on the Measure card using a small screwdriver so that the arrow points to the required position. 0 refers to a Master while 1 – 8 refers to Slave 1 – 8. Each Slave is given a unique address for communication with the Master unit.
5. Wait approximately 5 seconds and check that the display shows your selection.

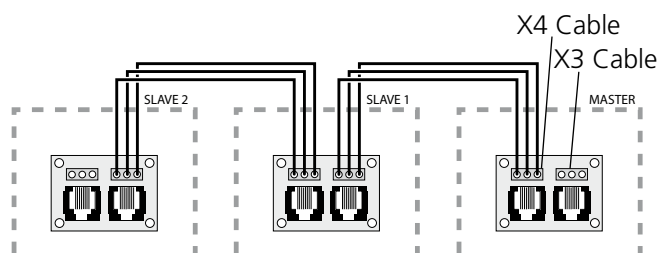
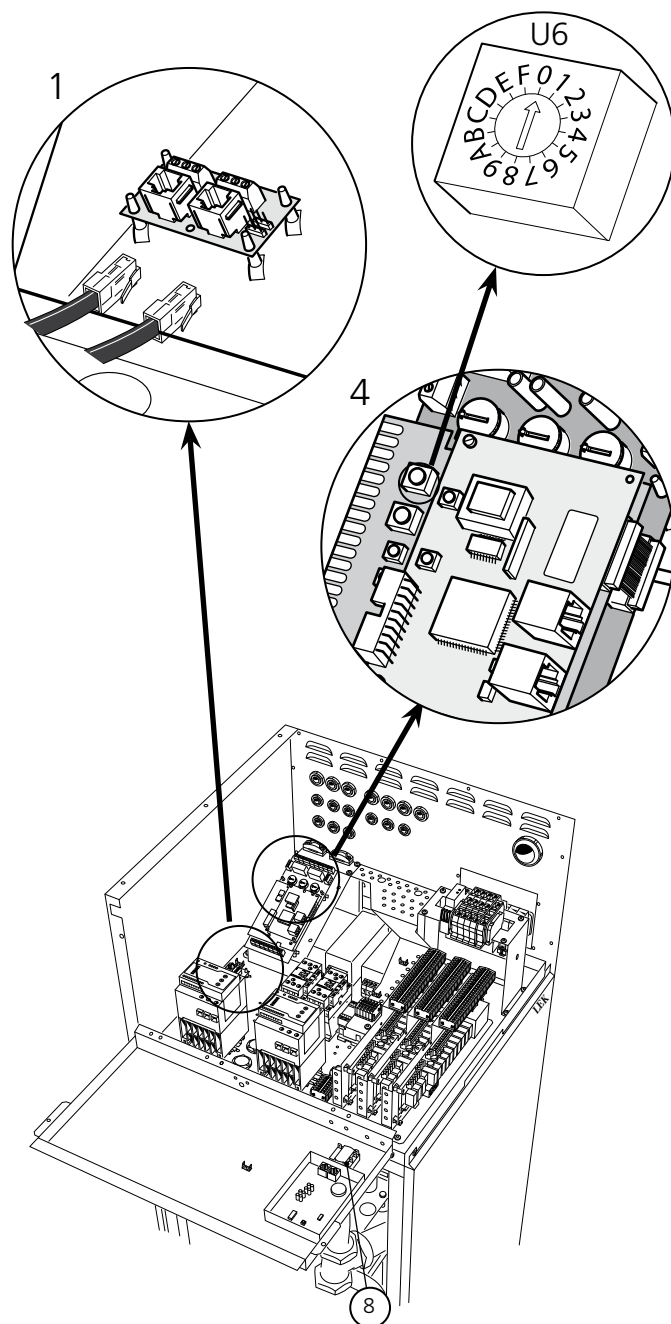
Example



6. Shut down the heat pump by turning the power switch (8) to "0". The heat pump is now configured to act according to the setting.
7. Reconnect the modular cables that were disconnected in step 1.

Connection of Master/Slave

Daisy-chain the heat pumps by using a screened 3-core cable. Position A on terminal block X4 Cable on the communications card (3) should be connected to position A on terminal block X3 Cable on the communications card in the next heat pump. In the same way, position B and GND are connected together with the communications card in the next heat pump.



The heat pump in the picture is fitted with accessories.

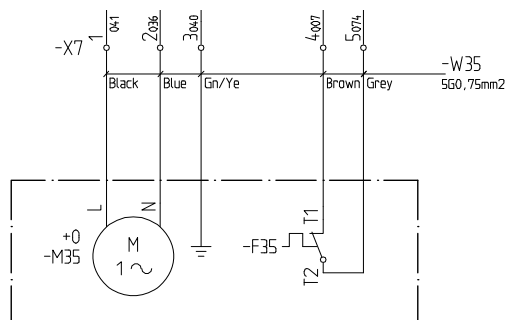
Description of functions - Basic functions

Brine pump

The operating mode for the brine pump (internally installed in 22 – 40 kW) can be set separately for each heat pump in menu 5.4.6.

Connecting external brine pump (60 kW only)

Connect the enclosed external brine pump to terminal block -X7:1-5 (13).



NOTE!

If the brine pump is not connected correctly during startup, the heat pump receives a brine alarm.

Quick guide - menu settings Brine pump

Menu 5.4.6 Oper. mode brinepump [U]

The operating mode for the brine pump is set here. Selectable options are:

Intermittent: The brine pump starts 20 seconds before and stops 20 seconds after the compressor.

Continuous: Continuous operation.

10 days cont: Continuous operation for 10 days. The pump then switches to intermittent operation.

The factory setting is Intermittent.

Level monitor

A level monitor, brine pressostat or flow sensor can be connected to prevent operation in the event of leakage in the collector circuit.

The status of the input can be checked during operation of the compressor and just prior to compressor start (when the brine pump is already in operation).

Alarm given as existing and the brine pump is unaffected until the alarm is reset.

Level monitor connection

The level monitor is connected to terminal block X1:16-17.

Quick guide - menu settings Level monitor

Menu 5.4.4 Level monitor [U]

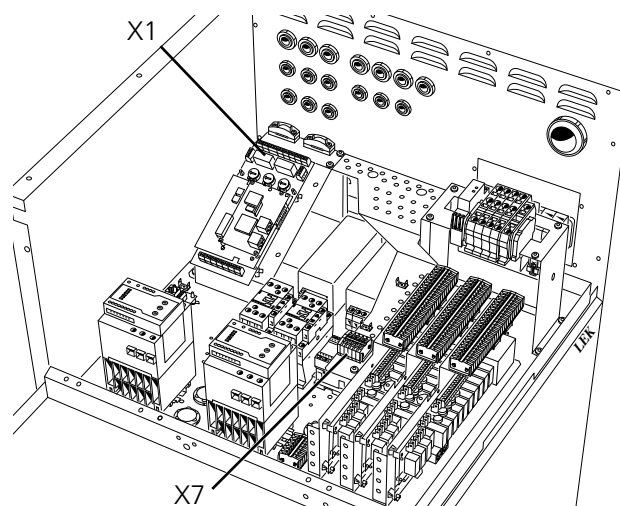
Select here whether an external brine pressostat, level monitor or flow sensor is connected to the "EBV-card".

Can be set to "On (NC)", "On (NO)" or "Off".

The factory setting is "Off".

If set to "On (NC)" alarm triggered when input is opened.

If set to "On (NO)" alarm triggered when input is closed.



The heat pump in the picture is fitted with accessories.

The outline diagram with docking instructions is available at www.nibe.com

Description of functions - Basic functions

Heating medium pumps (VBP-A/VBP-B and VBP3)

The operating mode for the heating medium pump for compressor A/B (VBP-A/VBP-B) can be set separately for each heat pump in menu 5.4.7/5.4.8.

The external heating medium pump's (VBP3) operating mode is set in menu 6.1.1.

The settings for the economy operating mode are the same for both pumps and are set in menus 6.1.2 and 6.1.3.

Connection of heating medium pump VBP3

The external heating medium pump's (VBP3) control signal is connected to the terminal block X6:1 (230 V), X6:2 (N) (max 0.2 A).

Quick guide - menu settings Heating medium pumps (VBP-A/VBP-B, VBP3)

Menu 5.4.7 / 5.4.8 Oper.mode heat pump A / B [U]

The operating mode for the heating medium pump A/B (VBP-A/VBP-B) is set here. Selectable options are:

Intermittent: The heating medium pump starts 20 seconds before and stops 20 seconds after the compressor.

Continuous: Continuous operation.

Economy: The pump is operational a specific time per period (see menu 6.1.2 and 6.1.3), and together with the compressor.

The factory setting is Intermittent.

Economy and Continuous operation are only recommended when there is no external circulation pump.

Menu 6.1.1 Op-mode external cp [U]

The operating mode for an external heating medium pump (VBP3) is set here. Selectable options are:

Continuous: Continuous operation.

Economy: The pump is operational a specific time per period (see menu 6.1.2 and 6.1.3), and together with the compressor.

The factory setting is Continuous.

When economy mode is set in menu 5.4.7 the setting in this menu must also be set to economy.

Menu 6.1.2 Periodtime economy [U]

The period time for economy mode is set here. This applies to heating medium pump A/B (VBP-A/VBP-B) when Economy is selected in menu 5.4.7/5.4.8, and/or the external heating medium pump (VBP3) when Economy is selected in menu 6.1.1. Adjustable between 5 and 120 minutes. The factory setting is 20 minutes.

Menu 6.1.3 Operating-time economy [U]

The operating time per period for the economy mode is selected here. This applies to heating medium pump A/B (VBP-A/VBP-B) when Economy is selected in menu 5.4.7/5.4.8, and/or the external heating medium pump (VBP3) when Economy is selected in menu 6.1.1. Adjustable between 1 and 120 minutes.

The factory setting is 5 minutes.

Heating

The outdoor temperature (UG) and set value for heat curve give a theoretical set point value, which the building's heating system needs in order to heat the house. The set point value as a function of the true flow temperature (FG) gives a value in degree-minutes as a basis for operation in heating mode.



The desired operating mode with regard to permitting/blocking of the circulation pump and additional heating is set using the Operating mode button. The selection does not need to be confirmed with the enter button.

The current operating mode is shown on the display when the button is pressed and the mode changes when you continue to press the button. The display returns to the normal display mode once the enter button is pressed.

The different operating modes are:

Auto mode:

F1330 automatically selects the operating mode by taking the outdoor temperature into account. The circulation pumps and additional heating are permitted to be operational when the need arises.

Summer mode:

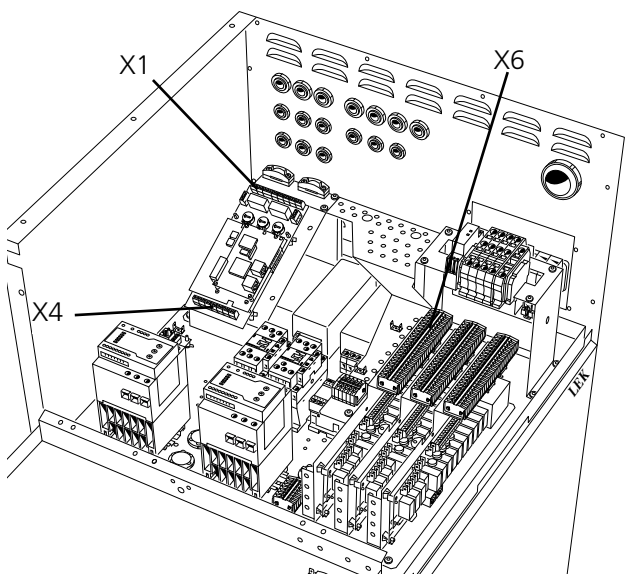
Only hot water production using F1330. The circulation pumps and additional heating are blocked. However, when Extra hot water is activated the additional heat (XVV) can be connected.

Spring/Autumn mode:

Only production of heating and hot water using F1330. The circulation pumps are operational. Additional heat blocked. However, when Extra hot water is activated the additional heat (XVV) can be connected.

Only additional heat:

Compressors blocked. The function can also be activated/deactivated by pressing the "operating mode button" for 7 seconds.



The heat pump in the picture is fitted with accessories.

Connection of heat production

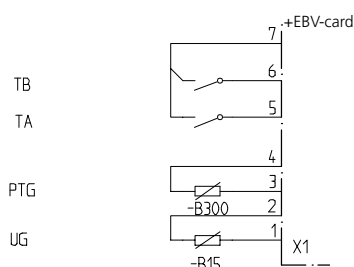
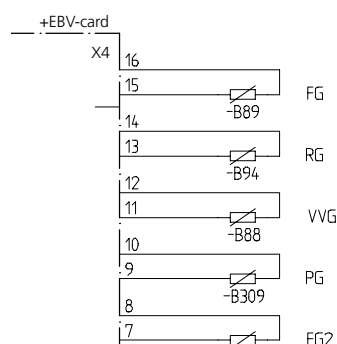
The flow temperature sensor (FG) is installed on the flow line towards the heating system. For a more exact placement see each docking option. The sensor must make good contact with the measurement area to give the best function. When a submerged tube is not available, use the supplied copper tube. The sensor is connected to screw terminals X4:15 and X4:16 on the EBV-card.

The return line temperature sensor (RG) is installed on the return line from the heating system. For a more exact placement see the selected docking option. The sensor must make good contact with the measurement area to give the best function. When a submerged tube is not available, use the supplied copper tube. The sensor is connected to screw terminals X4:13 and X4:14 on the EBV-card.

The outside sensor (UG) must be installed in a shaded location on a wall facing north or north-west, where it will not be affected by any morning sun. The sensor is connected using a two-core cable to the terminal blocks X1:1 and X1:2 on the EBV-card.

The external heating medium pump's (VBP3) control signal is connected to the terminal block X6:1 (230 V), X6:2 (N) (max 0.2 A) on the EBV-card.

Note that F1330 delivers 230 V control signals intended to control external contactors and not to drive pumps.



Quick guide - menu settings heat production

Operating mode



The menu is accessible via the operating mode button. Whether heat production is permitted is selected here and if so whether the electrical additional heater may be used.

Menu 2.1 Curve slope

[N]

The selected curve slope for the heating curve is shown here. The value is adjustable between curve 1 and 15, or in Own curve. The values for own curve are set in menu 2.6.0. The factory setting is 9.

Menu 2.2 Offset heating curve

[N]

The chosen offset for the heating curve is shown here. The value is adjustable between -10 and +10. NOTE! The value cannot be changed using the plus and minus buttons, only by using the Offset heating curve knob on the Master unit.

If the RCU is connected, the set offset is shown via RCU between brackets. The actual offset then becomes the total of the set offset and RCU offset.

Menu 2.3 Min. flow temp.

[U]

The set minimum level for the flow temperature to the heating system is shown here. The calculated supply temperature never drops below this level irrespective of the outdoor temperature, curve slope or offset heating curve. The value is adjustable between 2 and 65 °C. The factory setting is 15 °C.

Menu 2.4 Max. flow temp.

[U]

The set maximum level for the supply temperature to the heating system is shown here. The calculated supply temperature never exceeds this level irrespective of the outdoor temperature, curve slope or offset heating curve. The value is adjustable between 10 and 80 °C. The factory setting is 55 °C.

The outline diagram with docking instructions is available at www.nibe.com

Description of functions - Basic functions

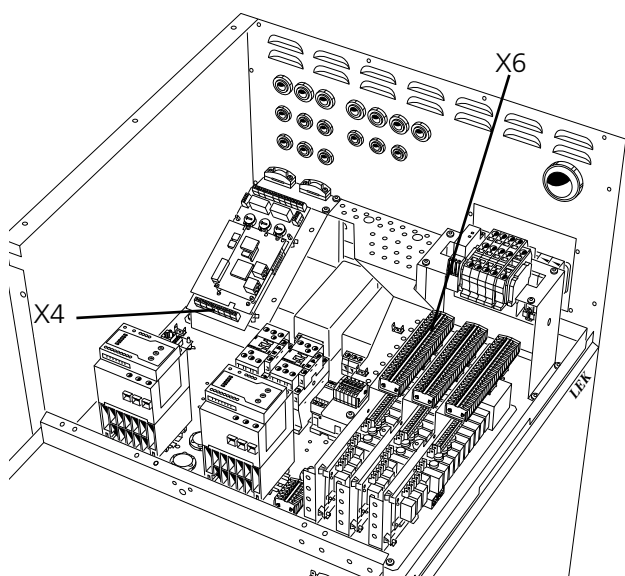
Hot water

The need of hot water production is created when the temperature on the hot water sensor (VVG) drops below the temperature set in menu 1.1. The need ceases when the temperature exceeds the set temperature in menu 1.2.

When two or more compressors are programmed for hot water charging, these are engaged and disengaged with 0.5 degrees minus difference for starting and stopping. The value can be set in menu 1.8. That's to say, if compressor 1 starts at 50 °C and stops at 55 °C then compressor 2 starts at 49.5 °C and stops at 54.5 °C i.e. each F1330 connected for possible switching between hot water and heating has its own shuttle valve.

Hot water mode normally has priority over heating mode. However, it is possible to set the period time and max time for hot water production in menus 1.6 and 1.7.

When in heating mode, the hot water temperature is measured before stopping. With less than 2 degrees to hot water start, hot water mode will start using one compressor directly without stopping, once the heating requirement is reached.

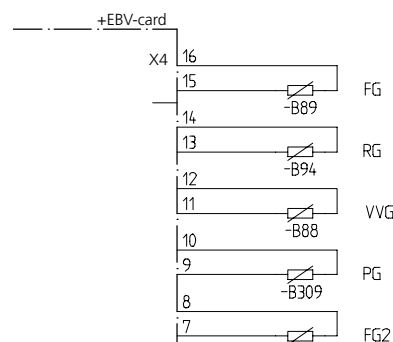
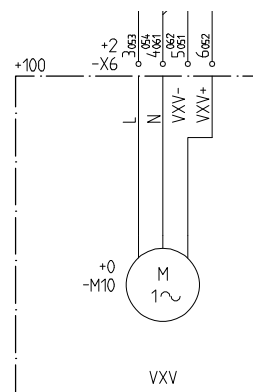


The heat pump in the picture is fitted with accessories.

Connection of hot water production

The shuttle valve (VXV) is connected to the terminal block X6:3 (230 V), X6:4 (N), X6:5 (230 V with heat production) and X6:6 (230 V with hot water production).

The hot water sensor (VVG) is installed in the water heater's submerged tube. The sensor must make good contact with the measurement area to give the best function. The sensor is connected to screw terminals X4:11 and X4:12 on the EBV-card.



Quick guide - menu settings hot water production

Menu 1.1 Start temperature HW [U]

The temperature when the heat pump starts to work with the hot water production is set here. When brackets are shown, this means the high pressure pressostat has tripped during hot water charging and F1330 has automatically lowered the set temperature by the value in brackets. The reduction is removed when the value is changed. The value is adjustable between 5 and 55 °C. The factory setting is 45 °C.

Menu 1.2 Stop temperature HW [U]

The temperature when the heat pump stops working with the hot water production is set here. When brackets are shown, this means the high pressure pressostat has tripped during hot water charging and F1330 has

automatically lowered the set temperature by the value in brackets. The reduction is removed when the value is changed. The value is adjustable between 20 and 60 °C. The factory setting is 50 °C.

Menu 1.6 Periodtime HW/Heat. [U]

The length of the period time for hot water production and heating are set here. The value is adjustable between 0 and 60 minutes. The factory setting is 60 minutes.

Menu 1.7 Maxtime HW-product. [U]

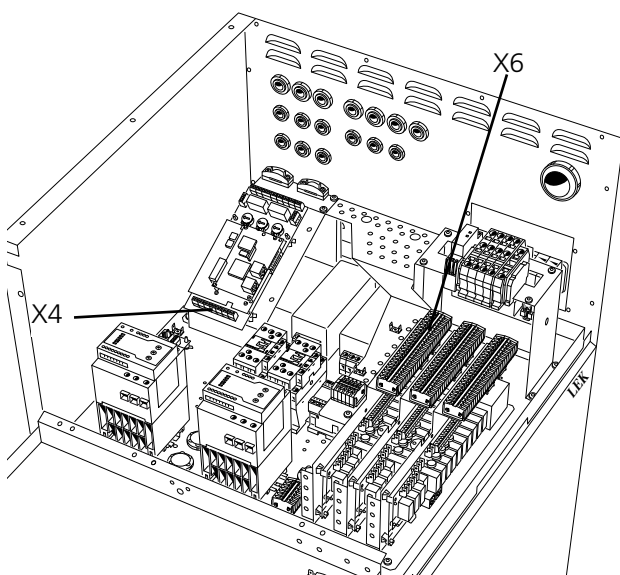
Here you select how much time of the period time (menu 1.6) is to be used to heat the hot water when there is a need of both heating and hot water. The value is adjustable between 0 and 60 minutes. The factory setting is 60 minutes.

"Extra hot water"

The function Extra hot water temporarily raises the temperature of the hot water. The temperature is raised first to an adjustable level with the compressor (menu 1.3) and then an externally mounted immersion heater takes over, if required, to increase the last degrees (menu 1.4).

Extra hot water can either be activated via the keypad on the display, automatically at a specific time, periodically or via an external contact.

When the external contact is used, this should be potential free and momentary. The function is activated when the contact is closed for at least one second. An automatic return to the previously set function occurs after 12 hours.



The heat pump in the picture is fitted with accessories.

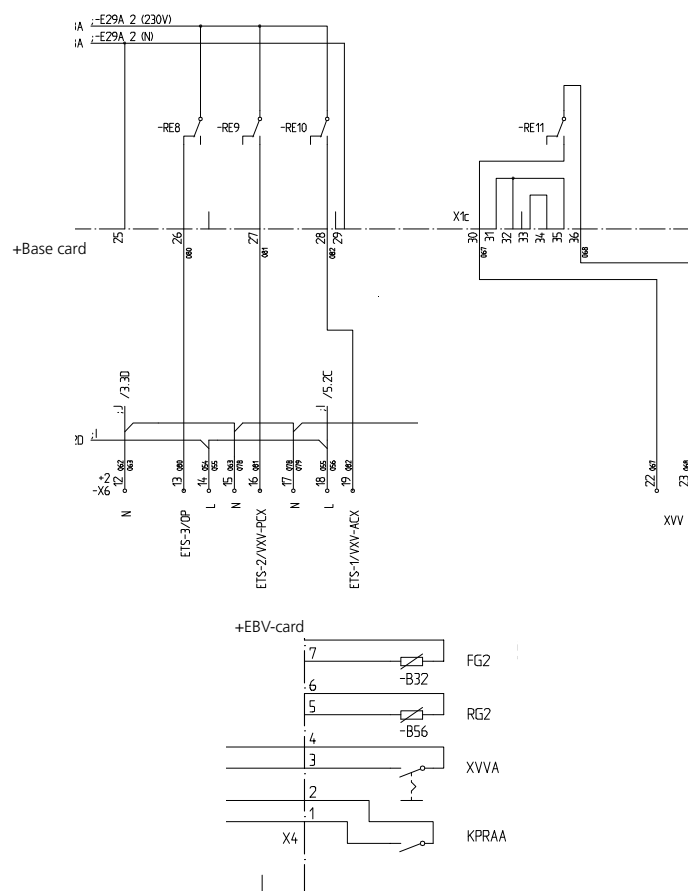
The outline diagram with docking instructions is available at www.nibe.com

Connection of "Extra hot water"

The supply to the control signal/power supply to the immersion heater is connected to the terminal block X6:22 (Max fuse 16 A and 250 V) and the control signal/power supply out is on terminal X6:23.

There is a potential free relay for the Extra hot water function, which can be used for the control voltage or power supply (max 16 A, 250 V). When you use the relay for the control voltage, the power supply can be strapped from X6:18 to X6:22 and use X6:17 as N, but the max. current must then be 0.4 A and the control voltage will be 230 V. If you take more power than this from X6:14 the Base card can be overloaded.

The external contact function is connected to terminal X4:3 and X4:4 on the EBV-card.



Quick guide - menu settings "Extra hot water"

Extra hot water



The menu can be accessed by pressing the Extra hot water button. See the section Control, for a detailed explanation.

Menu 1.3 Stop Temp. compr XHW

[U]

The temperature that the compressor shall stop producing hot water in Extra hot water and allow the additional heat (XVV) to take over is set here. The value is adjustable between 20 and 60 °C, or "Off". The factory setting is 50 °C.

Menu 1.4 Stop temperature XHW

[U]

The required temperature for Extra hot water, when the

additional heat shall stop during hot water production is set here. The value is adjustable between 50 and 80 °C, or "Off". The factory setting is "Off".

Menu 1.5 Interval per. XHW

[U]

How often the hot water temperature is increased from the normal level to the "Extra hot water" level is shown here. Periodic "Extra hot water" is activated when the value changes. The digit within brackets indicates the time in days that remain until the next periodic "Extra hot water" increase. When periodic hot water heating runs, the number between brackets changes to show the number of minutes that remain before it is ready. The value is adjustable between 1 and 90 days, or "Off". The factory setting is "Off".

Description of functions - Basic functions

Electrical additional heater

The electrical additional heater can be controlled by up to 6 relays, of which 3 are on the Base card and 3 on Expansion card 11.

F1330 delivers 230 V control signals for additional heat, i. e. signals to control external relays, contactors etcetera, however, not to power these.

In standby mode, the output ETS-3/OP (Base card) and the output ETS-6 (Expansion card 11) are voltage fed.

Stepping takes place at intervals of at least 3 minutes between the steps when stepping up. When stepping down the interval between steps is at least 1 minute.

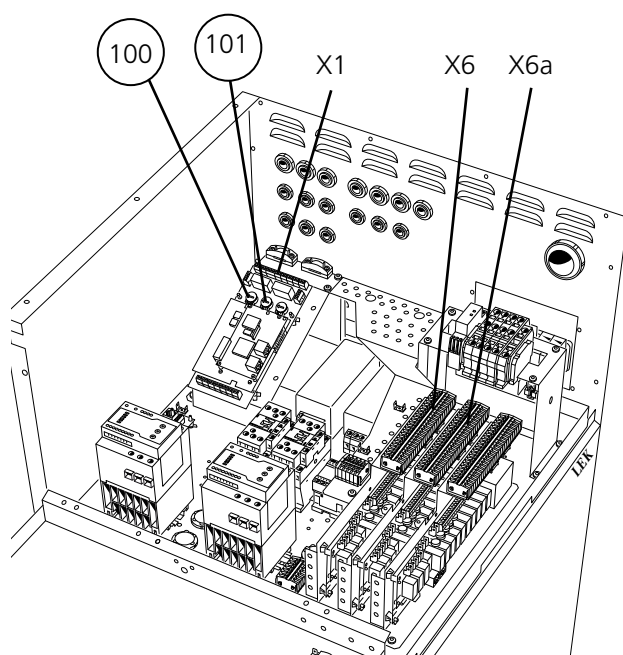
When HPAC is connected on the Base card and selected in menu 9.1.10, the outputs ETS-1 and ETS-2 are used to control this and accordingly can not be used to control the electrical additional heater. With that, the first electrical step is shifted to ETS-3.

When the oil boiler is connected and Electri/Oil is selected in menu 9.1.8, the relay ETS-3 is used to control the oil boiler and the electrical additional heater then jumps over this relay when stepping.

All electrical output can be force out by shorting the input Tariff B (TB).

By using the Fuse knob (100) (adjustable to 16, 20, 25, 35, 50 or 63 A) the current through the ring cores can be limited. The last connected electrical output is automatically disconnected if this happens. Extra hot water - immersion heater (XVV) is disconnected last of all. The setting can be checked in the menu 8.3.1.

The Max electrical output knob (101) permits a limitation in the number of available electrical steps as part of the number of possible electrical steps according to immersion heater type (menu 6.2.1) and relay setting (menu 6.2.2). Variable setting between 10 and 100 percent. The setting can be checked in the menu 8.3.2.



The heat pump in the picture is fitted with accessories.

Connection of electrical additional heater

ETS-1 is connected to terminal blocks X6:17 (N) and X6:19 (230 V with activation).

ETS-2 is connected to terminal blocks X6:15 (N) and X6:16 (230 V with activation).

ETS-3 is connected to terminal blocks X6:12 (N) and X6:13 (230 V with activation).

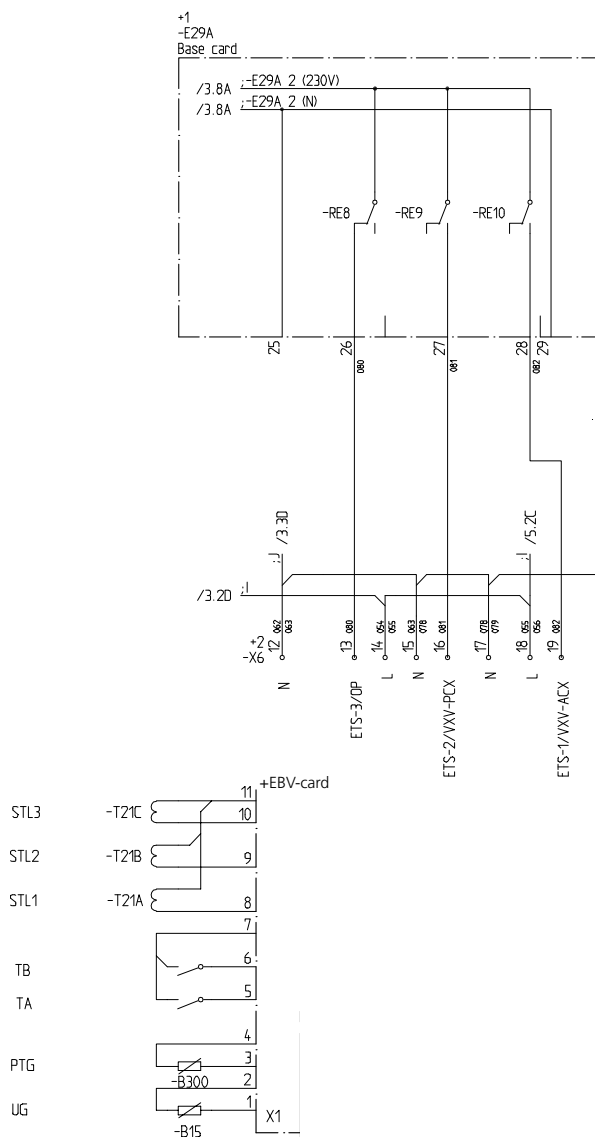
ETS-4, ETS-5 and ETS-6 are accessories (Expansion card 11)

ETS-4 is connected to terminal blocks X6A:15 (N) and X6A:14 (230 V with activation).

ETS-5 is connected to terminal blocks X6A:11 (N) and X6A:13 (230 V with activation).

ETS-6 is connected to terminal blocks X6A:11 (N) and X6A:12 (230 V with activation).

Current transformers (STL1, STL2 and STL3) are connected to the terminal blocks X1:8-X1:11 on the EBV-card. X1:11 is the common conductor for the three current transformers. The current transformers are installed in the distribution box in the house using unscreened LiYY or screened LiYCY cable. The cable cross section should be a minimum of 2 x 0.25 with cable lengths up to 50 m.



Quick guide - menu settings electrical additional heater

Menu 9.1.8 Additive [S]

Whether additional heat is to be engaged is set here. The options are: Off, Electricity, Oil or Electri/Oil. The factory setting is Off.

In order for the electrical additional heater to be active the option Electricity or Electri/Oil must be selected in this menu. When Electri/Oil is selected, electricity is used for the additional output when the input Tariff A (TA) is short-circuited, otherwise oil is used.

Menu 8.2.5 Additive start value [U]

Here you select at which degree-minute setting the first additional heater step shall start for heating. The value is adjustable between -3000 and 0. The factory setting is -500.

Menu 8.2.6 GM for additive step [U]

Here you set how many degree-minutes shall pass between each additional heater step. The value is adjustable between 10 and 500. The factory setting is 100.

Menu 8.3.1 Fuse size [U]

The setting selected on the "EBV card" (2) knob (100) is shown here.

Examples of "Binary control" with 3 relays:

Step	ETS-1	ETS-2	ETS-3
0	-	-	-
1	230 V	-	-
2	-	230 V	-
3	230 V	230 V	-
4	-	-	230 V
5	230 V	-	230 V
6	-	230 V	230 V
7	230 V	230 V	230 V

Menu 8.3.2 Max electric power [U]

The setting selected on the "EBV card" (2) knob (101) is shown here.

Menu 6.2.1 Immersionheater type [U]

Here you select whether immersion heater control shall take place in binary or linear.

"Binary control" means that stepping is carried out according to the binary system and in doing so makes it possible to control a maximum of 63 electrical steps.

"Linear control" gives a maximum of 6 electrical steps when stepping is carried out according to the linear increase model.

Menu 6.2.2 Immersionheatrelays [U]

Here you select how many relays are connected to the electrical additional for heat production. Adjustable between 1 and 6. The factory setting is 3.

Menu 6.2.3 Steps at 2h delay [U]

The number of permitted electrical steps within 2 hours of start up. Adjustable between 0 and 63. The factory setting is 3.

Examples of "Linear control" with 3 relays:

Step	ETS-1	ETS-2	ETS-3
0	-	-	-
1	230 V	-	-
2	230 V	230 V	-
3	230 V	230 V	230 V

The outline diagram with docking instructions is available at www.nibe.com

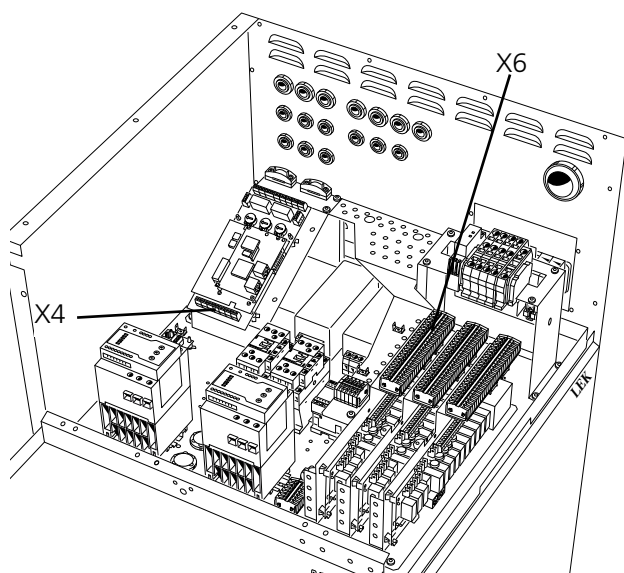
Description of functions - Basic functions

Oil boiler

The oil burner is controlled by a relay (ETS-3/OP) and the shunt valve's (SV-P) increase/decrease signals using 2 relays. A boiler sensor (PG) should also be installed.

When the degree-minute setting is reached the oil burner starts. When the temperature reaches the required temperature on the boiler sensor (PG), the shunt starts to regulate with increase and decrease pulses after the set period and pulse times. When the temperature in the boiler is below the set temperature, the shunt valve moves towards the closed position.

In standby mode the output ETS-3/OP (Base card) is voltage fed and with that, F1330 requests the oil boiler. However, the boiler shunt (SV-P) must be controlled manually in standby mode.

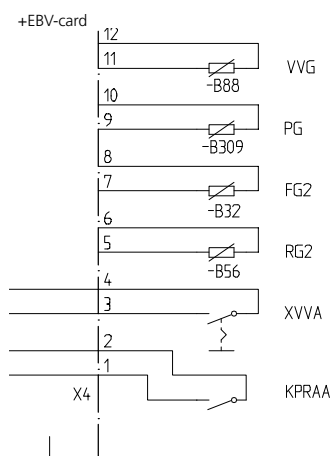
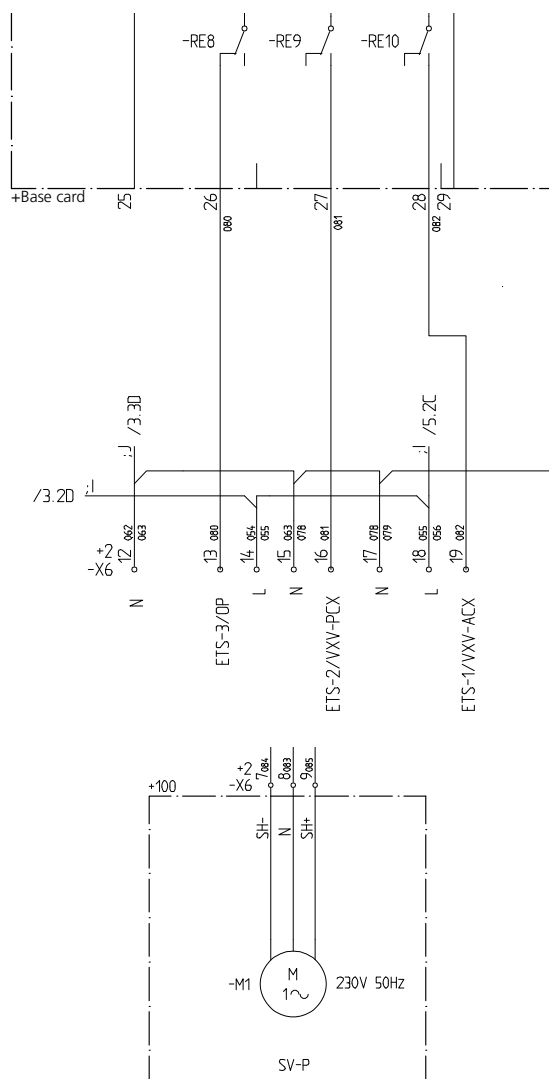


Connection of oil boiler

ETS-3/OP is connected to terminal blocks X6:12 (N) and X6:13 (230 V with activation).

The shunt valve (SV-P) is connected to the terminal blocks X6:7 (decrease signal), X6:8 (N) and X6:9 (increase signal).

The boiler sensor (PG) is fitted in the top of the boiler. The sensor must make good contact with the measurement area to give the best function. The sensor is connected to screw terminals X4:9 and X4:10 on the EBV-card.



The heat pump in the picture is fitted with accessories.

Quick guide - menu settings oil boiler**Menu 9.1.8 Additive****[S]**

Whether additional heat is to be engaged is set here. The options are: Off, Electricity, Oil or Electri/Oil. The factory setting is Off.

In order for the oil boiler to be active the option Oil or Electri/Oil must be selected in this menu. When Electri/Oil is selected, oil is used for additional output when the input Tariff A (TA) is broken, otherwise electricity is used.

Menu 8.2.5 Additive start value**[U]**

Here you select at which degree-minute setting the first additional heater step shall start for heating. The value is adjustable between -3000 and 0.

The factory setting is -500.

Menu 6.3.1 Oil Boiler time**[U]**

Number of hours the oil boiler shall be active.
The value can be set between 1 and 24 hours.
The factory setting is 12 hours.

Menu 6.3.2 Start temp. shunt**[U]**

Here you select the temperature on the boiler sensor (PG) at which the boiler shunt (SV-P) shall start to regulate.
Adjustable between 10 and 90 °C.
The factory setting is 55 °C.

The outline diagram with docking instructions is available at www.nibe.com

Description of functions - Basic functions

Gas boiler

In those cases, additional heating is supplied using a gas boiler you can choose to connect it as an oil boiler if you need to control a shunt valve or alternatively connect it as an electric boiler.

See the section Description of functions - Basic functions > Electrical additional heater to connect it as an electric boiler and the section Description of functions - Basic functions > Oil boiler to connect it as an oil boiler.

HPAC

NOTE!

This system solution means that the brine will also circulate through the heating system. Check that all component parts are designed for the brine in question.

HPAC can either be connected to the Base card or to the Expansion card 11. When HPAC is to be connected to the Base card the immersion heater can be run at a maximum on one step.

Control of cooling mode takes place by means of an outdoor sensor and, when connected, a room sensor (RG 10/RG 05, see the section Description of functions - Basic functions > Room control for a description of the connection).

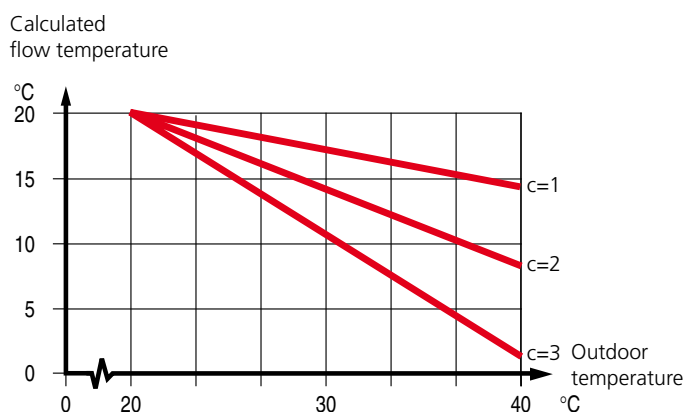
The control of cooling to the house takes place according to the set curve slope and curve offset in menus 6.4.2 and 6.4.3. After adjustment, the house receives the correct amount of cooling for the prevailing outdoor temperature. The flow temperature from HPAC will fluctuate around the theoretical required value (value in brackets in menu 2.0). In the event of excess temperature, F1330 calculates a surplus in the form of degrees-minutes, which means that the connection of cooling production is accelerated the greater the excess temperature that temporarily prevails.

F1330 automatically switches to cooling mode when the outdoor temperature exceeds the set value in menu 6.4.5.

Passive cooling means that F1330, with the help of the circulation pumps, circulates fluid from the soil/rock collector in the house's distribution system and cools the house.

In the event of a large cooling requirement where passive cooling is not sufficient, active cooling is engaged at the limit value set in menu 6.4.7. A compressor then starts and the cooling produced circulates to the house's distribution system and heat is circulated out to the soil/rock collector. When more compressors are available, these will start with a difference on the set degree-minute setting in menu 6.4.8.

Three different cooling curves can be selected, see the figure for a detailed description.



If room sensors (RG 10/RG 05) are connected, cooling starts at a 1 degree excess temperature in the room and the supply calculation counts on an outdoor temperature of 30 °C (if the outdoor temperature is greater, then the actual outdoor temperature is used). When the room temperature has fallen to 0.5 degrees of excess temperature, the cooling is switched off. To prevent self-oscillation in the heating system, there is a neutral zone between heating and cooling operations.

Lower shunt (SV-V2) is regulated during cooling operation in opposite direction to heating operation, which normally means the shunt closes completely during cooling operation.

The outline diagram with docking instructions is available at www.nibe.com

Description of functions - Basic functions

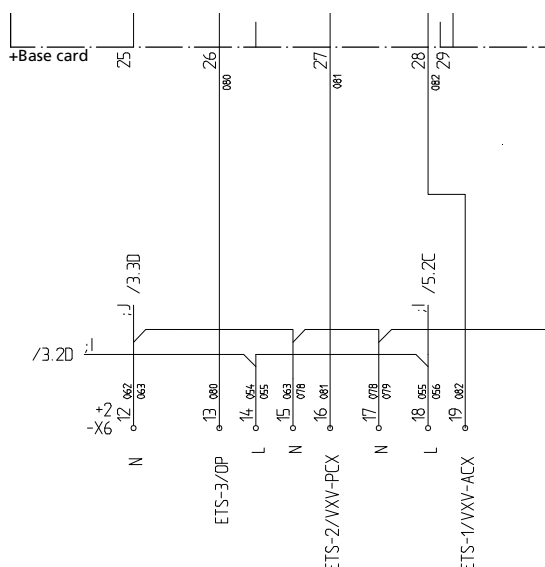
Connection of HPAC

When HPAC Basec. is selected in menu 9.1.10:

The shuttle valve for active cooling. (VXV-ACX) is connected to the terminal block X6:19 (NC with active cooling mode, i. e. 230 V).

The shuttle valve for passive cooling. (VXV-PCX) is connected to terminal block X6:16 (NC with passive or active cooling mode i. e. 230 V).

The supply voltage for HPAC is connected to terminal blocks X6:14 (230 V) and X6:15 (N).



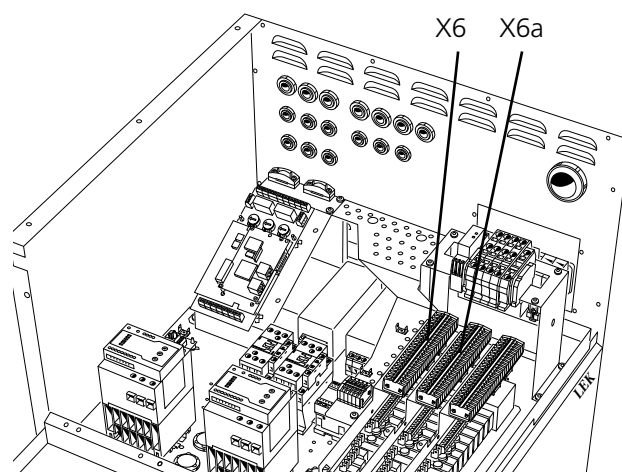
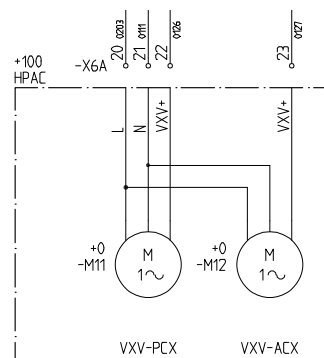
For details how to connect a room sensor (RG 10/ RG 05) see the section, Description of functions - Basic functions > Room control.

When HPAC Expcard 11 is selected in menu 9.1.10:

The shuttle valve for active cooling. (VXV-ACX) is connected to X6A:23 (NC with active cooling mode, i. e. 230 V).

The shuttle valve for passive cooling. (VXV-PCX) is connected to terminal block X6:22 (NC with passive or active cooling mode i. e. 230 V).

The supply voltage for HPAC is connected to terminal blocks X6:20 (230 V) and X6:21 (N).



The heat pump in the picture is fitted with accessories.

Quick guide - menu settings HPAC

Menu 9.1.10 Cooling [S]

The type of cooling system is set here. The options available are: Off, HPAC Basecard, HPAC Expcard 11 and Coolacc. The factory setting is Off.

Menu 6.4.1 Cooling [U]

Here is cooling function can be set On or Off. The factory setting is Off.

Menu 6.4.2 Cooling curve [U]

The selected curve slope (cooling curve) is shown here. The value is adjustable between 1 and 3. The factory setting is 2.

Menu 6.4.3 Offset cold curve [U]

The selected cooling curve offset is shown here. The value is adjustable between -10 and +10. The factory setting is 0.

Menu 6.4.4 Start temp. heating [U]

Outdoor temperature (menu 4.0) at the outdoor sensor (UG) when the heat pump switches to heating mode. The value is adjustable between 0 and 30 °C. The factory setting is 20 °C.

Menu 6.4.5 Start temp. cooling [U]

Outdoor temperature (menu 4.0) on the outdoor sensor (UG) when the heat pump switches to cooling mode. The value is adjustable between 0 and 30 °C. The factory setting is 25 °C.

Menu 6.4.6 Start active cooling [U]

The heat pump starts to actively produce cooling at this degree-minute surplus. The value is adjustable between 10 and 500 degree-minutes. The factory setting is 30 degree-minutes.

Menu 6.4.7 GM for compr.-step [U]

Degree-minute difference between compressor stages. The value is adjustable between 10 and 500 degree-minutes. The factory setting is 30 degree-minutes.

Menu 6.4.8 Diff PC/AC [U]

If the flow temperature on the sensor (FG) exceeds the calculated flow temperature + this value the system switches to active cooling. The value is adjustable between 1 and 9 °C. The factory setting is 4 °C.9 °C.

Description of functions - Basic functions

Fixed condensing

With fixed condensing the compressor start for heat charging is regulated using the flow line sensor (FG). The start and stop temperatures can be set in the sub-menus to 2.7.0. The compressors and additional heating steps are started and stopped with a 0.5 degree minus difference. That is to say, if compressor 1 starts at 50 °C and stops at 55 °C, compressor 2 starts at 49.5 °C and stops at 54.5 °C etc.

When the sub shunt (SV-V2) is required this can be connected to the Expansion card 11, see the section Description of functions - Expansion card 11 > Sub shunt.

Connection of fixed condensing

The flow line sensor (FG) is ideally placed in a submerged tube in the working tank, boiler or the like.

To connect the sub shunt (SV-V2) see the section Description of functions - Expansion card 11 > Sub shunt.

Quick guide - menu settings fixed condensing**Menu 9.1.7 Fixed condensing [S]**

Here fixed condensing is set either On or Off. The factory setting is Off.

Menu 2.7.1 Starttemp.compressor [U]

Temperature on the flow line sensor (FG) when the first compressor starts. The value is adjustable between 5 and 60 °C. The factory setting is 47 °C.

Menu 2.7.2 Stoptemp. compressor [U]

Temperature on the flow line sensor (FG) when the last compressor stops. The value is adjustable between 5 and 60 °C. The factory setting is 50 °C.

Menu 2.7.3 Starttemp. additive [U]

Temperature on the flow line sensor (FG) when additional heating engages. The value is adjustable between 5 and 60 °C. The factory setting is 45°C.

Menu 2.7.4 Stoptemp. additive [U]

Temperature on the flow line sensor (FG) when additional heating disengages. The value is adjustable between 5 and 60 °C. The factory setting is 49 °C.

Floor drying function

In order to obtain the correct drying of new concrete floors, the integrated floor drying function can be used. The function forces the temperature on the flow line sensor (FG) to fixed temperatures irrespective of the outdoor temperature and curve settings.

The settings for the function can be found in the sub-menus to 9.2.0.

Once the selected program is complete, control of the flow temperature automatically returns to normal operation.

Quick guide - menu settings floor drying function**Menu 9.2.1 Op-mode floor drying [S]**

The operating mode for the floor drying function is set here. Selectable modes are:

Off: Normal operation, i.e. the floor drying function is switched off.

Own program: Two fixed temperatures in two periods are adjustable in menu 9.2.3 to 9.2.6.

Fixed program: The flow temperature starts day 0 at 20 degrees and increases each day by 5 degrees. The temperature has reached 45 degrees on day 5, this is maintained on days 6 and 7. The program is terminated by lowering the temperature on days 8 to 12 by 5 degrees on each day.

The factory setting is Off.

Menu 9.2.2 Floor drying day [U]

Here you can see which day the floor drying function is on. It is also possible here to enter the floor drying program by changing this value. The value is adjustable from 0 to 20 days. The factory setting is 0.

Menu 9.2.3 Nos. of days per. 1 [U]

Here you set the number of days that the flow temperature shall maintain the temperature in menu 9.2.4 when Own program in menu 9.2.1 is selected. The value is adjustable between 1 and 10 days. The factory setting is 5 days.

Menu 9.2.4 Temperature per. 1 [U]

Here you set the temperature to be maintained on the flow line sensor (FG) during period 1 when Own program is selected in menu 9.2.1. The value is adjustable between 15 and 50 °C. The factory setting is 25 °C.

Menu 9.2.5 Nos. of days per. 2 [U]

Here you set the number of days that the flow temperature shall maintain the temperature in menu 9.2.6 when Own program in menu 9.2.1 is selected. The value is adjustable between 1 and 10 days. The factory setting is 5 days.

Menu 9.2.6 Temperature per. 2 [U]

Here you set the temperature to be maintained on the flow line sensor (FG) during period 2 when Own program is selected in menu 9.2.1. The value is adjustable between 15 and 50 °C. The factory setting is 35 °C.

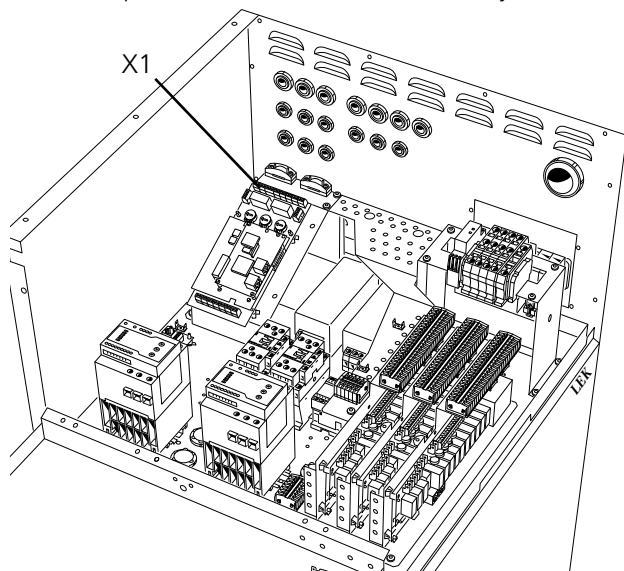
The outline diagram with docking instructions is available at www.nibe.com

Room control

A thermostat can be connected to temporarily change the calculated flow temperature. It is also possible to connect a thermostat to the sub shunt system (see the section Description of functions - Expansion card 11 > Sub shunt). When thermostat control is required, Thermostat should be selected in the menu 9.1.11.

Alternatively a room sensor of the type RG10 (accessory) can be connected to the system. This includes settings for the required room temperature and the system automatically compensates the calculated flow temperature according to the difference between the true and required room temperature.

Room sensors can be used together with the cooling functions on Expansion card 12. Cooling production starts at 1 degree excess temperature in the room if, at the same time, the mean outside temperature (menu 4.1) exceeds the set temperature in menu 6.4.5 alternatively 6.8.6.



The heat pump in the picture is fitted with accessories.

Connection of room control

When Thermostat is selected in menu 9.1.11:

Connect the thermostat for heating system 1 to the screw terminals X1:12 and 13 on the EBV-card (RTGA) and, when required, the thermostat for heating system 2 (Sub shunt) to the terminal blocks X1:14 and X1:15 on the EBV-card (RTGB). The thermostat/s shall be potential free and normally open (NO).

If RG10 is selected in menu 9.1.11:

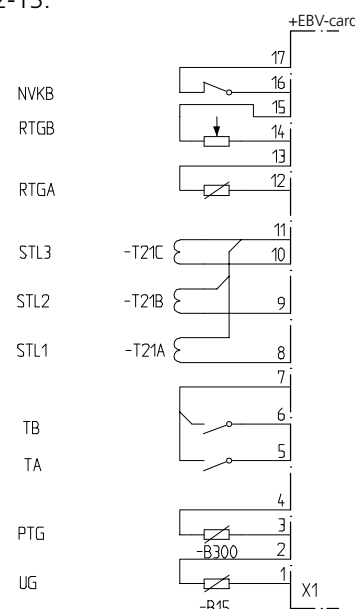
Connect screw terminal X1:12 to the screw terminal in RG10 marked 2.

Connect screw terminal X1:13 to the screw terminal in RG10 marked 6.

Connect screw terminal X1:14 to the screw terminal in RG10 marked 1.

Om valt "RG05" i meny 9.1.11:

Connect X1:12-13.



Quick guide - menu settings room control

Menu 9.1.11 Room control mode [S]

Here the type of room control connected is set. Selectable modes are Off, Thermostat, RG05 or RG10. The factory setting is Off.

If Thermostat is selected in menu 9.1.11:

Menu 2.5 External adjustment [U]

When the thermostat is selected in menu 9.1.11, you can connect an external contact, see Electrical connection - External contacts. Using an external contact, for example, a room thermostat or a timer allows you to temporarily or periodically raise or lower the flow temperature and with that the room temperature. When the external contact is made, the heating curve offset is changed by the number of steps shown here. The value is adjustable between -10 and +10. The factory setting is 0.

Even the menu 3.5 (External adjustment 2) comes into question if the Sub shunt (SV-V2) has been activated.

If RG10 or RG05 is selected in menu 9.1.11:

Menu 6.9.1 Room balancing [U]

Here you set the factor that determines how much deviation between the desired and true room temperatures shall affect the flow temperature. The factor is adjustable between 0 and 6 in increments of 0.1. The factory setting is 1.0.

Menu 6.9.2 Room balancingsystem [U]

Here you select which heating system the room sensor shall affect. Can be set to Off, Heating syst1, Heating syst2 or Heatingsys 1&2. The factory setting is Off.

If RG10 or RG05 is selected in menu 9.1.11:

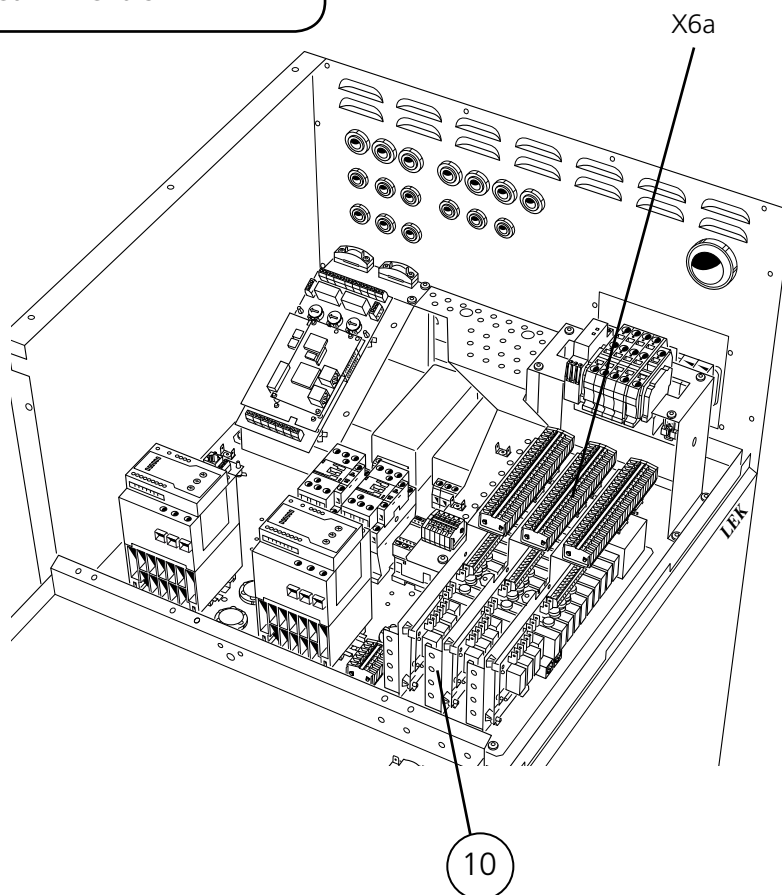
Menu 6.9.3 Desired room temperature [U]

The menu is only displayed if RG05 is selected in menu 9.1.11. The value can be adjusted between 10 and 30 °C in increments of 0.5 °C. Factory setting is 20 °C.

Description of functions - Expansion card 11

NOTE!

Access to the following functions requires the Expansion card 11 (10) accessory with associated terminal block X6A. When this is connected the card must be activated in menu 9.1.1.



Electrical additional heater

To connect the relays ETS-4 to ETS-6, see the section Description of functions - Basic functions > Electrical additional heater.

HPAC

To connect HPAC on Expansion card 11 see the section Description of functions - Basic functions > HPAC.

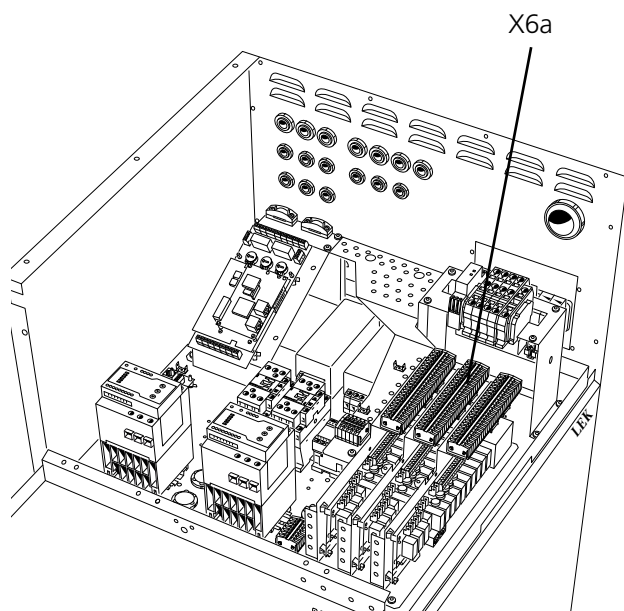
The heat pump in the picture is fitted with accessories.

Hot water circulation pump

A hot water circulation pump (VVC) can be controlled to circulate the hot water by operating time or period time within the selected time period.

The Hot water circulation pump (Hw-cp) (VVC) connection can be made using a T-piece docking to an electric water heater (peak water heater). This is done especially on smaller installations. The docking is independent of how the heat pump works with the double-jacketed water heater.

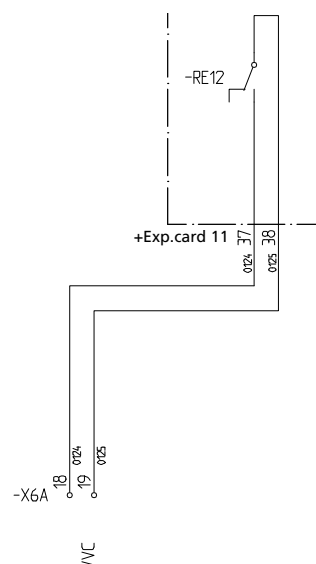
When connected to a separate Hw-cp (VVC) outlet on the double-shelled water heater (e.g. VPA) it is important that the circulation flow is accurately adjusted and that the mixing valve on any electric peak water heater is not set too high. This can result in the stratification in the double jacket being disturbed and the heat pump knocked out. This docking is especially used on large installations, which e.g. use two, double-jacketed water heaters. The sensor (VVG) is placed in the first water heater and the Hw-cp (VVC) connection is made to the other.



Connection of hot water circulation pump

There is a potential free relay for the Hw-cp function, which can be used for the control voltage or power supply (max 16 A, 250 V). When the relay is used for the control voltage, you can strap the power supply from X6A:20 to X6A:19, use X6A:21 as N and then get the signal on X6A:18. Max. current may then be 0.4 A and the control voltage becomes 230 V. If you take more output from X6A:20 you can overload the L1-phase causing the fuse to trip.

The supply to the control signal/power supply to the Hw-cp (VVC) is connected to the terminal block X6A:19 (Max fuse 16 A and 250 V) and the control signal/power supply out is on terminal X6A:18.



Quick guide - menu settings hot water circulation pump

Menu 6.1.4 Time of period Hw-cp [U]

Here you select between which times of the day the hot water circulation pump shall run according to the period time (menu 6.1.5) and the operating time (menu 6.1.6).

Menu 6.1.5 Periodtime Hw-cp [U]

Here the period time for the hot water circulation pump is set here. Adjustable between 10 and 60 minutes. The factory setting is 15 minutes.

Menu 6.1.6 Operatingtime Hw-cp [U]

The operating time per period for the hot water circulation pump is selected here. Adjustable between 1 and 90 minutes. The factory setting is 3 minutes.

The heat pump in the picture is fitted with accessories.

The outline diagram with docking instructions is available at www.nibe.com

Description of functions - Expansion card 11

Pool

A shuttle valve (VXV-P) can be connected to control one part of, or the entire, heating medium flow to a pool exchanger. The shuttle valve, or, if required - the shuttle valves (however, with the same control signal), is/are installed on the heating medium circuit that goes to the radiator system as normal. The compressor modules that are connected via pool exchange valve must be selected as available for pool operation in menu 5.4.12 and 5.4.13. Circulation pump VBP3 must be installed for pool operation.

During pool heating, the heating medium circulates between the heat pump and pool exchanger using the heat pump's internal circulation pumps (VBP-A respectively VBP-B). VBP3 circulates the heating medium around the heating system and additional heat can be connected as required at the same time as the flow line sensor (FG) continuously senses the heating requirement of the house.

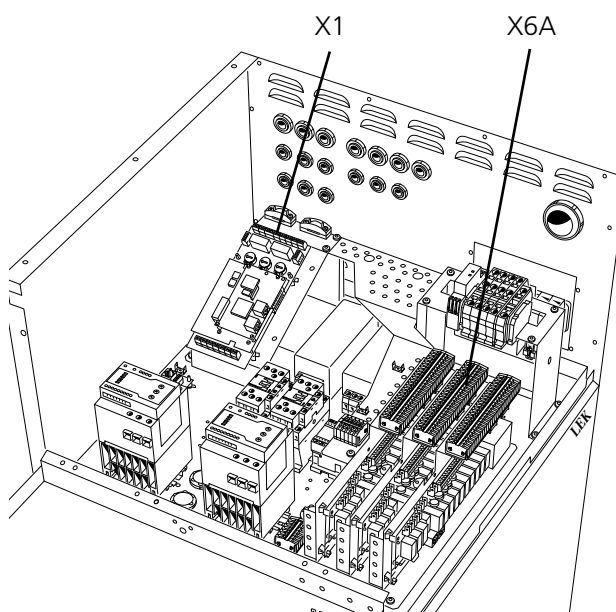
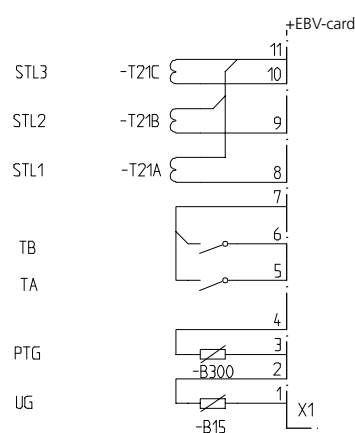
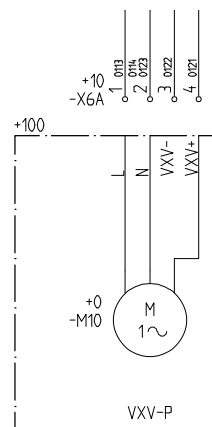
Start and stop temperatures for pool heating are set in menu 6.5.1 respectively 6.5.2. Heating operation is normally prioritised before pool heating, but shifting between pool heating and heating operation can be set in menus 6.5.3 and 6.5.4 if required. If the same value is set in both the menus, heating operation is prioritised before pool heating.

If several compressors are available for pool operation, these start at 5 minute intervals until no more are available or the number of started compressors is the same as the number that is selected in menu 6.5.5.

Connection of pool

Shuttle valves (VXV-P) is connected to the terminal blocks X6A:1 (230 V), X6A:2 (N) and X6A:3 (NC) or X6A:4 (NO).

The pool temperature sensor (PTG) is either fitted on the circulation pipe for the pool water (presupposes continuous circulation) or in a submerged tube in the pool. The sensor is connected to screw terminals X1:3 and X1:4 on the EBV-card.



The heat pump in the picture is fitted with accessories.

Quick guide - menu settings pool**Menu 9.1.5 Pool****[S]**

Here pool heating is set either On or Off. The factory setting is Off.

Menu 6.5.1 Start temp. pool**[U]**

Here you select at which pool temperature on the sensor (PTG) heating should start. The value is adjustable between 5 and 60 °C in increments of 0.5 °C. The factory setting is 22.0 °C.

Menu 6.5.2 Stop temp. pool**[U]**

Here you select at which pool temperature on the sensor (PTG) heating should stop. Adjustable between 5 and 60 °C in increments of 0.5 °C. The factory setting is 24.0 °C.

Menu 6.5.3 Periodtime heat/pool**[U]**

The length of time is set here. The value is adjustable between 10 and 1000 minutes. The factory setting is 100 minutes.

Menu 6.5.4 Max-time heatproduct**[U]**

Here you select how much time of the period time (menu 6.5.3) is to be used to heat the house when there is a need of heating and pool heating. The value is adjustable between 0 and 1000 minutes. The factory setting is 50 minutes.

Menu 6.5.5 Max compr. to pool**[U]**

The maximum number of compressors that can be operated towards the pool exchanger (VX-P) is set here. The number of compressors that currently produce pool heat is within brackets. The value can be adjusted between 0 and 18. Factory setting is 1.

Menu 5.4.12 Pool heating compr. A**[U]**

The menu is only displayed when pool is selected as "On" in menu 9.1.5

If it is "On", compr. A in the heat pump that is selected in menu 5.1 is permitted to carry out pool heating.

Menu 5.4.13 Pool heating compr. B**[U]**

The menu is only displayed when pool is selected as "On" in menu 9.1.5

If it is "On", compr. B in the heat pump that is selected in menu 5.1 is permitted to carry out pool heating.

The outline diagram with docking instructions is available at www.nibe.com

Description of functions - Expansion card 11

Sub shunt

A shunt valve (SV-V2) and a circulation pump (VBP4) can be connected to a second heating circuit with a lower temperature requirement.

The circulation pumps for heating circuits 1 and 2 (VBP3 and VBP4) are controlled together. These are activated in standby mode.

The flow temperature is controlled via the shunt valve's increase/decrease signal and the sensor FS2.

The possibility to set the period and pulse times for the shunt are located in menus 3.8 and 3.9.

The calculation of the flow temperature is done in the same way and with the same type of settings as for heating circuit 1.

Connection of the sub shunt

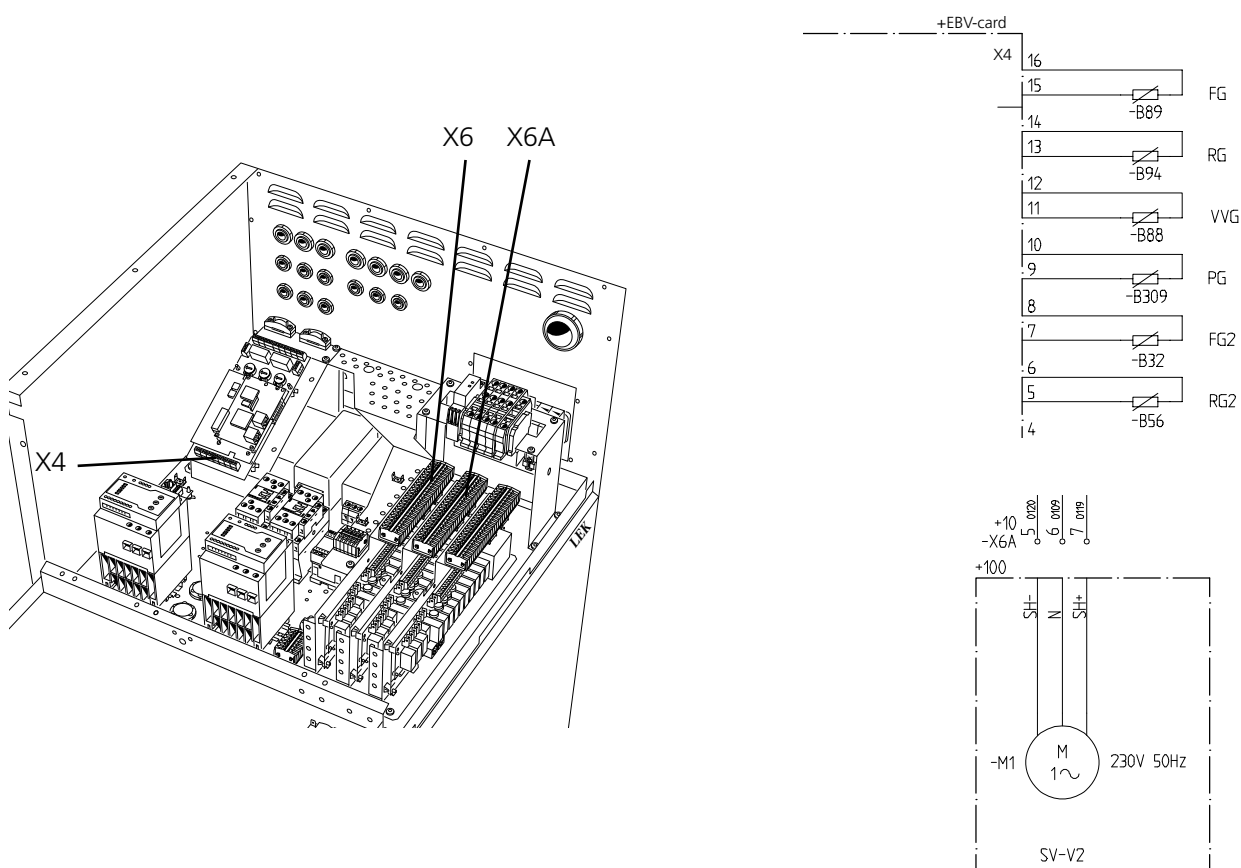
The flow line sensor 2 (FS2) is fitted on the flow line towards heating circuit 2. The sensor must make good contact with the measurement area to give the best function. When a submerged tube is not available, use the supplied copper tube. The sensor is connected to screw terminals X4:7 and X4:8 on the EBV-card".

The return sensor 2 (RG2) is fitted on the flow line towards heating circuit 2. The sensor must have good insulation and make good contact with the measurement area to give the best function. The sensor is connected to screw terminals X4:5 and X4:6 on the EBV-card".

The pump's (VBP4) control signal is connected to the terminal blocks X6:19 (230 V), X6:20 (N), i. e. same connection as VBP3.

The shunt valve (SV-V2) is connected to the terminal blocks X6A:5 (230 V decrease signal), X6A:6 (N) and X6A:7 (230 V increase signal).

Note that F1330 delivers 230 V control signals intended to control external contactors and not to drive pumps.



The heat pump in the picture is fitted with accessories.

Quick guide - menu settings sub shunt**Menu 9.1.4 Sub shunt [S]**

Here the sub shunt is set either On or Off. The factory setting is Off.

Menu 3.1 Curve slope 2 [N]

The selected curve slope for the heating curve is shown here. The value is adjustable between curve 1 and 15, or in position Own curve. The values for own curve are set in menu 3.6.0. The factory setting is 9.

Menu 3.2 Offset heatingcurve 2 [N]

The chosen offset for the heating curve is shown here. The value is adjustable between -10 and +10. The factory setting is 0.

If the RCU is connected, the set offset is shown via RCU between brackets. The actual offset then becomes the total of the set offset and RCU offset.

Menu 3.3 Min. flow temp. 2 [U]

The set minimum level for the flow temperature to the heating system is shown here. The calculated supply temperature never drops below this level irrespective of the outdoor temperature, curve slope or offset heating curve. The value is adjustable between 10 and 65 °C. The factory setting is 15 °C.

Menu 3.4 Max. flow temp. 2 [U]

The set maximum level for the supply temperature to the heating system is shown here. The calculated supply temperature never exceeds this level irrespective of the outdoor temperature, curve slope or offset heating curve. The value is adjustable between 10 and 80 °C. The factory setting is 55 °C.

Menu 3.8 Shunt period time [U]

Here you select the period time, i. e. the time between corrections for the sub shunt (SV-V2). The value is adjustable between 10 and 500 seconds. The factory setting is 120 seconds.

Menu 3.9 Shunt intensificat. [U]

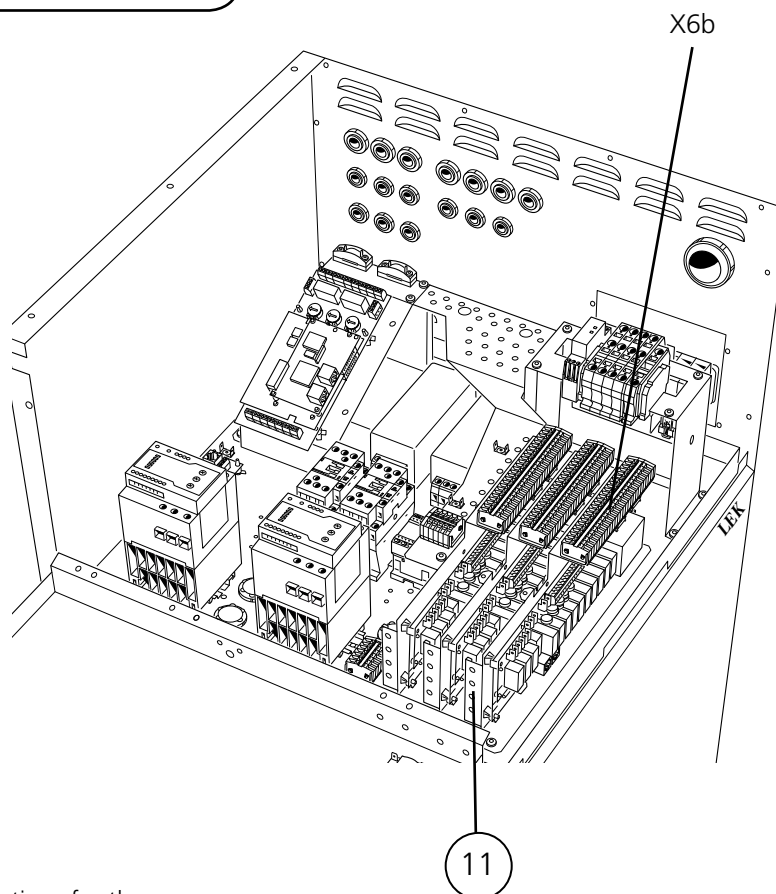
Here you select how many seconds the sub shunt (SV-V2) shall run in relation to the difference between the calculated flow and the true flow. For example, a difference of 2 degrees and a set amplification of 5 gives 10 seconds in control of the sub shunt. The value is adjustable between 1 and 10. The factory setting is 1.

The outline diagram with docking instructions is available at www.nibe.com

Description of functions – Expansion card 12

NOTE!

The accessory "Expansion card 12" (11) with accompanying terminal block X6B is required in order to access the following functions. When it has been connected the card must be activated in menu 9.1.2.

**Docking instructions**

Outline diagrams with docking instructions for the functions on the expansion card 12 is at the address www.nibe.com

The heat pump in the picture is fitted with accessories.

Groundwater pump

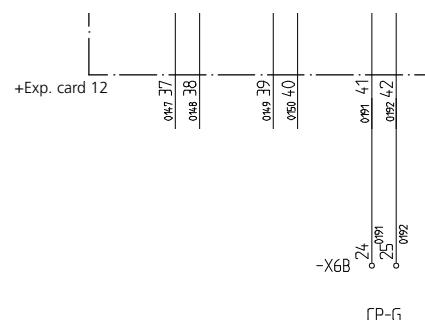
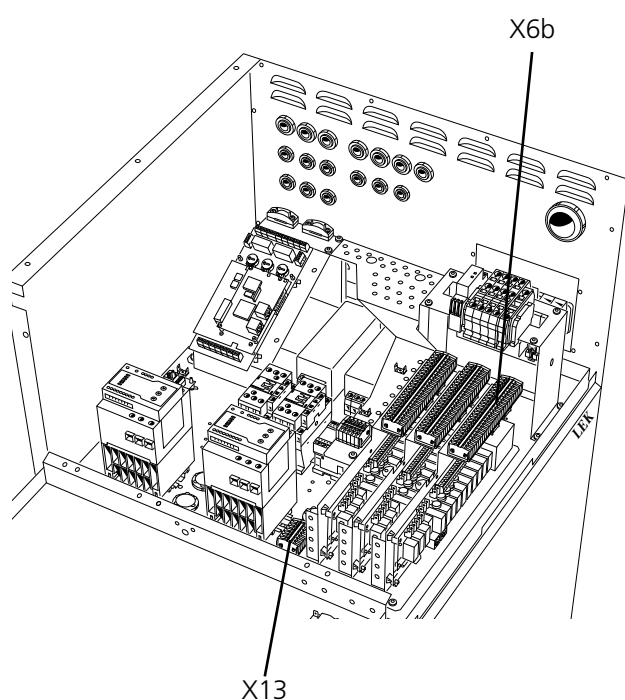
A ground water pump (CP-G) can be controlled by F1330. The pump starts 20 seconds before the first compressor starts and stops 20 seconds after the last compressor stops.

Ground water pump connection

There is a potential free relay for the ground water pump function (CP-G), which can be used as control voltage or power supply (Max 6 A, 250 V).

If the relay is used as control voltage, the supply can be bridged internally from X13:4 to X6B:24, use X13:9 as N and receive the signal on X6B:25, but max current must be 0.4 A and the control voltage is 230 V.

The external supply to the control signal/power supply for the ground water pump (CP-G) is connected to terminal block X6B:24 (max fusing 6 A and 250 V) and the control signal/power supply is on X6B:25.



The heat pump in the picture is fitted with accessories.

The outline diagram with docking instructions is available at www.nibe.com

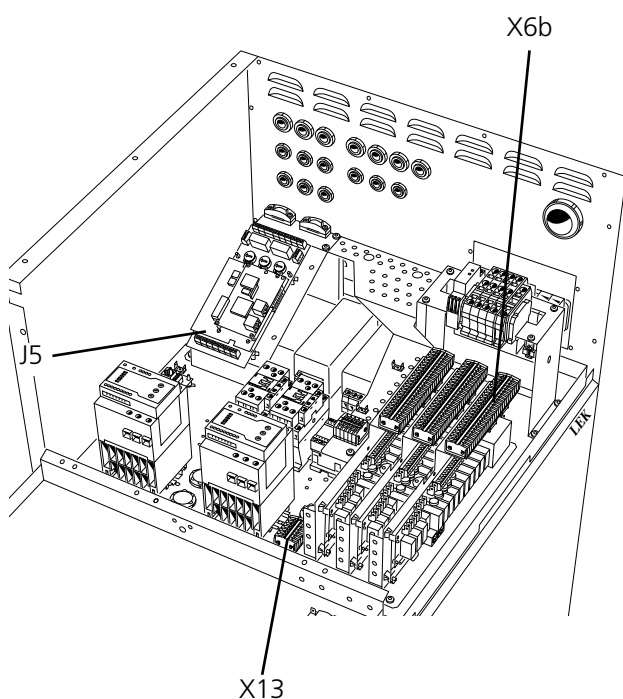
Description of functions – Expansion card 12

Passive cooling with 4 pipe system

The cooling system is connected to the heat pump collector circuit, through which cooling is supplied from the collector via the circulation pump (CP-K) and the shunt valve (SV-K).

When cooling is required (activated from the outdoor sensor and any room sensor) the three way valve and the circulation pump are activated. The shunt valve regulates so that the cooling sensor (KG) reaches the current set point value that is equal to the outdoor temperature and the set min. value for the cooling temperature (to prevent condensation).

For connection of, and function for, room sensors, see section "Description of functions – Basic functions" > "Room control".



Connection of passive cooling with 4 pipe system

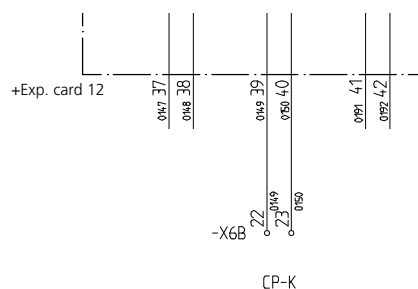
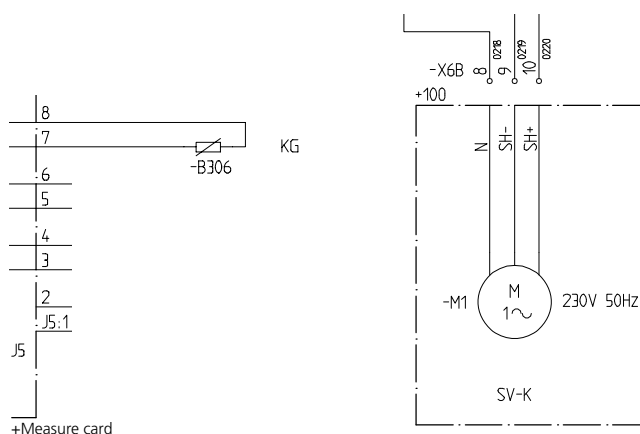
The shunt valve (SV-K) is connected to terminal block X6B:9 (230 V reduce signal), X6B:8 (N) and X6B:10 (230 V increase signal).

There is a potential free relay for the circulation pump function (CP-K), which can be used as control voltage or power supply (Max 6 A, 250 V). If the relay is used as control voltage the supply can be bridged internally from X13:4 to X6B:22, use X13:9 as N and then receive the signal on X6B:23. Max current must be 0.4 A and the control voltage is 230 V.

External supply to the control signal/power supply for the circulation pump (CP-K) is connected to terminal block X6B:22 (max fusing 6 A and 250 V) and the control signal/power supply is on X6B:23.

For the cooling sensor (KG) location see docking instructions. The sensors must have a good contact with the measuring point for best function. If a submerged tube is not available, use the copper tube supplied.

The sensor is connected to screw terminals J5:7 and J5:8 on the "measurement card".



The heat pump in the picture is fitted with accessories.

Quick guide – menu settings for passive cooling with 4 pipe system

Menu 9.1.10 Cooling [S]

The type of cooling system is set here. The selectable modes are: "Off", "HPAC base card", "HPAC expansion card 11", "Cooling accumulator", "PKM 2 pipes" and "PKM 4 pipes". The factory setting is "Off".

Select "PKM 4 pipes".

Menu 6.4.1 Cooling [U]

The cooling functions can be set to "On" or "Off" here. The factory setting is "Off".

Menu 6.4.2 Cooling curve [U]

The selected curve slope (cooling curve) is shown here. The value can be set between 1 and 3. The factory setting is 2.

Menu 6.4.3 Offset cold curve [U]

The selected cooling curve offset is shown here. The value can be set between -10 and +10. The factory setting is 0.

Menu 6.4.4 Start temp. heating [U]

Outdoor temperature (menu 4.0) at the outdoor sensor (UG) when the heat pump is permitted to produce heat. The value can be set between 0 and 30 °C. The factory setting is 20 °C.

Menu 6.4.5 Start temp. cooling [U]

Outdoor temperature (menu 4.0) at the outdoor sensor (UG) when the heat pump is permitted to produce cooling. The value can be set between 0 and 30 °C. The factory setting is 25 °C.

Menu 6.4.9 Min. flow temp. [U]

The lowest flow temperature in cooling mode. The value is adjustable between 2 and 65 °C. The factory setting is 5 °C.

Menu 6.4.10 Period time shunt [U]

The time period for the shunt (SV-K) is chosen here. Adjustable between 1 and 500 seconds. The factory setting is 60 seconds.

Menu 6.4.11 Shunt intensification. [U]

The amplification for the shunt (SV-K) is chosen here. For example, a 2 degree difference between the flow line and the calculated flow line with 5 in amplification gives 10 secs/min controlling the shunt. The value can be set between 1 and 10. The factory setting is 1.

The outline diagram with docking instructions is available at www.nibe.com

Description of functions – Expansion card 12

Passive cooling with 2 pipe system

The collector circuit is connected to a heat exchanger via a three way valve (VXV-KV A/B). The other side of the exchanger is connected to the heating medium circuit via a shunt valve (SV-K) and a circulation pump (CP-K).

When cooling is required (activated from the outdoor sensor and any room sensor) the three way valve and the circulation pump are activated. The shunt valve regulates so that the cooling sensor (KG) reaches the current set point value that is equal to the outdoor temperature and the set min. value for the cooling temperature (to prevent condensation).

For connection of, and function for, room sensors, see section "Description of functions – Basic functions" > "Room control".

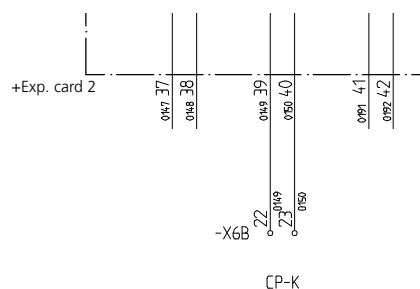
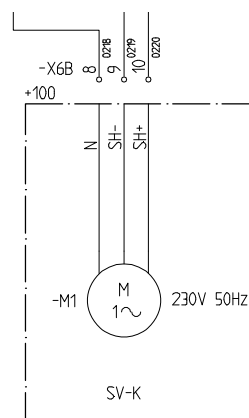
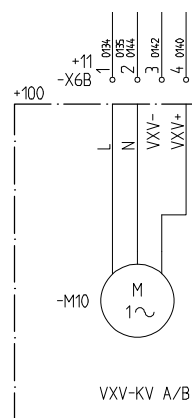
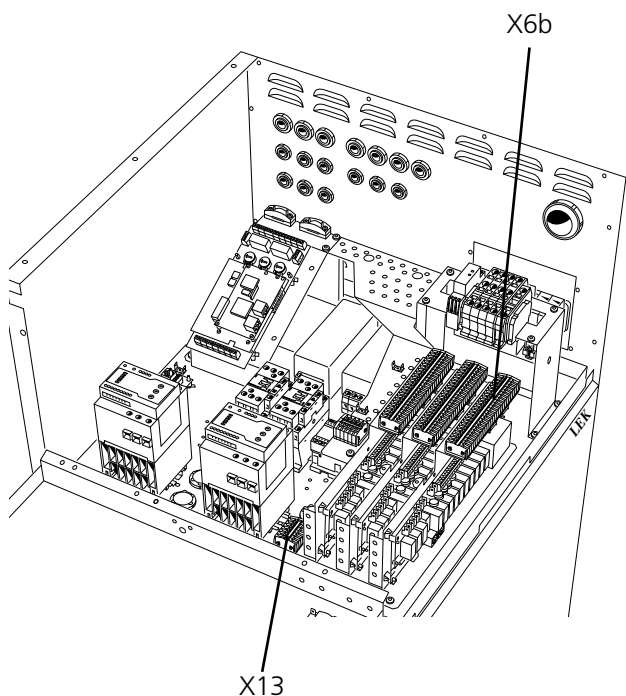
Connection of passive cooling with 2 pipe system

Three way valve (VXV-KV A/B) is connected to terminal block X6B:1 (230 V), X6B:2 (N) and X6B:3 (NC) alternatively X6B:4 (NO).

The shunt valve (SV-K) is connected to terminal block X6B:8 (230 V reduce signal), X6B:9 (N) and X6B:10 (230 V increase signal).

There is a potential free relay for the circulation pump function (CP-K), which can be used as control voltage or power supply (Max 6 A, 250 V). If the relay is used as control voltage the supply can be bridged internally from X13:4 to X6B:22, use X13:9 as N and then receive the signal on X6B:23. Max current must be 0.4 A and the control voltage is 230 V.

External supply to the control signal/power supply for the circulation pump (CP-K) is connected to terminal block X6B:22 (max fusing 6 A and 250 V) and the control signal/power supply is on X6B:23.



The heat pump in the picture is fitted with accessories.

Quick guide – menu settings for passive cooling with 2 pipe system

Menu 9.1.10 Cooling [S]

The type of cooling system is set here. The selectable modes are: "Off", "HPAC base card", "HPAC expansion card 11", "Cooling accumulator", "PKM 2 pipes" and "PKM 4 pipes". The factory setting is "Off".

Select "PKM 2 pipes".

Menu 6.4.1 Cooling [U]

The cooling functions can be set to "On" or "Off" here. The factory setting is "Off".

Menu 6.4.2 Cooling curve [U]

The selected curve slope (cooling curve) is shown here.

The value can be set between 1 and 3.

The factory setting is 2.

Menu 6.4.3 Offset cold curve [U]

The selected cooling curve offset is shown here. The value can be set between -10 and +10. The factory setting is 0.

Menu 6.4.4 Start temp. heating [U]

Outdoor temperature (menu 4.0) at the outdoor sensor (UG) when the heat pump is permitted to produce heat.

The value can be set between 0 and 30 °C.

The factory setting is 20 °C.

Menu 6.4.5 Start temp. cooling [U]

Outdoor temperature (menu 4.0) at the outdoor sensor (UG) when the heat pump is permitted to produce cooling. The value can be set between 0 and 30 °C.

The factory setting is 25 °C.

Menu 6.4.9 Min. flow temp. [U]

The lowest flow temperature in cooling mode.

The value is adjustable between 2 and 65 °C.

The factory setting is 5 °C.

Menu 6.4.10 Period time shunt [U]

The time period for the shunt (SV-K) is chosen here.

Adjustable between 1 and 500 seconds.

The factory setting is 60 seconds.

Menu 6.4.11 Shunt intensification. [U]

The amplification for the shunt (SV-K) is chosen here. For example, a 2 degree difference between the flow line and the calculated flow line with 5 in amplification gives 10 secs/min controlling the shunt. The value can be set between 1 and 10. The factory setting is 1.

Menu 6.4.12 Time betw. heat cold [U]

The time the heat pump must wait between production of heat and cooling is set here. The value can be set between 0 and 10 hours. The factory setting is 3 hours.

The outline diagram with docking instructions is available at www.nibe.com

Combined cooling/heating modes with accumulators

The installation consists of one or more F1330s with accumulator tanks on both the collector and heat medium sides. Ground/rock collector(s) have three way valves so that the accumulator tanks can be utilised as:

1. Heat storage in heating mode
2. Cold storage in passive cooling mode
3. Heat dump in active cooling mode

Heat production occurs via the accumulator tank where the flow line sensor (FG) is located.

The circulation pump (VBP3) circulates the heating medium from the tank to the distribution system.

The brine circulates between the brine tank and the heat pump evaporator. When the temperature is lowered in the tank (small cooling requirement in the system) the circulation pump (CP-KO) is started to retrieve energy from the collector.

When the cooling sensor (KG) requests cooling, the circulation pump (CP-K) starts and the shunt valve (SV-K) starts regulating cooling from the brine tank. In the event of falling temperatures in the tank (KBack) CP-KO is started to retrieve cooling from the collector (passive cooling). When the collector is unable to provide sufficient cooling the heat pump is started to produce active cooling.

In the event of excess heat, this is dumped to the collector or outdoor air via a fan battery outdoors.

Connecting cooling/heating modes with accumulators

NOTE! When dumping the excess heat in the outdoor air, the circulation pumps for dumping (CP-D) must be connected in parallel. The fans in the outdoor air module can also be connected with CP-D. VXV-KV A/B must not be used.

Three way valve (VXV-KV A/B) is connected to terminal block X6B:1 (230 V), X6B:2 (N) and X6B:3 (NC) alternatively X6B:4 (NO).

The control valve (SV-VVX) is connected to terminal block X6B:9 (230 V reduce signal), X6B:8 (N) and X6B:10 (230 V increase signal).

There are three potential free relays for functions CP-D, CP-KO & CP-K, which can be used as control voltage or power supply (Max 6 A, 250 V). If the relay is used as control voltage the supply can be bridged internally from X13:4 to X6B:18, , X6B:20 and X6B:22 and use X13:9 as N and receive the control signal for CP-D on X6B:19, CP-KO on X6B:21 and CP-K on X6B:23. When connected like this the max current must be 1 A from X13:4 and the control voltage is 230 V.

External supply to the control signal/power supply for CP-D is connected to terminal block X6B:18 (max fusing 6 A and 250 V) and the control signal/power supply is on X6B:19.

External supply to the control signal/power supply for CP-KO is connected to terminal block X6B:20 (max fusing 6 A and 250 V) and the control signal/power supply is on X6B:21.

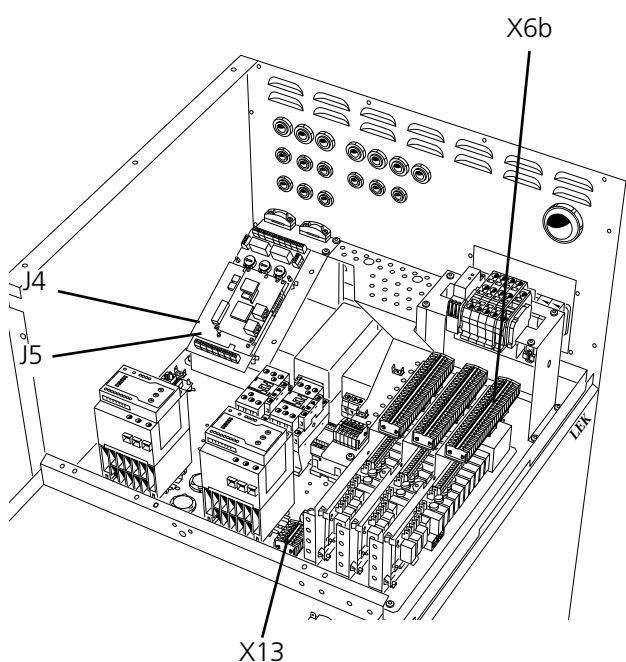
External supply to the control signal/power supply for CP-K is connected to terminal block X6B:22 (max fusing 6 A and 250 V) and the control signal/power supply is on X6B:23.

The sensors must have a good contact with the measuring point for best function. If a submerged tube is not available, use the copper tube supplied.

For the cooling sensor (KG) location see docking instructions. The sensor is connected to screw terminals J5:7 and J5:8 on the "measurement card".

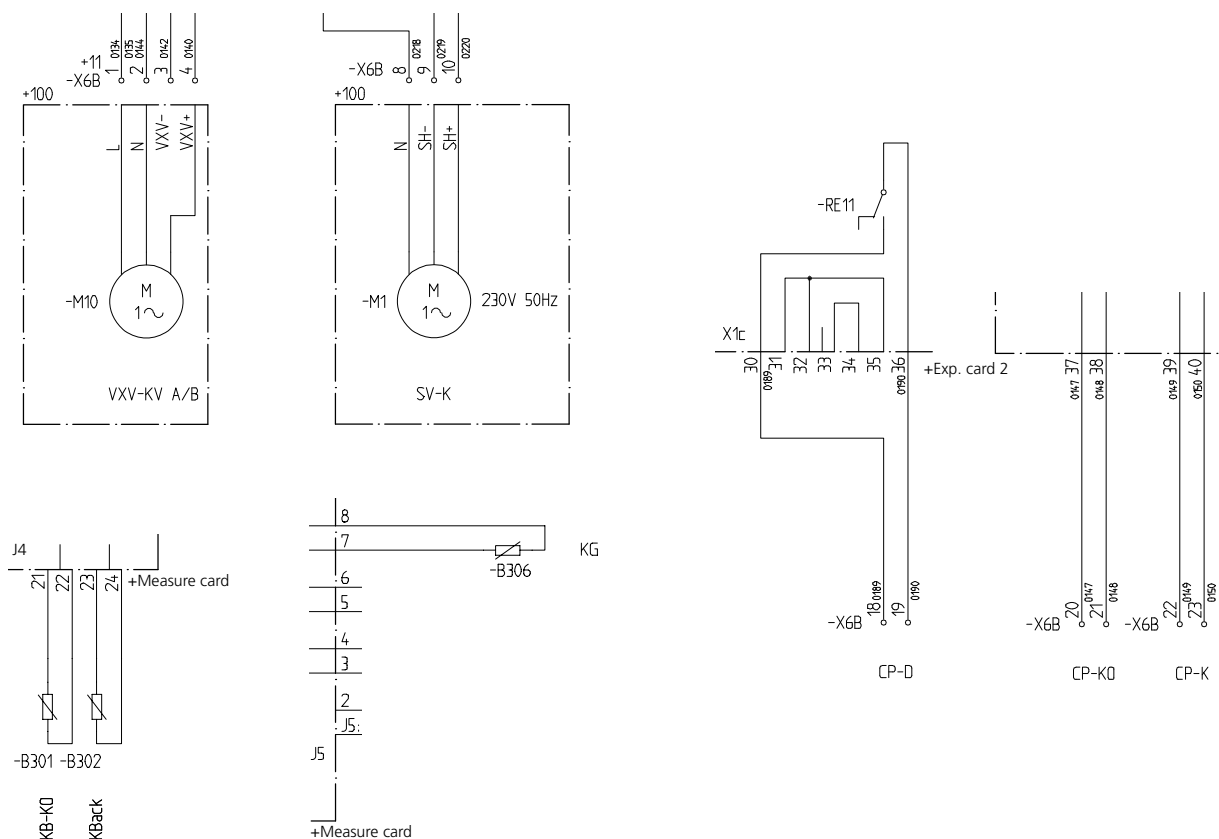
For the sensor KB-KO location see docking instructions. The sensor is connected to screw terminals J4:21 and J4:22 on the "measurement card".

For the cooling sensor (KBack) location see docking instructions. If a submerged tube is not available, use the copper tube supplied. The sensor is connected to screw terminals J4:23 and J4:24 on the "measurement card".



The heat pump in the picture is fitted with accessories.

The outline diagram with docking instructions is available at www.nibe.com



Quick guide – menu settings cooling/heating modes with accumulators

Menu 9.1.10 Cooling [S]

The type of cooling system is set here. The selectable modes are: "Off", "HPAC base card", "HPAC expansion card 11", "Cooling accumulator", "PKM 2 pipes" and "PKM 4 pipes". The factory setting is "Off".

Select "Cooling accumulator".

Menu 6.8.1 Cool acc temperature [N]

Shows the current temperature at the cooling accumulator sensor (KBack).

Menu 6.8.3 Cooling curve [U]

The selected curve slope (cooling curve) is shown here. The value can be set between 1 and 3. The factory setting is 2.

Menu 6.8.4 Offset cooling curve [U]

The selected cooling curve offset is shown here. The value can be set between -10 and +10. The factory setting is 0.

Menu 6.8.5 Start temp. heating [U]

Outdoor temperature (menu 4.0) at the outdoor sensor (UG) when the heat pump is permitted to produce heat. The value can be set between 0 and 30 °C. The factory setting is 20 °C.

Menu 6.8.6 Start temp. cooling [U]

Outdoor temperature (menu 4.0) at the outdoor sensor (UG) when the heat pump is permitted to produce cooling. The value can be set between 0 and 30 °C. The factory setting is 25 °C.

Menu 6.8.7 Temp. to cool. acc. [U]

The desired temperature for the cooling accumulator is set here. The value can be set between 0 and 20 °C. The factory setting is 13 °C.

Menu 6.8.9 Min. flow temp. [U]

The lowest flow temperature in cooling mode. The value is adjustable between 2 and 65 °C. The factory setting is 5 °C.

Menu 6.8.10 Period time shunt [U]

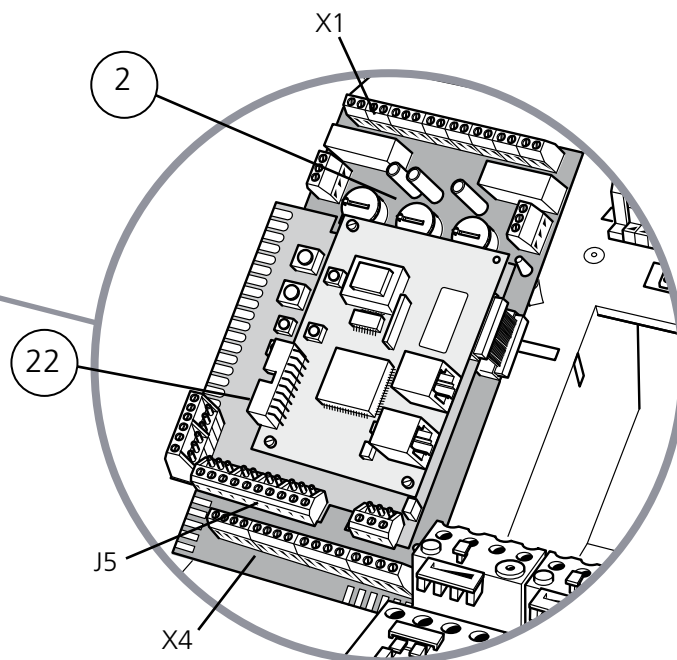
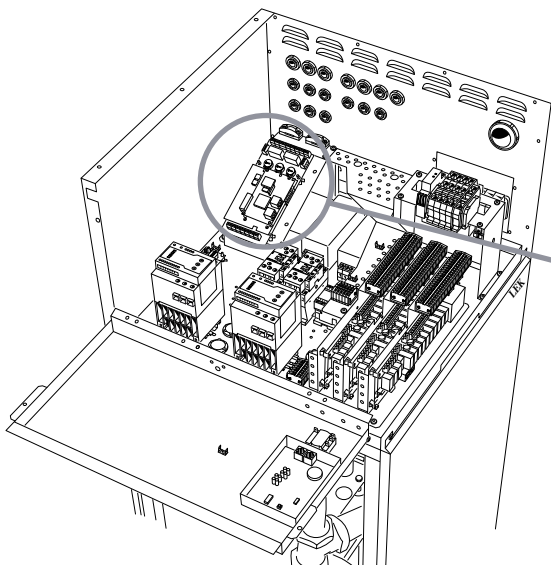
The time period for the shunt (SV-K) is chosen here. Adjustable between 1 and 500 seconds. The factory setting is 60 seconds.

Menu 6.8.11 Shunt intensification. [U]

The amplification for the shunt (SV-K) is chosen here. For example, a 2 degree difference between the flow line and the calculated flow line with 5 in amplification gives 10 secs/min controlling the shunt. The value can be set between 1 and 10. The factory setting is 1.

Description of functions - External control

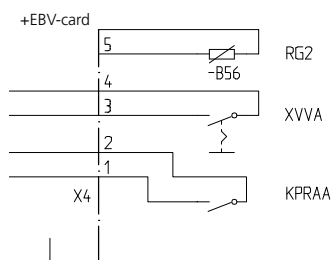
Electrical connection, external control/blocking of the additional heat and compressor



F 1330 can be controlled up to a certain point using signals from an external system (e.g. DUC). All control signals must come from potential free relays.

Activating/blocking compressor A (KPRAA)

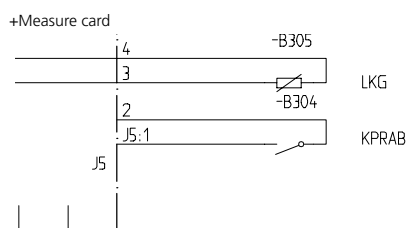
When the input (KPRAA) is made, the compressor will stop irrespective of the operating status and the operating type. When the operating type is set to External control in menu 0.2.x, the compressor A will start with an open input and stop when the input is made. However, alarms and time conditions in F1330 are superordinate to the external control.



Connection is made to terminals X4:1 and X4:2 on the EBV-card (2).

Activating/blocking compressor B (KPRAB)

Same function as above, but for compressor module B. Connection is made to terminals J5:1 and J5:2 on the Measure card (22).



External Extra hot water activation (XVVA)

If the input (XVVA) is made for at least one second, Extra hot water will be activated for 12 hours. See Description of functions - Basic functions > Extra hot water for more information.

Connection is made to terminals X4:3 and X4:4 on the EBV-card (2).

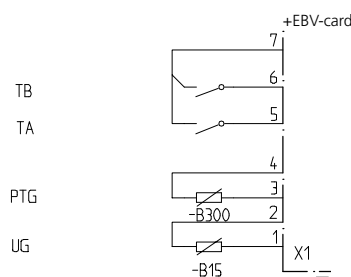
Tariff A (TA)

Input (TA) can be used to select additional heat type (oil or electricity) if additional heat in menu 9.1.8 is selected as "El/Oil". See "Functions description- Basic functions" > "Electrical addition" and "Function description- Basic functions" > "Oil addition" for further descriptions.

Connection is made to terminals X1:5 and X1:7 on the EBV-card (2).

Tariff B (TB)

When the input (TB) is made all electrical additional heating is stopped. See Description of functions - Basic functions > Electrical additional heater for further details. Connection is made to terminals X1:6 and X1:7 on the EBV-card (2).



The heat pump in the picture is fitted with accessories.

Control

General

The menu tree shows all the menus. Three different menu types can be chosen.

- [N]** Normal, the menus the user needs for a quick production control.
- [U]** Extended, shows all menus except the service menus.
- [S]** Service, shows all menus. Returns to the previously selected menutype 30 minutes after the last button was pushed.

Changing of menu type is done from menu 8.1.1

Information is provided on the display about the heat pump's operating status. A screen saver is normally shown on the display screen. The plus and minus buttons and the enter button can be used to scroll through the menu system as well as to change the set value in some menus.

-  The plus button is used to move forward to the next menu on the current menu level and to increase the value of the parameter in menus where this is possible.
-  The minus button is used to move back to the previous menu on the current menu level and to decrease value of the parameter in menus where this is possible.
-  The enter button is used to select sub-menus of the current menu, to permit parameters to be changed and confirm any changes to parameters. When the menu number ends with "0" this indicates there is a sub-menu.

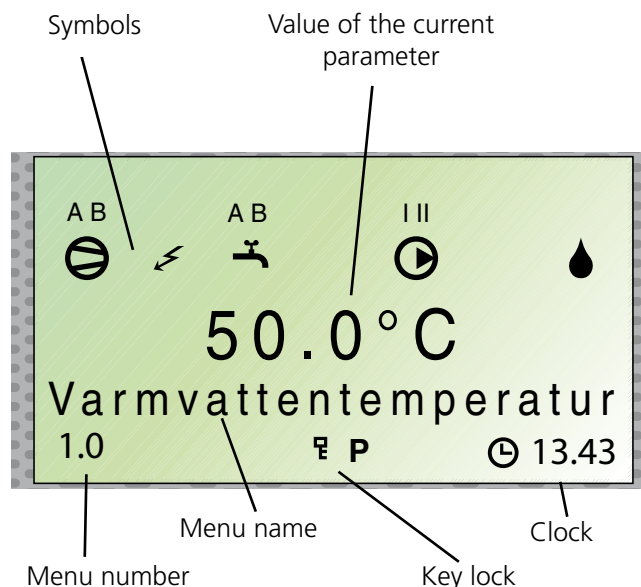
Quick movement

To quickly return to the main menu from sub-menus press the following:

- Operating mode button
- Enter button

NOTE!

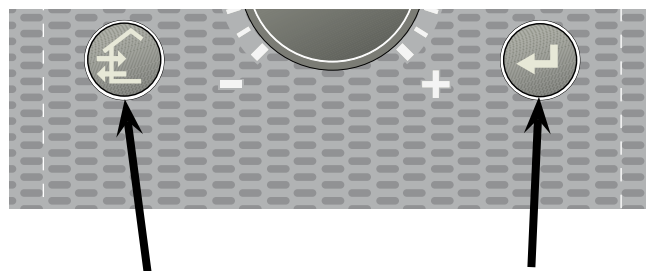
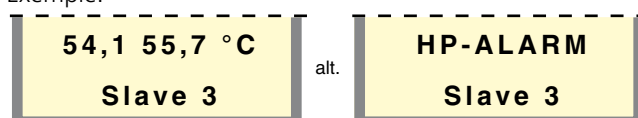
Ensure the operating mode is not changed during quick movement.



Screen saver

In screen saver mode, you can see any alarms as well as the flow temperatures currently given by the compressors (VBFA and VBFB) and whether the heat pump is a Master or Slave. **The screen saver is deactivated by pressing the enter button and the button in the lower left for approximately 8 seconds.** Menu 1.0 is then displayed. The screen saver comes on automatically 30 minutes after the last button was pressed and when starting the heat pump.

Example:



Key lock

A key lock can be activated in the main menus by simultaneously pressing the plus and the minus buttons. The key symbol will then be shown on the display. The same procedure is used to deactivate the key lock.

Changing a parameter

Changing a parameter (value):

- Access the required menu.
- Press the enter button, the numerical value starts to flash
- Increase or decrease the value using the plus respective minus button.
- Confirm by pressing the enter button.
- Menu 1.0 is automatically displayed again 30 minutes after pressing the last button.

Example

Changing the Menu type, menu 8.1.1.

- The starting point is menu 1.0.
- Press the plus or minus button several times until menu 8.0 is shown.
- Press the enter button to move to menu 8.1.0
- Press the enter button to move to menu 8.1.1
- Press the enter button to allow the value to be changed.
- The value now starts to flash. Change the value using the plus or minus buttons.
- Confirm the selected value by pressing the enter button, the value will then stop flashing.
- Press the minus button to move to menu 8.1.5
- Press the enter button to return to menu 8.1.0
- Press the plus button 3 times to move to menu 8.4
- Press the enter button to return to menu 8.0
- Press the plus or minus button several times to move to menu 1.0

8.0 Other settings [N]	
8.1.0 Display settings [N]	8.1.1 Menu type [N]
	8.1.2 Language [N]
	8.1.3 Display contrast [N]
	8.1.4 Light intensity [N]
	8.1.5 Return to 8.1.0 [N]
8.2.0 Operatingmode setting [U]	8.2.1 Only additional heat [U]
	8.2.2 Changing temperature [U]
	8.2.3 Start value compr. [U]
	8.2.4 GM for compr.step [U]
	8.2.5 Additive start value [U]
	8.2.6 GM for additive step [U]
	8.2.7 Flow diff HP [U]
	8.2.8 Diff HP-Add [U]
	8.2.9 Return to 8.2.0 [U]
8.3.0 Load monitor [U]	8.3.1 Fuse size [U]
	8.3.2 Max electric power [U]
	8.3.3 Current phase 1 [U]
	8.3.4 Current phase 2 [U]
	8.3.5 Current phase 3 [U]
	8.3.6 Ratio of transf. EBV [U]
	8.3.7 Tariff status [U]
	8.3.8 Return to 8.3.0 [U]
8.4 Return to 8.0 [N]	

[N] Normal menus: Displayed in all menu modes.

[U] Extended menus: Only displayed when **extended** or **service** is selected in menu 8.1.1.

[S] Service menus: Only displayed when **service** is selected in menu 8.1.1

Menu tree

0.0 System [N]

0.1.0 Status [N]	0.1.1 Status Master:A [N]
	0.1.2 Status Master:B [N]
	0.1.3 Status Slave 1:A* [N]
	0.1.4 Status Slave 1:B* [N]
	0.1.5 Status Slave 2:A* [N]
	0.1.6 Status Slave 2:B* [N]
	0.1.7 Status Slave 3:A* [N]
	0.1.8 Status Slave 3:B* [N]
	0.1.9 Status Slave 4:A* [N]
	0.1.10 Status Slave 4:B* [N]
	0.1.11 Status Slave 5:A* [N]
	0.1.12 Status Slave 5:B* [N]
	0.1.13 Status Slave 6:A* [N]
	0.1.14 Status Slave 6:B* [N]
	0.1.15 Status Slave 7:A* [N]
	0.1.16 Status Slave 7:B* [N]
	0.1.17 Status Slave 8:A* [N]
	0.1.18 Status Slave 8:B* [N]
	0.1.19 Return to 0.1.0 [N]
0.2.0 Oper.type setting [S]	0.2.1 Oper. type Master [S]
	0.2.2 Oper. type Slave 1 [S]
	0.2.3 Oper. type Slave 2 [S]
	0.2.4 Oper. type Slave 3 [S]
	0.2.5 Oper. type Slave 4 [S]
	0.2.6 Oper. type Slave 5 [S]
	0.2.7 Oper. type Slave 6 [S]
	0.2.8 Oper. type Slave 7 [S]
	0.2.9 Oper. type Slave 8 [S]
	0.2.10 Return to 0.2.0 [S]
0.3 Return to 0.0 [N]	

* Slaves 1-8 are only shown when made operational in menu 0.2.x

1.0 Hotwater temp. [N]

1.1 Start temperature HW [U]	
1.2 Stop temperature HW [U]	
1.3 Stop temp. compr XHW [U]	
1.4 Stop temperature XHW [U]	
1.5 Interval per. XHW [U]	
1.6 Periodtime HW/Heat. [U]	
1.7 Maxtime HW-product. [U]	
1.8 Diff between compr. [U]	
1.9.0 HW with additional heat [U]	1.9.1 Start temp. additional heat [U]
	1.9.2 Stop temp. additional heat [U]
	1.9.3 Return to 1.9.0 [N]
1.10 Return to 1.0 [N]	

2.0 Flow temperature [N]

2.1 Curve slope [N]	
2.2 Offset heating curve [N]	
2.3 Min. flow temp. [U]	
2.4 Max. flow temp. [U]	
2.5 External adjustment [U]	
2.6.0 Own curve definition [U]	2.6.1 Flow temp.at -20°C [U]
	2.6.2 Flow temp.at +20°C [U]
	2.6.3 Set buckling Temp. [U]
	2.6.4 Flowtemp.at buckling [U]
	2.6.5 Return to 2.6.0 [U]
2.7.0 Fixed condensing [U]	2.7.1 Start temp.compressor [U]
	2.7.2 Stoptemp. compressor [U]
	2.7.3 Starttemp. additive [U]
	2.7.4 Stoptemp. additive [U]
	2.7.5 Return to 2.7.0 [U]
2.8 Return temperature [N]	
2.9 Degree minutes [N]	
2.10 Return to 2.0 [N]	

3.0 Flow temperature 2* [N]

3.1 Curve slope 2 [N]	
3.2 Offset heatingcurve 2 [N]	
3.3 Min. flow temp. 2 [U]	
3.4 Max. flow temp. 2 [U]	
3.5 External adjustment2 [U]	
3.6.0 Own curve definit.2 [U]	3.6.1 Flow temp.at -20°C [U]
	3.6.2 Flow temp.at +20°C [U]
	3.6.3 Set buckling Temp. [U]
	3.6.4 Flowtemp.at buckling [U]
	3.6.5 Return to 3.6.0 [U]
3.7 Return temperature 2 [N]	
3.8 Shunt period time 2 [U]	
3.9 Shunt intensificat. 2 [U]	
3.10 Return to 3.0 [N]	

* Accessories

4.0 Outdoor temp. [N]

4.1 Medium outdoor temp. [N]
4.2 Return to 4.0 [N]

Control

5.0 Heat pump  [N]	
5.1 Heat pump unit [N]	
5.2.0 Compressor module A  [N]	5.2.1 Heating flow/return [N]
	5.2.2 Brine in/out [N]
	5.2.3 Hot gas temperature [U]
	5.2.4 Overheating temp. [U]
	5.2.5 Liquide line temp. [U]
	5.2.6 Tot. starts compr. A [U]
	5.2.7 Opera.time compr. A [U]
	5.2.8 Return to 5.2.0  [N]
5.3.0 Compressor module B  [N]	5.3.1 Heating flow/return [N]
	5.3.2 Brine in/out [N]
	5.3.3 Hot gas temperature [U]
	5.3.4 Overheating temp. [U]
	5.3.5 Liquide line temp. [U]
	5.3.6 Tot. starts compr. B [U]
	5.3.7 Opera.time compr. B [U]
	5.3.8 Return to 5.3.0  [N]
5.4.0 Settings  [U]	5.4.1 Max.heat returntemp. [U]
	5.4.2 Min brine out [U]
	5.4.3 Max brine in [U]
	5.4.4 Level monitor [U]
	5.4.5 Start to start time [U]
	5.4.6 Oper. mode brinepump [U]
	5.4.7 Oper.mode heatpump A [U]
	5.4.8 Oper.mode heatpump B [U]
	5.4.9 Quickstart of compr. [U]
	5.4.10 Factory pre-set [U]
	5.4.11 Reset alarm [U]
	5.4.12 Pool heat comp A [U]
	5.4.13 Pool heat comp B [U]
	5.4.14 Return to 5.4.0  [N]
5.5.0 Sensor calibration  [S]	5.5.1 Heating return A [S]
	5.5.2 Heating return B [S]
	5.5.3 Brine in [S]
	5.5.4 Brine out A [S]
	5.5.5 Brine out B [S]
	5.5.6 Outdoor temp.sensor [S]
	5.5.7 Room temp. sensor [S]
	5.5.8 Flow temp. sensor 1 [S]
	5.5.9 Flow temp. sensor 2 [S]
	5.5.10 Return to 5.5.0  [S]
5.6 Return to 5.0  [N]	

6.0 External units*  [N]	
6.1.0 Circulation pumps  [U]	6.1.1 Op-mode external cp [U]
	6.1.2 Periodtime economy [U]
	6.1.3 Operati-time economy [U]
	6.1.4 Time of period Hw-cp [U]
	6.1.5 Periodtime Hw-cp [U]
	6.1.6 Operatingtime Hw-cp [U]
	6.1.7 Return to 6.1.0  [U]
6.2.0 Immersionheater settings  [N]	6.2.1 Immersionheater type [U]
	6.2.2 Immersionheatrelays [U]
	6.2.3 Steps at 2h delay [U]
	6.2.4 Quickstart el.heater [U]
	6.2.5 Time factor el.cass. [U]
	6.2.6 Return to 6.2.0  [U]
6.3.0 Boiler settings  [N]	6.3.1 Oil boiler time [U]
	6.3.2 Start temp. shunt [U]
	6.3.3 Period time shunt [U]
	6.3.4 Shuntintensification [U]
	6.3.5 Timefactor oilboiler [U]
	6.3.6 Return to 6.3.0  [U]
6.4.0 HPAC/PKM settings  [U]	6.4.1 Cooling [U]
	6.4.2 Cooling curve [U]
	6.4.3 Offset cold curve [U]
	6.4.4 Starttemp. heating [U]
	6.4.5 Starttemp. cooling [U]
	6.4.6 Start active cooling [U]
	6.4.7 GM for compr.-step [U]
	6.4.8 Diff Passive/Active [U]
	6.4.9 Min. flow temp. [U]
	6.4.10 Periodtime shunt [U]
	6.4.11 Shunt intensificat [U]
	6.4.12 Time betw. heat cold [U]
	6.4.13 Return to 6.4.0  [U]
6.5.0 Pool settings  [N]	6.5.1 Start temp. pool [U]
	6.5.2 Stop temp. pool [U]
	6.5.3 Periodtime heat/pool [U]
	6.5.4 Max-time heatproduct [U]
	6.5.5 Max compr. to pool [U]
	6.5.6 Return to 6.5.0  [U]
6.6.0 HW storage vessel  [N]	6.6.1 Loading temperature [U]
	6.6.2 Per.-time ctrl.valve [U]
	6.6.3 Ctrl.valve intensific. [U]
	6.6.4 Zero [U]
	6.6.5 Return to 6.6.0  [U]
6.7.0 Collector  [N]	6.7.1 Load collector temp. [N]
	6.7.2 Soil sensor temp. [N]
	6.7.3 Mindiff for collect. [U]

[N] Normal menus: Displayed in all menu modes.

[U] Extended menus: Only displayed when **extended** or **service** is selected in menu 8.1.1.

[S] Service menus: Only displayed when **service** is selected in menu 8.1.1

6.0 External units*  [N]	
	6.7.4 Maxdiff for collect. [U]
	6.7.5 Contload bripu col/e [U]
	6.7.6 Load collector only [U]
	6.7.7 Return to 6.7.0  [N]
6.8.0 Cooling settings  [N]	6.8.1 Cool acc temperature [N]
	6.8.2 Brine collector [N]
	6.8.3 Cooling curve [U]
	6.8.4 Offset cooling curve [U]
	6.8.5 Start temp. heating [U]
	6.8.6 Start temp. cooling [U]
	6.8.7 Temp. to cool. acc. [U]
	6.8.8 Cooldiff for acc. [U]
	6.8.9 Min. flow temp. [U]
	6.8.10 Periodtime shunt [U]
	6.8.11 Shunt intensificat. [U]
	6.8.12 Return to 6.8.0  [U]
6.9.0 Room sensor  [N]	6.9.1 Room balancing [U]
	6.9.2 Room balancingsystem [U]
	6.9.3 Desired room temp [U]
	6.9.4 Return to 6.9.0  [U]
6.10 Return to 6.0  [N]	

8.0 Other settings  [N]	
8.1.0 Display settings  [N]	8.1.1 Menu type [N]
	8.1.2 Language [N]
	8.1.3 Display contrast [N]
	8.1.4 Light intensity [N]
	8.1.5 Return to 8.1.0  [N]
8.2.0 Operatingmodesetting  [U]	8.2.1 Only additional heat [U]
	8.2.2 Changing temperature [U]
	8.2.3 Start value compr. [U]
	8.2.4 GM for compr.step [U]
	8.2.5 Additive start value [U]
	8.2.6 GM for additive step [U]
	8.2.7 Flow diff HP [U]
	8.2.8 Diff HP-Add [U]
	8.2.9 Return to 8.2.0  [U]
8.3.0 Load monitor  [U]	8.3.1 Fuse size [U]
	8.3.2 Max electric power [U]
	8.3.3 Current phase 1 [U]
	8.3.4 Current phase 2 [U]
	8.3.5 Current phase 3 [U]
	8.3.6 Ratio of transf. EBV [U]
	8.3.7 Tariff status [U]
	8.3.8 Return to 8.3.0  [U]
8.4 Return to 8.0  [N]	

* Accessories

7.0 Clock  [N]	
7.1 Date [N]	
7.2 Time [N]	
7.3.0 Temp set back time 1  [N]	7.3.1 Temp set back time 1 [U]
	7.3.2 Offset heating curve [U]
	7.3.3 - Set time Monday - [U]
	- 7.3.9 - Sunday [U]
	7.3.10 Return to 7.3.0  [U]
7.4.0 Temp set back time 2  [U]	7.4.1 Temp set back time 2 [U]
	7.4.2 Offset heating curve [U]
	7.4.3 - Set time Monday - [U]
	- 7.4.9 - Sunday [U]
	7.4.10 Return to 7.4.0  [U]
7.5.0 Timer Extra Hotwater  [U]	7.5.1 Timer Extra Hotwater [U]
	7.5.2 - Extra HW Monday - [U]
	- 7.5.8 - Sunday [U]
	7.5.9 Return to 7.5.0  [U]
7.6 Return to 7.0  [N]	

9.0 Service menues  [N]			
9.1.0 System settings  [S]	9.1.1	Expansion card 11	[S]
	9.1.2	Expansion card 12	[S]
	9.1.3	RCU	[S]
	9.1.4	Sub shunt	[S]
	9.1.5	Pool	[S]
	9.1.6	Hot water acc. tank	[S]
	9.1.7	Fixed condensing	[S]
	9.1.8	Additive	[S]
	9.1.9	Extra collector	[S]
	9.1.10	Cooling	[S]
	9.1.11	Room control mode	[S]
	9.1.12	HW with additional heat	[S]
	9.1.13	Return to 9.1.0  [S]	
9.2.0 Floor drying setting  [S]	9.2.1	Op-mode floor drying	[S]
	9.2.2	Floor drying day	[S]
	9.2.3	Nos. of days per. 1	[S]
	9.2.4	Temperature per. 1	[S]
	9.2.5	Nos. of days per. 2	[S]
	9.2.6	Temperature per. 2	[S]
	9.2.7	Return to 9.2.0  [S]	
9.3.0 Alarm log  [S]	9.3.1.0		
	- 9.3.6.0 Alarm 1 - 6  [S]	9.3.x.1	Type of alarm [S]
		9.3.x.2	Heat pump [S]
		9.3.x.3	Date [S]
		9.3.x.4	Time [S]
		9.3.x.5	Outdoor temperature [S]
		9.3.x.6	Hot watertemperature [S]
		9.3.x.7	Flow temperature. [S]
		9.3.x.8	Heating flow/return [S]
		9.3.x.9	Brine in/out [S]
		9.3.x.10	Hot gas temperature [S]
		9.3.x.11	Overheating temp. [S]
		9.3.x.12	Liquide line temp. [S]
		9.3.x.13	Relay status 1 - 8 [S]
		9.3.x.14	Relay status 9 - 14 [S]
		9.3.x.15	Compressor status [S]
		9.3.x.16	Return to 9.3.x.0  [S]
	9.3.7	Clear the alarm log	[S]
	9.3.8	Return to 9.3.0  [S]	
9.4.0 Testing mode  [S]	9.4.1	Force control	[S]
	9.4.2	Relay card	[S]
	9.4.3	Relay 1 - 8	[S]
	9.4.4	Relay 9 - 14	[S]
	9.4.5	Return to 9.4.0  [S]	
9.5	Return to 9.0	 [S]	

[N] Normal menus: Displayed in all menu modes.

[U] Extended menus: Only displayed when **extended** or **service** is selected in menu 8.1.1.

[S] Service menus: Only displayed when **service** is selected in menu 8.1.1

Main menus

[N]

System
0.0

Menu 0.0 System

Here the current status of the various heat pump modules are shown and settings concerning Master or Slave can also be made.

[N]

54.1 °C
Hotwater temperature
1.0

Menu 1.0 Hotwater temperature

The current water temperature (VVG) is shown here.

[N]

31.7(28.0) °C
Flow temperature
2.0

Menu 2.0 Flow temperature

The current flow temperature (FG) for the heating system is shown here with the calculated flow temperature in brackets.

[N]

25.7(24.0) °C
Flow temperature 2
3.0

Menu 3.0 Flow temperature 2*

The current flow temperature (FG2) for the heating system is shown here with the calculated flow temperature in brackets. This menu is first shown when "To" been selected in menu 9.1.4.

[N]

10.3 °C
Outdoor temperature
4.0

Menu 4.0 Outdoor temperature

The current outdoor temperature is shown here. Measured via the outdoor sensor (UG).

[N]

Heat pump
5.0

Menu 5.0 Heat pump

Values can be read and various settings can be made concerning each connected heat pump from these sub-menus.

[N]

External units
6.0

Menu 6.0 External units

Values can be read and various settings can be made from these sub-menus. Many of the sub-menus to 6.0 require accessories.

[N]

Clock
7.0

Menu 7.0 Clock

Settings regarding the date and time are made in the sub-menus of this menu. Even different temperature reductions and increases at selected times are set from this menu.

[N]

Other settings
8.0

Menu 8.0 Other settings

Settings regarding the menu type, language, operating settings and load monitor reading are made in the sub-menus to this menu.

[S]

Service menus
9.0

Menu 9.0 Service menus

This menu and its sub-menus are only shown when access has been selected in menu 8.1.1.

Values can be read and various settings can be made from these sub-menus. NOTE! These settings should only be made by persons with the necessary expertise.

* Accessories

0.0 System

Menu 0.1.0 Status [N]

The number of compressor modules that produce hot water (HW), radiator heating (Rad), pool heating (Pool) or cooling (Cold) are shown here.

Menu 0.1.1 Status Master A [N]

The current mode of compressor module A is shown here:

Heat / Hot water / Ext. control / Wait xx min / Alarm

Menu 0.1.2 Status Master B [N]

The current mode of compressor module B is shown here:

Heat / Hot water / Ext. control / Wait xx min / Alarm

Menu 0.1.3 – 0.1.18 Status Slave 1A – Slave 8B* [N]

The current mode of for compressor modules A or B in every Slave is shown here:

Heat / Hot water / Ext. control / Waiting / Alarm

Menu 0.1.19 Return [N]

Pressing the Enter button returns you to menu 0.1.0

Menu 0.2.0 Oper.type setting [S]

Pressing the enter button takes you to the sub-menus where the heat pump's operating type is selected, options are:

Off: Compressor modules A and B are not used.

Heat: Compressor modules A and B only provide heating.

Hot water: Compressor modules A and B only provide hot water.

Combi: Compressor module B provides both hot water and heating via the shuttle valve, while compressor module A always provides heating.

Parallel: Compressor modules A and B provide both hot water and heating via the shuttle valve.

External control: Start and stopsignal from external equipment.

Menu 0.2.1 Oper.type Master [S]

The operating type for the Master is selected here. The factory setting is Off.

Menu 0.2.2 – 0.2.9 Oper.type Slave 1 – 8 [S]

The operating type for the slave/slaves is selected here. The factory setting is Off.

Menu 0.2.10 Return [S]

Pressing the enter button returns you to menu 0.2.0.

Menu 0.3 Return [N]

Pressing the enter button returns you to menu 0.0.

* Slaves 1-8 are only shown when activated in menu 0.2.2 - 0.2.9.

1.0 Hotwater temperature

Menu 1.1 Start temperature HW [U]

The temperature when the heat pump starts to work with the hot water production is set here. When brackets are shown, this means the high pressure pressostat has tripped during hot water charging and F1330 has automatically lowered the set temperature with the value in brackets. The reduction is removed when the value is manually changed. The value is adjustable between 5 and 55 °C. The factory setting is 45 °C.

Menu 1.2 Stop temperature HW [U]

The temperature when the heat pump stops working with the hot water production is set here. When brackets are shown, this means the high pressure pressostat has tripped during hot water charging and F1330 has automatically lowered the set temperature with the value in brackets. The reduction is removed when the value is manually changed. The value is adjustable between 20 and 60 °C. The factory setting is 50 °C.

Menu 1.3 Stop temp. compr XHW [U]

Here the temperature at which the compressor shall stop producing hot water in Extra hot water and allow the additional heat (XVV) to take over is set. The value is adjustable between 20 and 60 °C, or Off. The factory setting is 50 °C.

Menu 1.4 Stop temperature XHW [U]

The required temperature for Extra hot water, when the additional heat shall stop during hot water production is set here. The value is adjustable between 50 and 80 °C, or Off. The factory setting is Off.

Menu 1.5 Interval per. XHW [U]

How often the hot water temperature is increased from the normal level to the "Extra hot water" level is shown here. Periodic "Extra hot water" is activated when the value changes. The digit within brackets indicates the time in days that remain until the next periodic "Extra hot water" increase. When periodic hot water heating runs, the number between brackets changes to show the number of minutes that remain before it is ready. The value is adjustable between 1 and 90 days, or "Off". The factory setting is "Off".

Menu 1.6 Periodtime HW/Heat. [U]

The length of the period time for hot water production and heating is set here. The value is adjustable between 5 and 60 minutes. The factory setting is 60 minutes.

Menu 1.7 Maxtime HW-product. [U]

Here you select how much time of the period time (menu 1.6) is to be used to heat the hot water when there is a need of both heating and hot water. The value is adjustable between 0 and 60 minutes. The factory setting is 60 minutes.

Menu 1.8 Diff between compr. [U]

The difference between connection and disconnection of compressors during hot water charging and fixed condensing if several are available for hot water charging. The value is adjustable between 0 and 10 °C. The factory setting is 0.5 °C.

Menu 1.9.0 Hot water with additional heat [U]

This menu is displayed if "On" is selected in menu 9.1.12.

Menu 1.9.1 Start temperature additional heat [U]

The temperature at which additional heat is to start is shown here. The value is adjustable between 5 and 70 °C. The factory setting is 45 °C.

Menu 1.9.2 Stop temperature additional heat [U]

The temperature at which additional heat is to stop is selected here. The value can be adjusted between 5 and 70 °C.

The factory setting is 50 °C.

Menu 1.9.3 Return [U]

Pressing the enter button returns you to menu 1.9.0

Menu 1.10 Return [N]

Pressing the enter button returns you to menu 1.0

2.0 Flow temperature**Menu 2.1 Curve slope [N]**

The selected curve slope for the heating curve is shown here. The value is adjustable between curve 1 and 15, or in position Own curve. The values for own curve are set in menu 2.6.0. The factory setting is 9.

Menu 2.2 Offset heating curve [N]

The chosen offset for the heating curve is shown here. The value is adjustable between -10 and +10. NOTE! The value cannot be changed using the plus and minus buttons, only by using the Offset heating curve knob on the Master unit. If the RCU is connected, the set offset is shown via RCU between brackets. The actual offset then becomes the total of the set offset and RCU offset.

Menu 2.3 Min. flow temp. [U]

The set minimum level for the flow temperature to the heating system is shown here. The calculated supply temperature never drops below this level irrespective of the outdoor temperature, curve slope or offset heating curve. The value is adjustable between 2 and 65 °C. The factory setting is 15 °C.

Menu 2.4 Max. flow temp. [U]

The set maximum level for the supply temperature to the heating system is shown here. The calculated supply temperature never exceeds this level irrespective of the outdoor temperature, curve slope or offset heating curve. The value is adjustable between 10 and 80 °C. The factory setting is 55 °C.

Menu 2.5 External adjustment [U]

When the thermostat is selected in menu 9.1.11, you can connect an external contact, see Description of functions - Basic functions > Room control. Using an external contact, for example, a room thermostat or a timer allows you to temporarily or periodically raise or lower the flow temperature and with that the room temperature. When the external contact is made, the heating curve offset is changed by the number of steps shown here. The value is adjustable between -10 and +10. The factory setting is 0.

Menu 2.6.0 Own curve definition [U]

Your own curve definition is chosen here. This is an individual linear curve with one break point. You select a break point and the associated temperatures. NOTE! The Curve slope in menu 2.1 must be set to Own curve to activate this.

Menu 2.6.1 Flow temp. at -20 °C [U]

The flow temperature is selected here with at an outdoor temperature of -20 °C. The value is adjustable between 10 and 80 °C. The factory setting is 55 °C.

Menu 2.6.2 Flow temp. at +20 °C [U]

The flow temperature is selected here with at an outdoor temperature of +20 °C. The value is adjustable between 10 and 80 °C. The factory setting is 18 °C.

Menu 2.6.3 Set buckling temp. [U]

Here you select at what outside temperature the break point shall occur. The value is adjustable between -15 and +15 °C. The factory setting is 0 °C.

Menu 2.6.4 Flowtemp. at buckling [U]

You set the required flow temperature for the break point here. The value is adjustable between 10 and 80 °C. The factory setting is 40 °C.

Menu 2.6.5 Return [U]

Pressing the enter button returns you to menu 2.6.0.

Menu 2.7.0 Fixed condensing [U]

Pressing the enter button takes you to the sub-menus, which show the settings for fixed condensing. Only shown when fixed condensing is selected in menu 9.1.7.

Menu 2.7.1 Starttemp.compressor [U]

Temperature on the flow line sensor (FG) when first compressor starts. The value is adjustable between 5 and 60 °C. The factory setting is 47 °C.

Menu 2.7.2 Stoptemp. compressor [U]

Temperature on the flow line sensor (FG) when the last compressor stops. The value is adjustable between 5 and 60 °C. The factory setting is 50 °C.

Menu 2.7.3 Starttemp. additive [U]

Temperature on the flow line sensor (FG) when additional heating engages. The value is adjustable between 5 and 60 °C. The factory setting is 45 °C.

[N] Normal menus: displayed in all menu modes.

[U] Extended menus: Only displayed when **extended** or **service** is selected in menu 8.1.1.

[S] Service menus: Only displayed when **service** is selected in menu 8.1.1.

Menu 2.7.4 Stoptemp. additive [U]

Temperature on the flow line sensor (FG) when additional heating disengages. The value is adjustable between 5 and 60 °C. The factory setting is 49 °C.

Menu 2.7.5 Return [U]

Pressing the Enter button returns you to menu 2.7.0.

Menu 2.8 Return temperature [N]

The current temperature of the return water (RG) from the heating system is shown here.

Menu 2.9 Degree minutes [N]

Current value for number of degree-minutes. This value can be changed to e.g. accelerate the start of heat production. The value is adjustable in increments of 10.

Menu 2.10 Return [N]

Pressing the Enter button returns you to menu 2.0.

3.0 Flow temperature 2*

* Accessories

Menu 3.1 Curve slope 2 [N]

The selected curve slope for the heating curve is shown here. The value is adjustable between curve 1 and 15, or in position Own curve. The values for own curve are set in menu 3.6.0. The factory setting is 9.

Menu 3.2 Offset heatingcurve 2 [N]

The chosen offset for the heating curve is shown here. The value is adjustable between -10 and +10. The factory setting is 0.

If the RCU is connected, the set offset is shown via RCU between brackets. The actual offset then becomes the total of the set offset and RCU offset.

Menu 3.3 Min. flow temp. 2 [U]

The set minimum level for the flow temperature to the heating system is shown here. The calculated supply temperature never drops below this level irrespective of the outdoor temperature, curve slope or offset heating curve. The value is adjustable between 10 and 65 °C. The factory setting is 15 °C.

Menu 3.4 Max. flow temp. 2 [U]

The set maximum level for the supply temperature to the heating system is shown here. The calculated supply temperature never exceeds this level irrespective of the outdoor temperature, curve slope or offset heating curve. The value is adjustable between 10 and 80 °C. The factory setting is 55 °C.

Menu 3.5 External adjustment 2 [U]

When the thermostat is selected in menu 9.1.11, you can connect an external contact, see Description of functions - Basic functions > Room control. Using an external contact, for example, a room thermostat or a timer allows you to temporarily or periodically raise or lower the flow temperature and with that the room temperature. When the external contact is made, the heating curve offset is changed by the number of steps shown here. The value is adjustable between -10 and +10. The factory setting is 0.

Menu 3.6.0 Own curve definite. 2 [U]

Your own curve definition is chosen here. This is an individual linear curve with one break point. You select a break point and the associated temperatures. NOTE! The Curve slope in menu 3.1 must be set to Own curve to activate this.

Menu 3.6.1 Flow temp. at -20 °C [U]

The flow temperature is selected here at an outdoor temperature of -20 °C. The value is adjustable between 10 and 80 °C. The factory setting is 55 °C.

Menu 3.6.2 Flow temp. at +20 °C [U]

The flow temperature is selected here at an outdoor temperature of +20 °C. The value is adjustable between 10 and 80 °C. The factory setting is 18 °C.

Menu 3.6.3 Set buckling temp. [U]

Here you select at what outside temperature the break point shall occur. The value is adjustable between -15 and +15 °C. The factory setting is 0 °C.

Menu 3.6.4 Flowtemp.at buckling [U]

You set the required flow temperature for the break point here. The value is adjustable between 10 and 80 °C. The factory setting is 40.

Menu 3.6.5 Return [U]

Pressing the enter button returns you to menu 3.6.0.

Menu 3.7 Return temperature 2 [U]

The current temperature of the return water (RG2) from the heating system is shown here.

Menu 3.8 Shunt period time [U]

Here you select the period time, i. e. the time between corrections for the sub shunt (SV-V2). The value is adjustable between 10 and 500 seconds. The factory setting is 120 seconds.

Menu 3.9 Shunt intensificat. [U]

Here you select how many seconds the sub shunt (SV-V2) shall run in relation to the difference between the calculated flow and the true flow. For example, a difference of 2 degrees and a set amplification of 5 gives 10 seconds in control of the sub shunt. The value is adjustable between 1 and 10. The factory setting is 1.

Menu 3.10 Return [N]

Pressing the Enter button returns you to menu 3.0.

[N] Normal menus: displayed in all menu modes.

[U] Extended menus: Only displayed when **extended** or **service** is selected in menu 8.1.1.

[S] Service menus: Only displayed when **service** is selected in menu 8.1.1.

4.0 Outdoor temperature

Menu 4.1 Medium outdoor temp. [N]

The average outdoor temperature for the last 24 hours is shown here.

Menu 4.2 Return [N]

Pressing the Enter button returns you to menu 4.0.

5.0 Heat pump

Menu 5.1 Heat pump unit [N]

The heat pump unit is selected here, for which submenus to menu 5.0 applies:

Master / Slave 1 / Slave 2 / ... / Slave 8.

Only activated units can be selected (menu 0.2).

Menu 5.2.0 Compressor module A [N]

The current mode of compressor module A is shown here:

"Heat / Hot water / Ext. control / Waiting / Alarm / Off".

Pressing the enter button takes you to the sub-menus that show the temperatures and statistics for compressor module A.

Menu 5.2.1 Heating flow/return [N]

The internal flow (VBFA) and return temperatures (VBRA) are shown here for the heat medium to the compressor module A.

Menu 5.2.2 Brine in/out [N]

The current incoming (KBinA) and outgoing temperature (KButA) are shown here for brine to the compressor module A.

Menu 5.2.3 Hot gas temperature [U]

The current hot gas temperature for compressor module A at the sensor (HGA) is shown here.

Menu 5.2.4 Overheating temp. [U]

The current bulb temperature for compressor module A at the sensor (BA) is shown here.

Menu 5.2.5 Liquide line temp. [U]

The current fluid line temperature for compressor module A at the sensor (VLA) is shown here.

Menu 5.2.6 Tot. starts compr. A [U]

The number of times that compressor A has been started since the first start up is shown here. The value is saved in the microprocessor and thus is not reset even when the heat pump is switched off using the main power switch.

Menu 5.2.7 Opera.time compr. A [U]

The number of hours that compressor A has been in operation since the first start up is shown here. The value is saved in the microprocessor and thus is not reset even when the heat pump is switched off using the main power switch.

Menu 5.2.8 Return [N]

Pressing the enter button returns you to menu 5.2.0.

Menu 5.3.0 Compressor module B [N]

The current mode of compressor module B is shown here:

"Heat / Hot water / Ext. control / Waiting / Alarm / Off".

Pressing the enter button takes you to the sub-menus that show the temperatures and statistics for compressor module B.

Menu 5.3.1 Heating flow/return [N]

The internal flow (VBFB) and return temperatures (VBRB) are shown here for the heat medium to the compressor module B.

Menu 5.3.2 Brine in/out [N]

The current incoming (KBinB) and outgoing temperature (KButB) are shown here for brine to the compressor module B.

Menu 5.3.3 Hot gas temperature [U]

The current hot gas temperature for compressor module B at the sensor (HGB) is shown here.

Menu 5.3.4 Overheating temp. [U]

The current bulb temperature for compressor module B at the sensor (BB) is shown here.

Menu 5.3.5 Liquide line temp. [U]

The current fluid line temperature for compressor module B at the sensor (VLB) is shown here.

Menu 5.3.6 Tot. starts compr. B [U]

The number of times that compressor B has been started since the first start up is shown here. The value is saved in the microprocessor and thus is not reset even when the heat pump is switched off using the main power switch.

Menu 5.3.7 Opera.time compr. B [U]

The number of hours that compressor B has been in operation since the first start up is shown here. The value is saved in the microprocessor and thus is not reset even when the heat pump is switched off using the main power switch.

Menu 5.3.8 Return [N]

Pressing the enter button returns you to menu 5.3.0.

Menu 5.4.0 Settings [U]

Pressing the enter button takes you to the settings for the unit selected in menu 5.1.

Menu 5.4.1 Max.heat returtemp. [U]

The maximum permitted heating medium-return temperature for the compressor is displayed here.

Menu 5.4.2 Min. brine out [U]

The minimum permitted brine temperature out from the heat pump. Can be set between -10 and +15 °C or Off. The factory setting is -8 °C.

Menu 5.4.3 Max. brine in [U]

Maximum permitted brine temperature in to the heat pump. Can be set between -10 and +40 °C or Off. The factory setting is Off.

Menu 5.4.4 Level monitor [U]

Select here if an external brine pressostat, level sensor or flow sensor is connected to the "EBV card".

Can be set to On (NC), On (NO) or Off. The factory setting is Off.

Menu 5.4.5 Start to start time [U]

The shortest time from start to start of the same compressor is set here. Can be set between 20 and 60 minutes. The factory setting is 20 minutes.

Menu 5.4.6 Oper. mode brinepump [U]

The operating mode for the brine pump is set here. Selectable options are:

Intermittent: The brine pump starts 20 seconds before and stops 20 seconds after the compressor.

Continuous: Continuous operation.

10 days cont: Continuous operation for 10 days. The pump then switches to intermittent operation. The factory setting is Intermittent.

Menu 5.4.7 Oper.mode heat pump A [U]

The operating mode for the heating medium pump A (VBP-A) is set here. Selectable options are:

Intermittent: The heating medium pump starts 20 seconds before and stops 20 seconds after the compressor.

Continuous: Continuous operation.

Economy: The pump is operational a specific time per period (see menu 6.1.2 and 6.1.3), and together with the compressor. The factory setting is Intermittent.

Menu 5.4.8 Oper.mode heat pump B [U]

The operating mode for the heating medium pump B (VBP-B) is set here. Selectable options are:

Intermittent: The heating medium pump starts 20 seconds before and stops 20 seconds after the compressor.

Continuous: Continuous operation.

Economy: The pump is operational a specific time per period (see menu 6.1.2 and 6.1.3), and together with the compressor. The factory setting is Intermittent.

Menu 5.4.9 Quickstart of compr. [U]

Select Yes in order to reduce the pressure-compensating time to 0 and in doing so permit a quick start.

NOTE! The setting returns to No as soon as the heat pump has implemented the action.

Menu 5.4.10 Factory pre-set [U]

The heat pump can be reset to the factory settings here.

Normal: Factory settings on all settings except the system settings (menu 0.x and 9.x) and operating statistics.

Expanded: Factory settings on all settings except operating statistics.

NOTE! The setting returns to No as soon as the heat pump has implemented the action.

Menu 5.4.11 Reset alarm [U]

Resetting/acknowledging an alarm on F1330.

Menu 5.4.12 Pool heating compr. A [U]

The menu is only displayed when pool is selected as "On" in menu 9.1.5

If it is "On", compr. A in the heat pump that is selected in menu 5.1 is permitted to carry out pool heating.

Menu 5.4.13 Pool heating compr. B [U]

The menu is only displayed when pool is selected as "On" in menu 9.1.5

If it is "On", compr. B in the heat pump that is selected in menu 5.1 is permitted to carry out pool heating.

Menu 5.4.14 Return [U]

Pressing the enter button returns you to menu 5.4.0.

Menu 5.5.0 Sensor calibration [S]

Sensors are calibrated here using the sub-menus. All (Menu 5.5.1 - 5.5.9) are adjustable between -5 and +5 °C in increments of 0.1 °C. Factory setting on all is 0 °C.

Menu 5.5.1 Heating return A [S]**Menu 5.5.2 Heating return B [S]****Menu 5.5.3 Brine in [S]****Menu 5.5.4 Brine out A [S]****Menu 5.5.5 Brine out B [S]****Menu 5.5.6 Outdoor temp.sensor [S]****Menu 5.5.7 Room temp. sensor [S]****Menu 5.5.8 Flow temp. sensor 1 [S]****Menu 5.5.9 Flow temp. sensor 2 [S]****Menu 5.5.10 Return [S]**

Pressing the Enter button returns you to menu 5.5.0.

Menu 5.6 Return [N]

Pressing the Enter button returns you to menu 5.0.

[N] Normal menus: displayed in all menu modes.

[U] Extended menus: Only displayed when **extended** or **service** is selected in menu 8.1.1.

[S] Service menus: Only displayed when **service** is selected in menu 8.1.1.

6.0 External units*

* Only shown when the accessory in question is connected and activated in menu 9.1.x.

Menu 6.1.0 Circulation pumps [U]

Pressing the enter button takes you to the sub-menus for the circulation pumps. Settings are made here for internal and external circulation pumps.

Menu 6.1.1 Op-mode external cp [U]

The operating mode for an external heating medium pump (VBP3) is set here. Selectable options are:

Continuous: Continuous operation.

Economy: The pump is operational a specific time per period (see menu 6.1.2 and 6.1.3), and together with the compressor.

The factory setting is Continuous.

Menu 6.1.2 Periodtime economy [U]

Here the period time for economy mode is set here. This applies to heating medium pump A/B (VBP-A/VBP-B) when Economy is selected in menu 5.4.7/5.4.8, and/or the external heating medium pump (VBP3) when Economy is selected in menu 6.1.1. Adjustable between 5 and 120 minutes. The factory setting is 20 minutes.

Menu 6.1.3 Operati-time econom [U]

The operating time per period for the economy mode is selected here. This applies to heating medium pump A/B (VBP-A/VBP-B) when Economy is selected in menu 5.4.7/5.4.8, and/or the external heating medium pump (VBP3) when Economy is selected in menu 6.1.1. Adjustable between 1 and 120 minutes. The factory setting is 5 minutes.

Menu 6.1.4 Time of period Hw-cp [U]

Here you select between which times of the day the hot water circulation pump shall run according to the period time (menu 6.1.5) and the operating time (menu 6.1.6).

Menu 6.1.5 Periodtime Hw-cp [U]

Here the period time for the hot water circulation pump is set here. Adjustable between 10 and 60 minutes. The factory setting is 15 minutes.

Menu 6.1.6 Operatingtime Hw-cp [U]

The operating time per period for the hot water circulation pump is selected here. Adjustable between 1 and 60 minutes. The factory setting is 3 minutes.

Menu 6.1.7 Return [U]

Pressing the enter button returns you to menu 6.1.0.

Menu 6.2.0 Immersionheatersetti [N]

The number of electrical steps activated is shown with the text, x el. steps. Pressing the enter button takes you to sub-menu where settings concerning the connected electrical additional heater for heat production are made. Only shown when Electricity or Electri/Oil is selected in menu 9.1.8.

Menu 6.2.1 Immersionheater type [U]

Here you select whether immersion heater control shall take place in binary or linear.

Binary control means that stepping is carried out according to the binary system and in doing so makes it possible to control a maximum of 63 electrical steps.

Linear control gives a maximum of 6 electrical steps when stepping is carried out according to the linear increase model.

Menu 6.2.2 Immersionheatrelays [U]

Here you select how many relays are connected to the electrical additional heater for heat production. Adjustable between 1 and 6. The factory setting is 3.

Menu 6.2.3 Steps at 2h delay [U]

The number of permitted electrical steps within 2 hours of start up. Adjustable between 0 and 63. The factory setting is 3.

Menu 6.2.4 Quickstart el.heater [U]

Select Yes to bypass the 2-hour electrical additional heater delay

NOTE! The setting returns to No as soon as the heat pump has implemented the action.

Menu 6.2.5 Time factor el.cass. [U]

The time factor of the immersion heater since first start up is shown here. The value is saved in the microprocessor and thus is not reset even when the heat pump is switched off using the main power switch.

Menu 6.2.6 Return [U]

Pressing the enter button returns you to menu 6.2.0.

Menu 6.3.0 Boiler settings [N]

Shows the temperature level of the oil boiler. Pressing the enter button takes you to sub-menus for the boiler settings. Only shown when Oil or Electri/Oil is selected in menu 9.1.8.

Menu 6.3.1 Oil boiler time [U]

Number of hours the oil boiler shall be active. The value can be set between 1 and 24 hours. The factory setting is 12 hours.

Menu 6.3.2 Start temp. shunt [U]

Here you select the temperature on the boiler sensor (PG) at which the boiler shunt (SV-P) should start to regulate. Adjustable between 10 and 90 °C. The factory setting is 55 °C.

Menu 6.3.3 Period time shunt [U]

Here you select the period time, i. e. the time between corrections for the shunt (SV-P). Adjustable between 10 and 500 seconds. The factory setting is 120 seconds.

Menu 6.3.4 Shuntintensification [U]

Here you select how many seconds the shunt (SV-P) shall run in relation to the difference between the calculated flow and the true flow. For example, a difference of 2 degrees and a set amplification of 5 gives 10 seconds in control of the shunt. The value is adjustable between 1 and 10. The factory setting is 1.

Menu 6.3.5 Timefactor oilboiler [U]

The time factor of the oil boiler since first start up is shown here. The value is saved in the microprocessor and thus is not reset even when boiler is switched off using the main power switch.

Menu 6.3.6 Return [U]

Pressing the enter button returns you to menu 6.3.0.

Menu 6.4.0 HPAC/PKM settings [U]

Pressing the enter button takes you to sub-menus for the HPAC-settings. Only shown when HPAC is selected in menu 9.1.10.

Menu 6.4.1 Cooling [U]

Here is cooling function can be set On or Off. The factory setting is Off.

Menu 6.4.2 Cooling curve [U]

The selected curve slope (cooling curve) is shown here). The value is adjustable between 1 and 3. The factory setting is 2.

Menu 6.4.3 Offset cold curve [U]

The selected cooling curve offset is shown here. The value is adjustable between -10 and +10. The factory setting is 0.

Menu 6.4.4 Start temp. heating [U]

Outdoor temperature (menu 4.0) at the outdoor sensor (UG) when the heat pump switches to heating mode. The value is adjustable between 0 and 30 °C. The factory setting is 20 °C.

Menu 6.4.5 Start temp. cooling [U]

Outdoor temperature (menu 4.0) on the outdoor sensor (UG) when the heat pump switches to cooling mode. The value is adjustable between 0 and 30 °C. The factory setting is 25 °C.

Menu 6.4.6 Start active cooling [U]

The heat pump starts to actively produce cooling at this degree-minute surplus. The value is adjustable between 10 and 500 degree-minutes. The factory setting is 30 degree-minutes.

Menu 6.4.7 GM for compr.-step [U]

Degree-minute difference between compressor stages. The value is adjustable between 10 and 500 degree-minutes. The factory setting is 30 degree-minutes.

Menu 6.4.8 Diff Passive/Active [U]

If the flow temperature on the sensor (FG) exceeds the calculated flow temperature + this value the system switches to active cooling. The value is adjustable between 1 and 9 °C. The factory setting is 4 °C.

Menu 6.4.9 Min. flow temp. [U]

The lowest flow temperature in cooling mode. The value is adjustable between 2 and 65 °C. The factory setting is 5 °C.

Menu 6.4.10 Periodtime shunt [U]

The time period for the shunt (SV-K) is chosen here. Adjustable between 1 and 500 seconds. The factory setting is 5 °C

Menu 6.4.11 Shunt intensificat. [U]

The amplification for the shunt (SV-K) is chosen here. For example, a 2 degree difference between the flow line and the calculated flow line with 5 in amplification gives 10 secs/min controlling the shunt. The value can be set between 1 and 10. The factory setting is 1.

Menu 6.4.12 Time betw. heat cold [U]

The time the heat pump must wait between production of heat cooling is set here. The value can be set between 0 and 10 hours. The factory setting is 3 hours.

Menu 6.4.13 Return [U]

Pressing the enter button returns you to menu 6.4.0.

Menu 6.5.0 Pool settings [N]

Shows the current pool temperature on the sensor (PTG). Pressing the enter button takes you to sub-menus for the Pool settings. Only shown when pool is selected in menu 9.1.5.

Menu 6.5.1 Start temp. pool [U]

Here you select at which pool temperature on the sensor (PTG) heating should start. The value is adjustable between 5 and 60 °C in increments of 0.5 °C. The factory setting is 22.0 °C.

Menu 6.5.2 Stop temp. pool [U]

Here you select at which pool temperature on the sensor (PTG) heating should stop. Adjustable between 5 and 60 °C in increments of 0.5 °C. The factory setting is 24.0 °C.

Menu 6.5.3 Periodtime heat/pool [U]

The length of time is set here. The value is adjustable between 10 and 1000 minutes. The factory setting is 100 minutes.

Menu 6.5.4 Max-Time heatproduct [U]

Here you select how much time of the period time (menu 6.5.3) is to be used to heat the house when there is a need of heating and pool heating. The value is adjustable between 0 and 1000 minutes. The factory setting is 50 minutes.

[N] Normal menus: displayed in all menu modes.

[U] Extended menus: Only displayed when **extended** or **service** is selected in menu 8.1.1.

[S] Service menus: Only displayed when **service** is selected in menu 8.1.1.

Menu 6.5.5 Max compr. to pool [U]

The maximum number of compressors that can be operated towards the pool exchanger (VX-P) is set here. The number of compressors that currently produce pool heat is within brackets. The value can be adjusted between 0 and 18. Factory setting is 1.

Menu 6.5.6 Return [U]

Pressing the enter button returns you to menu 6.5.0.

Menu 6.6.0 HW storage vessel [N]

Shows the current temperature in the hot water accumulator. Pressing the enter button takes you to sub-menus for the hot water accumulator settings. Only shown when hot water accumulator is selected in menu 9.1.6.

Menu 6.6.1 Loading temperature [U]

The temperature that the control valve (SV-VVX) attempts to reach on the hot water charging sensor (VVLG). The value is adjustable between 40 and 60 °C. The factory setting is 48 °C.

Menu 6.6.2 Per.-Time shuntvalve [U]

The period time for the control valve (SV-VVX) is set here. Adjustable between 10 and 500 seconds. The factory setting is 60 seconds.

Menu 6.6.3 Shunt intensificat. [U]

Applies to the control valve (SV-VVX). The value is adjustable between 1 and 10. The factory setting is 2.

Menu 6.6.4 Zero [U]

This is where you select zero for the control valve regulator (SV-VVX). Adjustable between 1 and 100. The factory setting is 95.

Menu 6.6.5 Return [U]

Pressing the enter button returns you to menu 6.6.0.

Menu 6.7.0 Collector [N]

Pressing the enter button takes you to sub-menus with settings for load collector. Only shown when the collector is On in menu 9.1.9.

Menu 6.7.1 Load collector temp. [N]

Shows the current temperature on the load collector sensor (LKG).

Menu 6.7.2 Soil sensor temp. [N]

Shows the current temperature on the soil sensor (MG).

Menu 6.7.3 Mindiff for collect. [U]

The minimum difference between the load collector sensor (LKG) and the soil sensor (MG) to charge from the load collector to soil is set here. The value is adjustable between 1 and 25 °C. The factory setting is 2 °C.

Menu 6.7.4 Maxdiff for collect. [U]

The maximum difference between the load collector sensor (LKG) and the soil sensor (MG) to charge from the load collector to soil is set here. The value is adjustable between 1 and 25 °C. The factory setting is 10 °C.

Menu 6.7.5 Contload bripu col/e [U]

Here you select whether the brine pump should run continuously when loading from the load collector to soil.

Menu 6.7.6 Load collector only [U]

The temperature on the load collector sensor (LKG) is set here when only the load collect is used. The value can be set between -0 and +40 °C or Off. The factory setting is Off.

Menu 6.7.7 Return [N]

Pressing the enter button returns you to menu 9.7.0

Menu 6.8.0 Cooling settings [N]

Pressing the enter button takes you to sub-menus with the cooling settings. Only shown when cooling accumulator is selected in menu 9.1.10.

Menu 6.8.1 Cool acc temperature [N]

Shows the current temperature on the cooling accumulator sensor (KBack).

Menu 6.8.2 Brine collector [N]

Shows the current temperature on the collector for the brine (KB-KO).

Menu 6.8.3 Cooling curve [U]

The selected curve slope (cooling curve) is shown here). The value can be set between 1 and 3. The factory setting is 2.

Menu 6.8.4 Offset cooling curve [U]

The selected cooling curve offset is shown here. The value can be set between -10 and +10. The factory setting is 0.

Menu 6.8.5 Start temp. heating [U]

Outdoor temperature (menu 4.0) at the outdoor sensor (UG) when the heat pump is permitted to produce heat. The value can be set between -30 and 40 °C. The factory setting is 20 °C.

Menu 6.8.6 Start temp. cooling [U]

Outdoor temperature (menu 4.0) at the outdoor sensor (UG) when the heat pump is permitted to produce cooling. The value can be set between -30 and 40 °C. The factory setting is 25 °C.

Menu 6.8.7 Temp. to cool. acc. [U]

The desired temperature for the cooling accumulator is set here. The value can be set between 0 and 20 °C. The factory setting is 13 °C.

Menu 6.8.8 Cooldiff for acc. [U]

The required cooling difference for the accumulator is set here. The value is adjustable between 1 and 10 °C. The factory setting is 2 °C.

Menu 6.8.9 Min. flow temp. [U]

The lowest flow temperature in cooling mode. The value is adjustable between 2 and 65 °C. The factory setting is 5 °C.

Menu 6.8.10 Periodtime shunt [U]

The period time for the shunt (SV-K) is chosen here. Adjustable between 1 and 500 seconds. The factory setting is 60 seconds.

Menu 6.8.11 Shunt intensificat. [U]

The amplification for the shunt (SV-K) is chosen here. For example, a 2 degrees difference between the flow and the calculated flow line with 5 in amplification gives 10 sec/min controlling the shunt. The value can be set between 1 and 10. The factory setting is 1.

Menu 6.8.12 Return [N]

Pressing the Enter button returns you to menu 6.8.0.

Menu 6.9.0 Room sensor [N]

Shows the current temperature on the room sensor (RG05 or RG10). Pressing the enter button takes you to sub-menus with settings for the room sensor. Only shown when the room unit or RG10 is selected in menu 9.1.11.

Menu 6.9.1 Room balancing [U]

Here you set the factor that determines how much a deviation between the desired and true room temperature shall affect the flow temperature. The factor is adjustable between 0 and 6 in increments of 0.1. The factory setting is 1.0.

Menu 6.9.2 Room balancingsystem [U]

Here you select which heating system the room sensor shall affect. Can be set to Off, Heating syst1, Heating syst2 or Heating sys 1&2. The factory setting is Off.

Menu 6.9.3 Desired room temperature [U]

The menu is only displayed if RG05 is selected in menu 9.1.11. The value can be adjusted between 10 and 30 °C in increments of 0.5 °C. Factory setting is 20 °C.

Menu 6.9.4 Return [U]

Pressing the Enter button returns you to menu 6.9.0

Menu 6.10 Return [U]

Pressing the Enter button returns you to menu 6.0.

7.0 Clock

Menu 7.1 Date [N]

The current date is set here.

Menu 7.2 Time [N]

The current time is set here.

Menu 7.3.0 Temp set back time 1 [U]

Pressing the enter button takes you to sub-menus for day changes period 1, where settings for night reduction are located.

Menu 7.3.1 Temp set back time 1 [U]

Here you which heating system is to be influenced by day changes period 1. When heating system 2 is installed both System 1 and 2 can be selected. Can also be set to Off. The factory setting is Off.

Menu 7.3.2 Offset heating curve [U]

Changes to the flow temperature with a day change, e.g. the night reduction is set here. The value is adjustable between -10 and +10. The factory setting is 0.

Menu 7.3.3–7.3.9 Set Time Monday–Sunday [U]

The time for the day change, e.g. night reduction, is chosen here.

Menu 7.3.10 Return [U]

Pressing the enter button returns you to menu 7.3.0.

- [N] Normal menus: displayed in all menu modes.

[U] Extended menus: Only displayed when **extended** or **service** is selected in menu 8.1.1.

[S] Service menus: Only displayed when **service** is selected in menu 8.1.1.

Menu 7.4.0 Temp set back time 2 [U]

Pressing the enter button takes you to sub-menus for day changes period 2, where settings for night reduction are located.

Menu 7.4.1 Temp set back time 2 [U]

Here you which heating system is to be influenced by day changes period 1. When heating system 2 is installed both System 2 and 2 can be selected. Can also be set to Off. The factory setting is Off.

Menu 7.4.2 Offset heating curve [U]

Changes to the flow temperature with a day change, e.g. the night reduction is set here. The value is adjustable between -10 and +10. The factory setting is 0.

Menu 7.4.3–7.4.9 Set Time Monday–Sunday [U]

The time for the day change, e.g. night reduction is chosen here.

Menu 7.4.10 Return [U]

Pressing the enter button returns you to menu 7.4.0.

Menu 7.5.0 Timer Extra Hotwater [U]

Pressing the enter button takes you to sub-menus for the Extra hot water time settings. Settings are included here when you wish to have Extra hot water on a specific day.

Menu 7.5.1 Timer Extra Hotwater [U]

You select here whether the time settings for Extra hot water are to be On or Off. The factory setting is Off.

Menu 7.5.2 - 7.5.8 Extra HW Monday - Sunday [U]

The period for respective days when Extra hot water is to be active is selected here. Hours and minutes for both start and stop are shown. The same start and stop times deactivates Extra hot water.

Menu 7.5.9 Return [U]

Pressing the enter button returns you to menu 7.5.0.

Menu 7.6 Return [N]

Pressing the Enter button returns you to menu 7.0.

8.0 Other settings**Menu 8.1.0 Display settings [N]**

Pressing the enter button takes you to sub-menus for the display settings, where settings concerning language and menu types are made.

Menu 8.1.1 Menu type [N]

The menu type is chosen here: Normal, extended or service.

[N] Normal, the menus the user needs for a quick production control.

[U] Extended, shows all menus except the service menus.

[S] Service, shows all menus. Returns to the previous setting 30 minutes after the last button was pressed.

The factory setting is Normal.

Menu 8.1.2 Language [N]

The menu language is selected here. The factory setting is English.

Menu 8.1.3 Display contrast [N]

The display's contrast is set here. The value is adjustable between 0 and 31.

Menu 8.1.4 Light intensity [N]

The light intensity in screen saver mode is set here. Can be set to Off, Low or Mid. Screen saver mode starts 30 minutes after the last button was pushed.

Menu 8.1.5 Return [N]

Pressing the enter button returns you to menu 8.1.0.

Menu 8.2.0 Operatingmodesetting [U]

Pressing the enter button takes you to sub-menus for the operating mode settings.

Menu 8.2.1 Only additional heat [U]

You select here whether additional mode should be activated. Can be set to Yes or No. When additional mode is activated the compressors are blocked and additional heating and circulation pump can not be blocked using the operating mode button. The factory setting is No.

Menu 8.2.2 Changing temperature [U]

At this average outdoor temperature, the heat pump changes operating mode when auto mode is selected. The value is adjustable between 10 and 40 °C. The factory setting is 25 °C.

Menu 8.2.3 Start value compr. [U]

Here you select at which degree minute setting the first compressor shall start for heating. The value is adjustable between -3000 and +100. The factory setting is -60.

Menu 8.2.4 GM for compr.step [U]

Here you set how many degree-minutes shall pass between each compressor stage. The value is adjustable between 0 and 500. The factory setting is 60.

Menu 8.2.5 Additive start value [U]

Here you select at which degree-minute setting the first additional heater step shall start for heating. The value is adjustable between -3000 and 0. The factory setting is -500.

Menu 8.2.6 GM for additive step [U]

Here you set how many degree-minutes shall pass between each additional heater step. The value is adjustable between 10 and 500. The factory setting is 100.

Menu 8.2.7 Flow diff HP [U]

The largest deviation from the calculated flowtemperature before forced control comes into effect is set here. The value is adjustable between 1 and 20 °C. The factory setting is 13 °C.

Menu 8.2.8 Diff HP-Add [U]

When the current flow temperature differs from that calculated by this value plus the value in menu 8.2.7, a further additional step is force connected or disconnected. The value is adjustable between 1 and 20 °C. The factory setting is 3 °C.

Menu 8.2.9 Return [U]

Pressing the enter button returns you to menu 8.2.0.

Menu 8.3.0 Load monitor [U]

Pressing the enter button takes you to sub-menus where readings and settings concerning the load monitor are made.

Menu 8.3.1 Fuse size [U]

The setting (16, 20, 25, 35, 50 or 63 A) selected on the EBV-card (2) knob (100) is shown here.

Menu 8.3.2 Max electric power [U]

The setting (variable between 10 and 100 %) selected on the EBV-card (2) knob (101) is shown here.

Menu 8.3.3 - 8.3.5 Current phase 1-3 [U]

Shows the measured current from the current sensor, phase 1 - 3.

When the current falls below 2.0 A, low is shown on the display.

Menu 8.3.6 Ratio of transf. EBV [U]

The transfer value must be defined depending on the current transformers used for the EBV card. This is done in this menu. The value is adjustable between 100 and 900 in increments of 10. The setting 300 applies for the supplied current transformers. The factory setting is 300.

Menu 8.3.7 Tariff status [U]

Shows the current tariff status.

Menu 8.3.8 Return [U]

Pressing the enter button returns you to menu 8.3.0.

Menu 8.4 Return [N]

Pressing the Enter button returns you to menu 8.0.

9.0 Service menus**Menu 9.1.0 System settings [S]**

Pressing the enter button takes you to sub-menus for the system settings.

Menu 9.1.1 Expansion card 11 [S]

Here the expansion card 11 is set On or Off. The factory setting is Off.

Menu 9.1.2 Expansion card 12 [S]

Here the expansion card 12 is set On or Off. The factory setting is Off.

Menu 9.1.3 RCU [S]

Here the RCU is set On or Off. The factory setting is Off.

Menu 9.1.4 Sub shunt [S]

Here the sub shunt is set either On or Off. The factory setting is Off.

Menu 9.1.5 Pool [S]

Here pool heating is set either On or Off. The factory setting is Off.

Menu 9.1.6 Hot water acc. tank [S]

Charging the hot water to a single-jacketed accumulator via a heat exchanger. Here the hot water accumulator is set either On or Off. The factory setting is Off.

Menu 9.1.7 Fixed condensing [S]

Here fixed condensing is set either On or Off. The factory setting is Off.

Menu 9.1.8 Additive [S]

The type of additional heat that is engaged is set here. The options are: Off, Electricity, Oil or Electri/Oil. The factory setting is Off.

Menu 9.1.9 Extra collector [S]

Whether an extra collector is to be connected is set here. Can be set On or Off. The factory setting is Off.

Menu 9.1.10 Cooling [S]

The type of cooling system is set here. The selectable modes are: "Off", "HPAC base card", "HPAC expansion card 11", "Cooling accumulator", "PKM 2 pipes" and "PKM 4 pipes". The factory setting is "Off".

Menu 9.1.11 Room control mode [S]

Here the type of room control connected is set. Selectable modes are Off, Thermostat, RG05 or RG10. The factory setting is Off.

[N] Normal menus: displayed in all menu modes.

[U] Extended menus: Only displayed when **extended** or **service** is selected in menu 8.1.1.

[S] Service menus: Only displayed when **service** is selected in menu 8.1.1.

Menu 9.1.12 Hot water with additional heat [S]

Whether additional heat is to be engaged during hot water charging is selected here if any compressor that is normally available for hot water production prioritises heating.

Possible modes are "On" or "Off". The factory setting is "Off".

Menu 9.1.13 Return [S]

Pressing the enter button returns you to menu 9.1.0.

Menu 9.2.0 Floor drying setting [S]

Pressing the enter button takes you to sub-menus for the floor drying settings.

Menu 9.2.1 Op-mode Floor drying [S]

The operating mode for the floor drying function is set here. Selectable modes are:

Off: Normal operation, i.e. the floor drying function is switched off.

Own program: Two fixed temperatures in two periods are adjustable in menu 9.2.3 to 9.2.6.

Fixed program: The flow temperature starts day 0 at 20 °C and increases each day by 5 °C. Day 5 the temperature has reached 45 °C, which is maintained on days 6 and 7. The program is ended on days 8 to 12 with the temperature dropping by 5 °C each day. The factory setting is Off.

Menu 9.2.2 Floor drying day [S]

Here you can see which day the floor drying function is on. It is also possible here to enter the floor drying program by changing this value. The value is adjustable from 0 to 20 days. The factory setting is 0.

Menu 9.2.3 Nos. of days per. 1 [S]

Here you set the number of days that the flow temperature shall maintain the temperature in menu 9.2.4 when Own program in menu 9.2.1 is selected. The value is adjustable between 1 and 10 days. The factory setting is 5 days.

Menu 9.2.4 Temperature per. 1 [S]

Here you set the temperature to be maintained on the flow line sensor (FG) during period 1 when Own program is selected in menu 9.2.1. The value is adjustable between 15 and 50 °C. The factory setting is 25 °C.

Menu 9.2.5 Nos. of days per. 2 [S]

Here you set the number of days that the flow temperature shall maintain the temperature in menu 9.2.4 when Own program in menu 9.2.1 is selected. The value is adjustable between 1 and 10 days. The factory setting is 5 days.

Menu 9.2.6 Temperature per. 2 [S]

Here you set the temperature to be maintained on the flow line sensor (FG) during period 2 when Own program is selected in menu 9.2.1. The value is adjustable between 15 and 50 °C. The factory setting is 35 °C.

Menu 9.2.7 Return [S]

Pressing the enter button returns you to menu 9.2.0.

Menu 9.3.0 Alarm log [S]

Pressing the enter button takes you to sub-menus where all operating disturbances and the heat pump's status are logged.

Menu 9.3.1.0 - 9.3.6.0 Alarm 1 - 6 [S]

Pressing the enter button takes you to sub-menus where the status is shown for the heat pump when the different operating disturbances have occurred. The alarms are sorted chronologically, which means alarm 1 is always the most recent. (When there are no alarms stored, pressing enter has no effect). "x" in these menus symbolizes the alarm number.

Menu 9.3.x.1 Type of alarm [S]

The alarms are shown in plain text, for example, HP-Alarm / Sensor alarm HG, etc.

Menu 9.3.x.2 Heat pump [S]

Shows on which heat pump and module the alarm occurred, e. g. Slave 1:B.

Menu 9.3.x.3 Date [S]

Shows the date when the alarm tripped.

Menu 9.3.x.4 Time [S]

Shows the time when the alarm tripped.

Menu 9.3.x.5 Outdoor temperature [S]

Shows the outdoor temperature on the outdoor sensor (UG) when the alarm tripped.

Menu 9.3.x.6 Hot watertemperature [S]

Shows the hot water temperature on sensor (VVG) when the alarm tripped.

Menu 9.3.x.7 Flow temperature [S]

Shows the flow temperature on sensor (FG) when the alarm tripped.

Menu 9.3.x.8 Heating flow/return [S]

Shows the internal flow- (VBFA/B) and return line temperatures (VBRA/B) for the heating medium to the compressor module in question when the alarm tripped.

Menu 9.3.x.9 Brine in/out [S]

Shows the incoming (KBinA/B) and outgoing (KButA/B) brine temperature when the alarm tripped.

Menu 9.3.x.10 Hot gas temperature [S]

Shows the hot gas temperature on sensor (HGA/B) when the alarm tripped.

Menu 9.3.x.11 Overheating Temp. [S]

Shows the bulb temperature for the compressor module in question on sensor (BA/B) when the alarm tripped.

Menu 9.3.x.12 Liquide line temp. [S]

Shows the fluid line temperature on sensor (VLA/B) for the compressor module in question when the alarm tripped.

Menu 9.3.x.13 Relay status 1 - 8 [S]

Shows the relay status for relay 1 - 8 (relay 1 to the far left) when the current alarm tripped.

Menu 9.3.x.14 Relay status 9 - 14 [S]

Shows the relay status for relay 9 - 14 (relay 9 to the far left) when the current alarm tripped.

Menu 9.3.x.15 Compressor status [S]

Shows the compressor status at the time of the alarm.
E. g. Off / Hot water / Heat/cold / Pool.

Menu 9.3.x.16 Return [S]

Pressing the enter button returns you to menu.9.3.x.0.

Menu 9.3.7 Clear the alarm log [S]

Select Yes to clear the alarm log.

NOTE! The setting returns to No as soon as the heat pump has implemented the action.

Menu 9.3.8 Return [S]

Pressing the enter button returns you to menu 9.3.0.

NOTE!

Incorrect management of the menus below can seriously damage the heat pump!

Menu 9.4.0 Testing mode [S]

Pressing the enter button takes you to sub-menus that can be used during installation to check that the correct connection has been carried out.

Menu 9.4.1 Force control [S]

When this menu is set to On, the user temporarily takes control of the relays on the selected relay card (menu 9.4.2) in the heat pump the action was taken on. The setting automatically returns to Off, 30 minutes after the last button was pushed or after a restart.

Menu 9.4.2 Relay card [S]

The relay card to be force operated is selected here (Base card, Exp.card 11 or Exp.card 12). Only Base card can be selected on Slave units. This is also valid for Master units where no expansion card has been installed.

Menu 9.4.3 Relay 1 - 8 [S]

Shows the relay status for relay 1 - 8 (relay 1 to the far left). It is possible to force the relay to the required position using the enter button. The menu is only shown when menu 9.4.1 is set to On.

Menu 9.4.4 Relay 9 - 14 [S]

Shows the relay status for relay 9 - 14 (relay 9 to the far left). It is possible to force the relay to the required position using the enter button. The menu is only shown when menu 9.4.1 is set to On.

Menu 9.4.5 Return [S]

Pressing the enter button returns you to menu 9.4.0.

Menu 9.5 Return [S]

Pressing the Enter button returns you to menu 9.0.

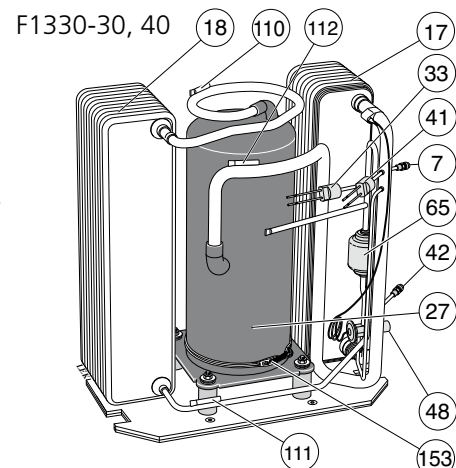
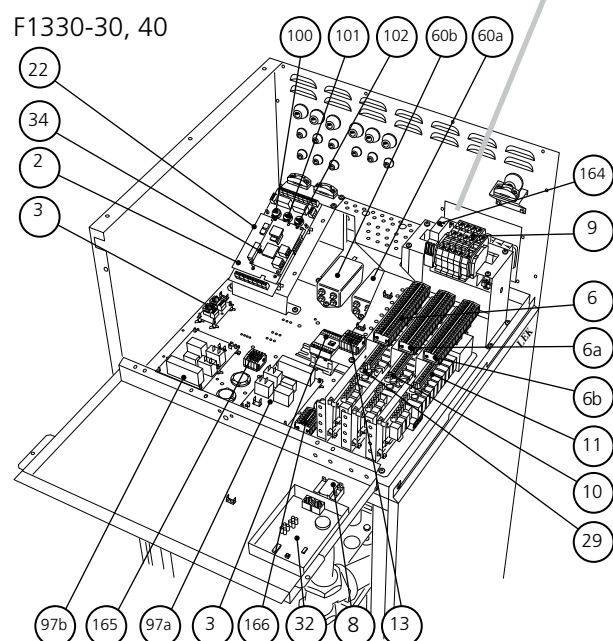
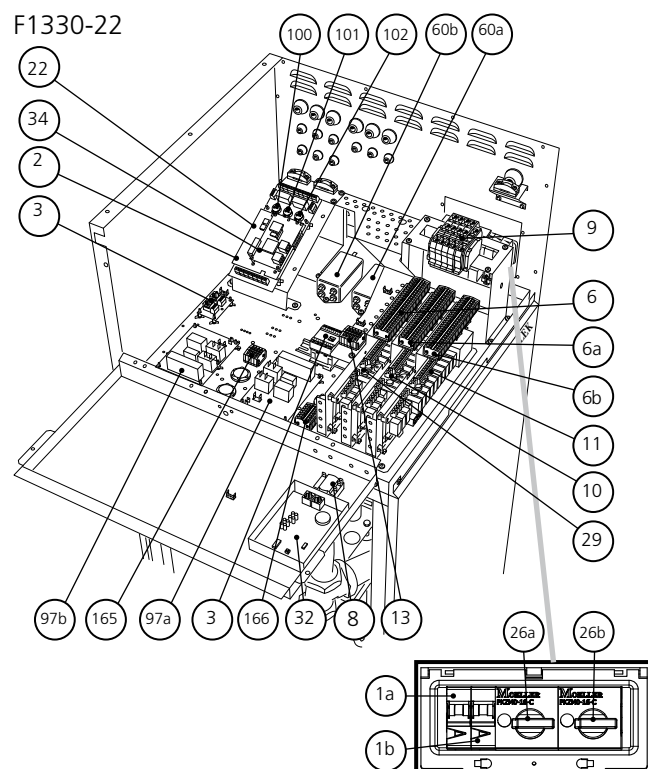
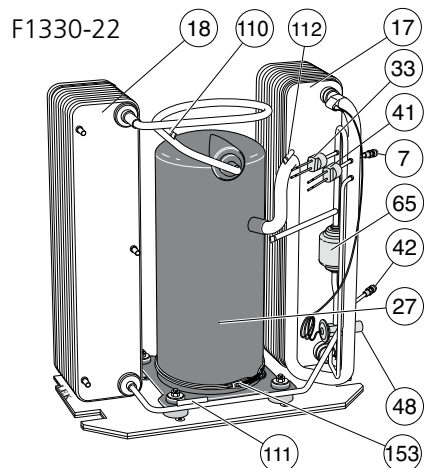
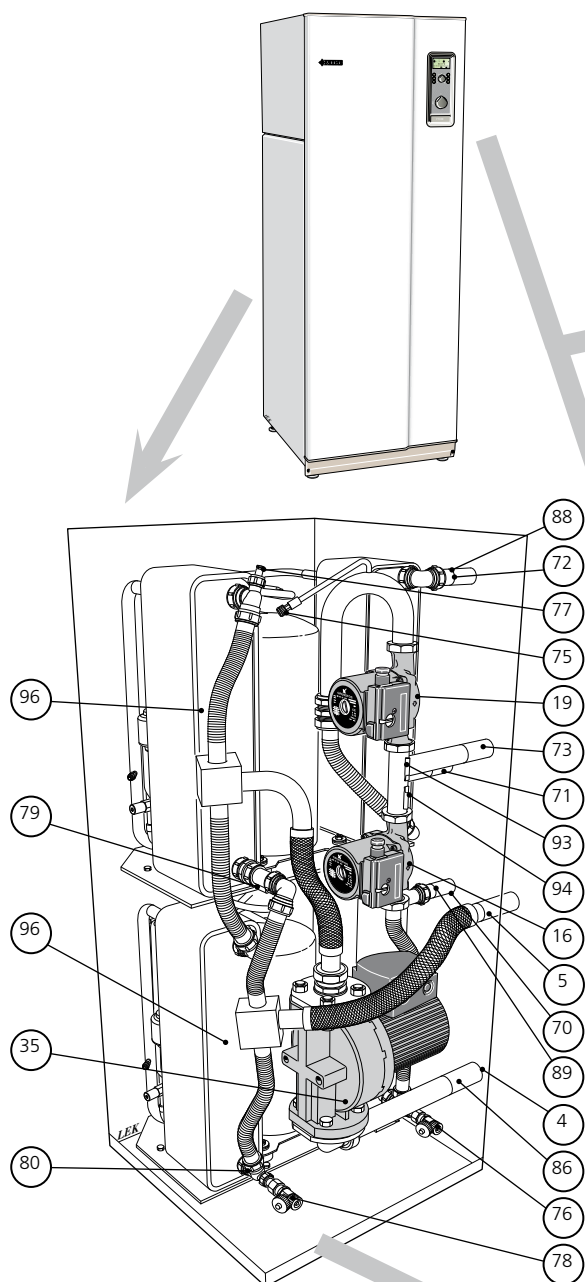
[N] Normal menus: displayed in all menu modes.

[U] Extended menus: Only displayed when **extended** or **service** is selected in menu 8.1.1.

[S] Service menus: Only displayed when **service** is selected in menu 8.1.1.

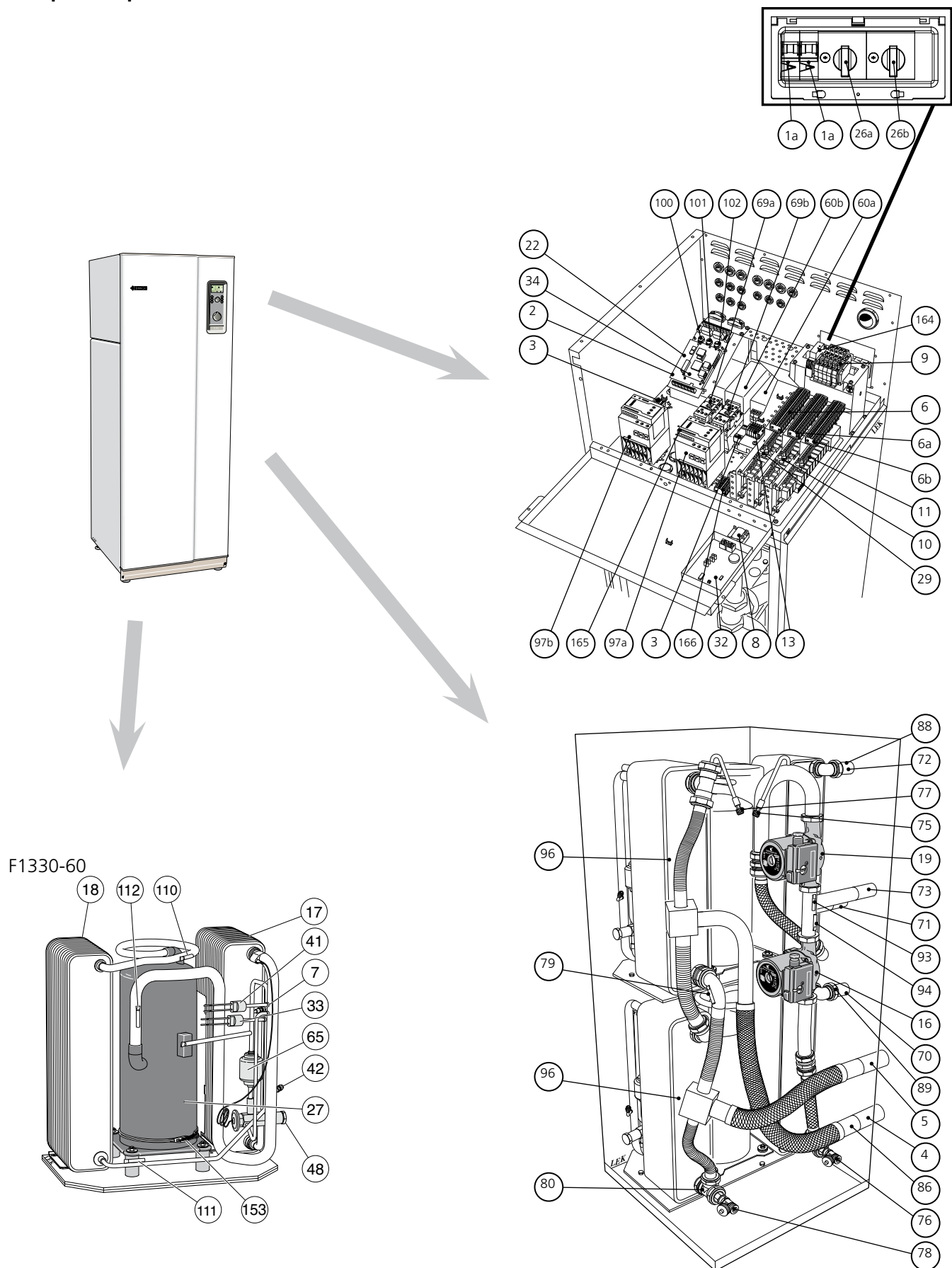
Technical data

Component placement 22 - 40 kW



The heat pump in the picture is fitted with accessories.

Component placement 60 kW



The heat pump in the picture is fitted with accessories.

List of components

1 a, b	Miniature circuit breaker, -F1, -F2	86	Temperature sensor, brine in, (KB-in)
2	EBV-card, -E2	88	Temperature sensor, heating medium flow, (VBFB)
3	Communication, several F1330s	89	Temperature sensor, heating medium flow, (VBFA)
4	Brine connection, KB-in	93	Temperature sensor, heating medium return, (VBRB)
5	Brine connection, KB-out	94	The temperature sensor, heating medium return, (VBRA)
6	Terminal blocks, external units, X6	95	Rating plate (see the section Dimensions > Dimensions and setting out code)
6 a *	Terminal blocks, external units, X6A	96	Rating plate, cooling section
6 b *	Terminal blocks, external units, X6B	97 a, b	Soft-start relay, -E97A, -E97B ****
7 a, b	Service connection, high pressure	100	Knob setting Fuse
8	Switch, 1 - 0 -  , -S8	101	Knob, setting Max electrical output
9	Terminal block, incoming electricity, X9	102	Knob, setting Max boiler temperature
10 *	Expansion card 11	103	Serial number (see the section Dimensions > Dimensions and setting out code)
11 *	Expansion card 12	110	Temperature sensor, hot gas temp., cooling circuit (HG)
13	Terminal blocks, pumps, Brine pump, -X7	111	Temperature sensor, fluid line. temp., cooling circuit, (VL)
15 **	Outdoor sensor, connection	112	Temperature sensor, bulb temp., cooling circuit, (B)
16	Heating medium pump, module A	153	Compressor heater
17 a, b	Evaporator	164 ***	Phase sequence monitor, -KF4
18 a, b	Condenser	165	Terminal block -X200, compressor heater
19	Heating medium pump, module B	166	Terminal block -X13, for relay and expansion card
22	Measure card, -E1B		
26 a, b	Motor protection, including reset, -Q1A, -Q1B		
27 a, b	Compressor		
29	Base card, -E29A		
32	Display unit, -E11		
33 a, b	High pressure pressostat		
34	CPU-card, -E34		
35	Brine pump		
41 a, b	Low pressure pressostat		
42 a, b	Service connection, low pressure		
48 a, b	Expansion valve		
52 **	Safety valve, brine side		
60 a, b	EMC-Filter, -Z60A, -Z60B ****		
63 **	Particle filter		
65 a, b	Drying filter		
69 a, b	Contact, compressor operation, -K68A, -K68B		
70	Heating medium flow from module A		
71	Connection, heating medium return		
72	Heating medium flow from module B		
73	Return line from water heater		
75	Air vent valve, heating medium system		
76	Drain for heating medium system		
77	Venting valve, collector system		
78	Drain for collector system		
79	Temperature sensor, brine out, (KB-utB)		
80	Temperature sensor, brine out, (KB-utA)		

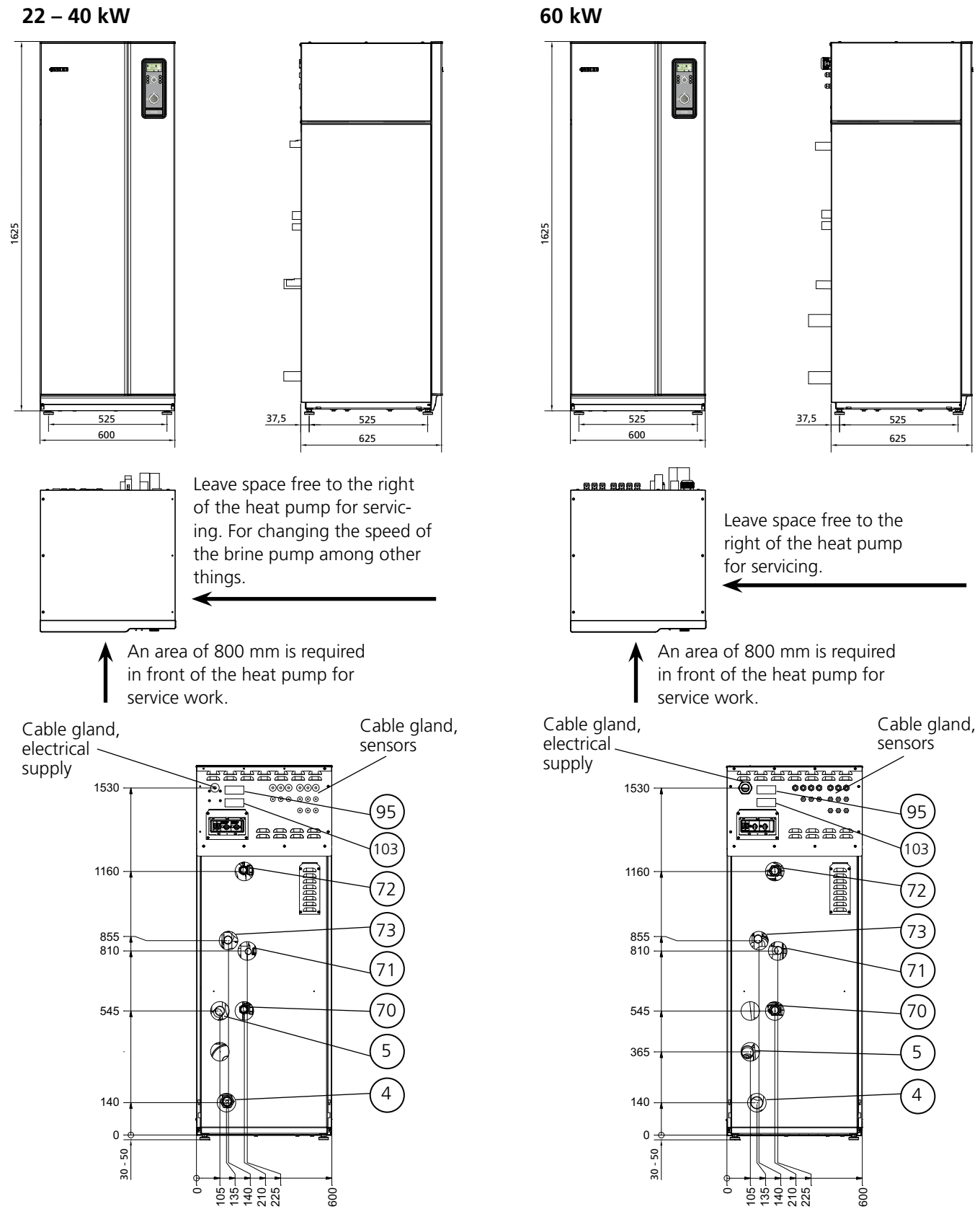
* Accessories

** Enclosed

*** Only 30, 40, 60 kW

**** Accessories only 60 kW

Dimensions and setting-out coordinates



Pipe connections	ext ø	22 – 40 kW	60 kW
(4)/(5) Brine in/out	(mm)	42	54
(70)/(72) Heating medium out/supply (Cooling module A/B)	(mm)	28	35
(71)/(73) Heating medium return	(mm)	35	35

Technical data



Type		22	30	40	60
Delivered/supplied power ¹⁾ at 0/35 °C ²⁾	(kW)	23,1/4,8	30,8/6,8	39,0/9,0	60,6/13,8
Delivered/supplied power ¹⁾ at 0/50 °C ²⁾	(kW)	21,6/6,3	29,5/8,9	37,2/11,1	54,8/17,0
Delivered/supplied power ¹⁾ at 0/45 °C ³⁾	(kW)	20,9/6,1	28,8/8,6	36,3/10,9	55,8/16,7
Operating voltage	(V)	3 x 400 + N + PE 50 Hz			
Starting current without soft-start	(A)	-	-	-	90
Starting current with soft-start	(A)	22	30	30	59 ⁵⁾
Max operating current, compressor	(A)	2 x 7,5	2 x 10,5	2 x 13,9	2 x 21,2
Fuse, HP only (motor characteristic/slow blow)	(A)	25	35	35	50
Power, heating medium pump. single-phase	(W)	2 x 170			
Power, brine pump. single-phase	(W)	890			1290
Connection brine ext Ø	(mm)	42			54
Connection, heating medium ext Ø	(mm)	2 x 35/35			
Refrigerant quantity (R407C)	(kg)	2 x 2,1	2 x 2,3	2 x 2,5	-
Refrigerant quantity (R410A)	(kg)	-	-	-	2 x 2,4
Brine flow	(l/s)	1,30	1,48	1,94	2,78
Available pressure for collector system	(kPa)	125	110	90	70
Max pressure brine system	(bar)	3			
Pressure drop, evaporator	(kPa)	12	15	17	42
Operating temperature range collector system	(°C)	-5 – +20			
Max pressure heating medium	(bar)	6			
Heating medium flow in accordance with EN255 (l/s)	(l/s)	2 x 0,26	2 x 0,36	2 x 0,45	2 x 0,65
Pressure drop condenser flow in accordance with EN255 (l/s)	(kPa)	2,2	2,8	4,3	6,5
Max temperature (flow line/return line) ⁴⁾	(°C)	65/58			
Break value pressostat HP	(bar)	29			42
Differens pressostat HP	(bar)	-7			-10
Break value pressostat LP	(bar)	1,5			3,5
Differens pressostat LP	(bar)	+1,5			
Enclosure class		IP 21			
Weight	(kg)	315	338	356	350 ⁶⁾
Part no.		065 100	065 101	065 102	065 103

1) Compressor power only.

2) Refers to the brine flow temperature/heat medium flow temperature in accordance with EN 255.

3) Refers to the brine flow temperature/heat medium flow temperature in accordance with EN 14511.

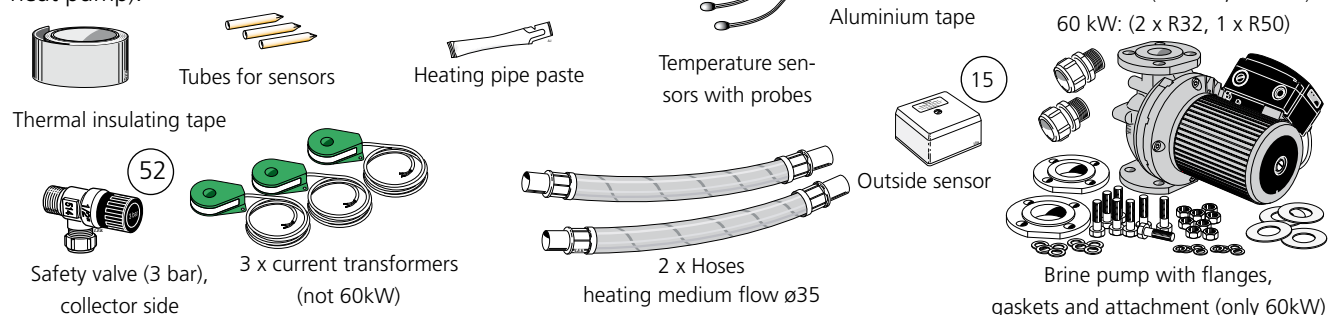
4) The compressor provides up to 65 °C, the remainder is obtained using the additional heat.

5) Accessories

6) External brine pump not included

Enclosed kit

The enclosed kit is located behind the front service cover by the upper module (for 60 kW it is located on top of the heat pump).

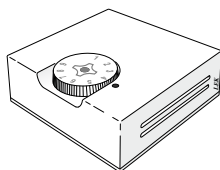


Technical specifications

Accessories

Room sensor RG 10

Part no. 018 433



Auxiliary Relay HR 10

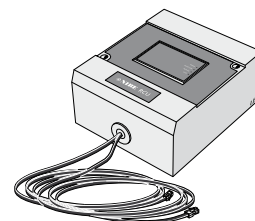
Part no. 089 423



Communication unit RCU 11

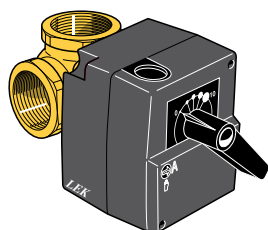
Makes it possible to control and monitor operation via a computer or mobile phone. For more information see www.nibe.eu

Part no. 067 006



Hot water control VST 20

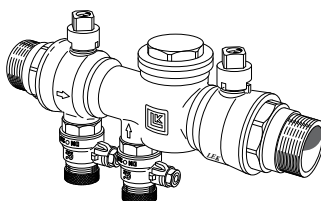
Part no. 089 388



Exchange valve, Cu-pipe Ø35
(Max recommended charge power,
40 kW)

Filling kit Brine KB R32 (max 30 kW)

including insulation
Art nr: 089 971



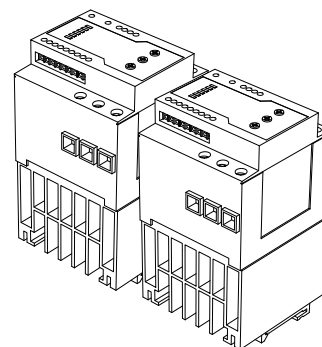
Soft start relay MSR 60 **

2 x Soft starters

2 x Filters

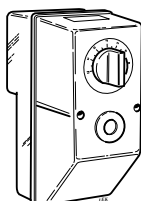
1 x Cable kit

Art nr: 067 044



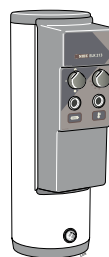
Junction box K11

with thermostat and
overheating protection
Part no. 018 893



ELK 213

Part no. 069 501



Electric element 13 kW

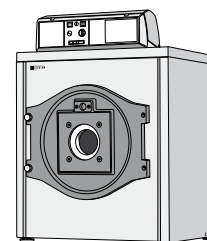
TYP-HL

HL 25, Part no. 089 880

HL 35, Part no. 089 881

HL 50, Part no. 089 882

HL 65, Part no. 089 883



Low temperature boiler
for oil and gas

Expansion card 11

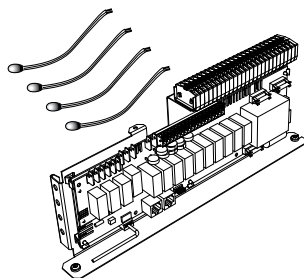
with terminal block and sensor

Part no. 067 042

Expansion card 12

with terminal block and sensor

Part no. 067 043

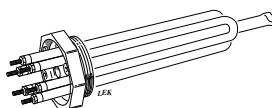


Immersion heater IU

3 kW Part no. 018 084

6 kW Part no. 018 088

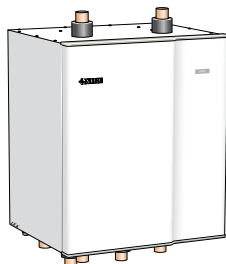
9 kW Part no. 018 090



HPAC 42

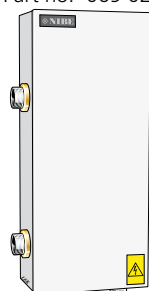
cooling module

Part no. 067 025



ELK 15*

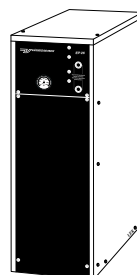
Part no. 069 022



Electric element 15 kW

EP 26*

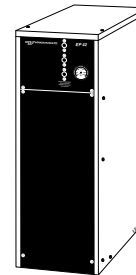
Part no. 069 320



Electric boiler 26 kW

EP 42*

Part no. 069 321



Electric boiler 42 kW

* Adapted for controlling from F1330

** Only for NIBE F1330-60kW

Actions with operating disturbances

In the event of malfunction or operating disturbances first check the points below:

Low room temperature

Cause: Compressor and electric element do not heat up.

Action: Check and replace the any blown circuit and main fuses.

Cause: The compressor does not start because of a too low value set on the heating curve.

Action: Check and possibly increase the Heating curve offset (knob on the front panel) or Curve slope (see section Room temperature).

Cause: The compressor is not running due to tripped internal overheating protection.

Action: Automatic resetting after cooling for a few hours.

Cause: Possible earth circuit-breaker tripped.

Action: Reset the earth circuit-breaker, if the earth circuit-breaker trips repeatedly, call an electrician.

High room temperature

Cause: Incorrect setting of Curve slope and/or Offset heating curve.

Action: Adjust the setting. Also see section Room temperature.

Low hot water temperature or no hot water

Cause: Large amount of hot water drawn off.

Action: Wait until the water heater reheats.

Cause: Compressor and/or immersion heater does not heat up.

Action: Check and replace the any blown circuit and main fuses.

Cause: Too low start temperature on the CPU-unit (34).

Action: Adjust the hot water setting, see the section Description of functions - Basic functions > Hot water production.

Cause: Possible earth circuit-breaker tripped.

Action: Reset the earth-fault breaker. If the earth-fault breaker trips repeatedly - call an electrician.

NOTE!

As F1330 can be connected to a large number of external units even these should be checked.

Standby mode

When the switch (8) is turned to the "  " position, the outputs for the external heating medium pumps (VBP3 and VBP4), internal heating medium pump (VBP-A) and the additional heat outputs (ETS-3/OP) and, when Expansion card 11 is connected, additional heat output ETS-6 are activated.

All control from the heat pump ceases, which means that when the oil boiler is connected, the shunt (SV-P) must be controlled manually.

When connecting an external electrical additional heater, a thermostat must be connected to the control circuit. This thermostat must be set to approximately 10 °C above the maximal flow temperature (menu 2.4) to not have an effect in normal operation. However, in standby mode the thermostat's cut-out value can be lowered if necessary.

Note that hot water is not produced in standby mode.

Actions with operating disturbances

Alarm

In the event of an alarm the background lighting flashes and the alarm is presented in plain text on the affected heat pump if the screen saver is active. The alarm status is also shown in menu 0.1.x and 5.2.0 as well as 5.3.0. If a constant alarm occurs this is saved in the alarm log together with numerous temperatures and output statuses (menu 9.3.0).

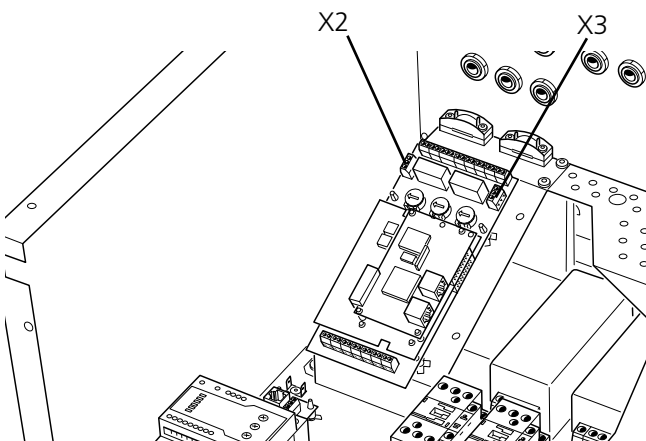
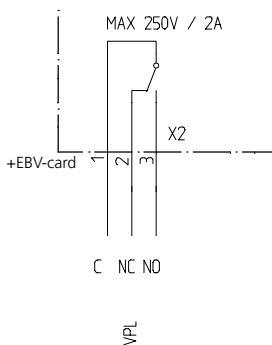
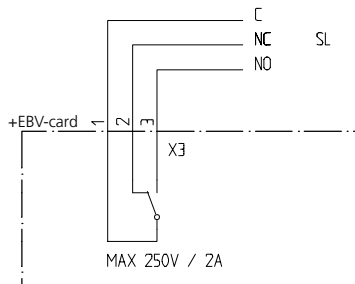
All alarms stop the compressor affected by the fault.

In the event of a constant alarm, the heat pump alarm relay is activated (VPL) on the affected heat pump. A common alarm is also activated on the Master when alarm occurs on any of the heat pumps in the system (SL).

Both relays are potential free and may be loaded max. with 250 V and 2 A. The relays are drawn in the alarm positions on the wiring diagram.

The heat pump alarm (VPL) is connected to the terminal blocks X2:1 (signal feed), X2:2 (NC in the event of an alarm), X2:3 (NO in the event of an alarm) on the EBV-card.

Common alarm (SL) is connected to the terminal blocks X3:1 (signal feed), X3:2 (NC in the event of an alarm) and X3:3 (NO in the event of an alarm) on the EBV-card.



Alarm with automatic resetting

High condenser return

The temperature on the incoming heating medium (VBRA or VBRB) is higher than maximum temperature in menu 5.4.1.

This may be due to:

- Too high flow on the heating medium.
- Too high stop temperature for hot water charging, check menu 1.2.

The alarm is reset when the temperature drops by 2 degrees below the set max temperature.

Hi Brinealarm

Incoming brine temperature (KBinA) exceeds the value set in menu 5.4.3.

The alarm is reset when the temperature drops by 2 degrees below the set temperature.

Lowbrinealarm

The temperature on the outgoing brine pump (KButA or KButB) is lower than the value set in menu 5.4.2.

This may be due to:

- Too low flow on the brine.

The alarm is reset when the temperature increases by 2 degrees above the set temperature.

Hot gas-alarm

Occurs when the hot gas sensor (HGA or HGB) temperature exceeds 135 °C.

This may be due to:

- Defective/incorrect setting on the expansion valve

The alarm is reset when the temperature drops below 90 °C. Becomes continuous after three repetitions within 240 minutes.

Com. error

Occurs when communication with one of the units fails.

This may be due to:

- Broken cable between heat pumps.
- Incorrect Master/Slave setting. See the section Description of functions - Start up > Master / Slave.

The alarm is reset automatically within 10 minutes from when the cause of the fault was rectified.

High condenser flow

The temperature of the outgoing heating medium (VBFA or VBFB) is outside the compressor's working range.

This may be due to:

- Incorrect flow.
- Incorrect settings

The alarm is reset when the temperature drops 2 degrees on the return line.

Constant alarm

SensfaltWw-in

This text is shown when a fault on the incoming heating medium sensor (VBRA or VBRB) has been registered.

This may be due to:

- Defective sensor.
- Broken sensor cable.

The alarm is reset once the fault has been rectified and the unit has been restarted or the alarm has been acknowledged in menu 5.4.11 (Reset alarm).

SensfaltBriou

This text is shown when a fault on the outgoing brine sensor (KButA or KButB) has been registered.

This may be due to:

- Defective sensor.
- Broken sensor cable.

The alarm is reset once the fault has been rectified and the unit has been restarted or the alarm has been acknowledged in menu 5.4.11 (Reset alarm).

Sensfalt HG

This text is shown when a fault on the hot gas sensor (HGA or HGB) has been registered.

This may be due to:

- Defective sensor.
- Broken sensor cable.

The alarm is reset once the fault has been rectified and the unit has been restarted or the alarm has been acknowledged in menu 5.4.11 (Reset alarm).

HP-Alarm

When this alarm is shown the high pressure pressostat has tripped.

This may be due to:

- No or too low flow on the heating medium side, check VBP-A and VBP-B.
- Too high stop temperature for hot water charging, check menu 1.2.
- Too high return temperature set in menu 5.4.1.

The alarm is reset once the fault has been rectified and the unit has been restarted or the alarm has been acknowledged in menu 5.4.11 (Reset alarm).

LP-alarm

When this alarm is shown the low pressure pressostat has tripped.

This may be due to:

- Bad circulation in collector system due to inferior venting/low pressure or ice (if ice has formed the brine pump (35) will be warm).
- Brine pump (35) malfunction
- Iced evaporator due to too low antifreeze concentration.
- Leakage in the brine circuit.

The alarm is reset once the fault has been rectified and the unit has been restarted or the alarm has been acknowledged in menu 5.4.11 (Reset alarm).

MS-alarm

Shown when the motor cut-out on compressor A/B or the brine pump has tripped.

This may be due to:

- Phase failure due to tripped fuse.
- Motor cut-out set incorrectly.
- Incorrect phase sequence.
- Incorrectly connected brine pump.

The alarm is reset once the fault has been rectified and the unit has been restarted or the alarm has been acknowledged in menu 5.4.11 (Reset alarm).

Lev.sens.alarm

Shows that the level, pressure or flow in the collector circuit is low. The brine pump stops.

This may be due to:

- Leakage in the brine circuit.

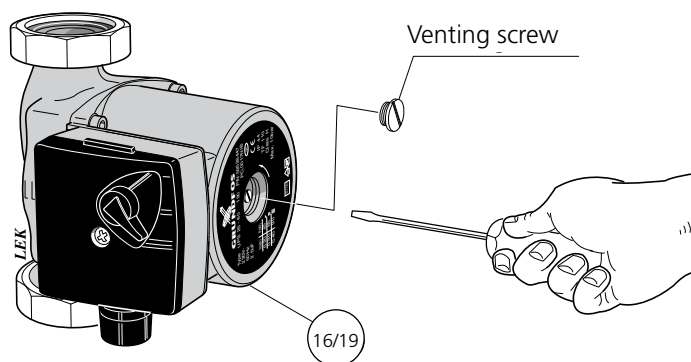
The alarm is reset once the fault has been rectified and the unit has been restarted or the alarm has been acknowledged in menu 5.4.11 (Reset alarm).

Actions with operating disturbances

Draining, heating medium side

Close the shut-off valves in heating medium system. Now open the drain valve (76). A little water, possibly warm, runs out. In order to empty the entire heating medium side the coupling that joins the heating medium side and the connection on the heat pump, heating medium flow should be loosened a little to let in air so that the remaining water can run out. When the heating medium is empty the requisite service can be carried out.

Helping the circulation pump to start



Draining, brine side

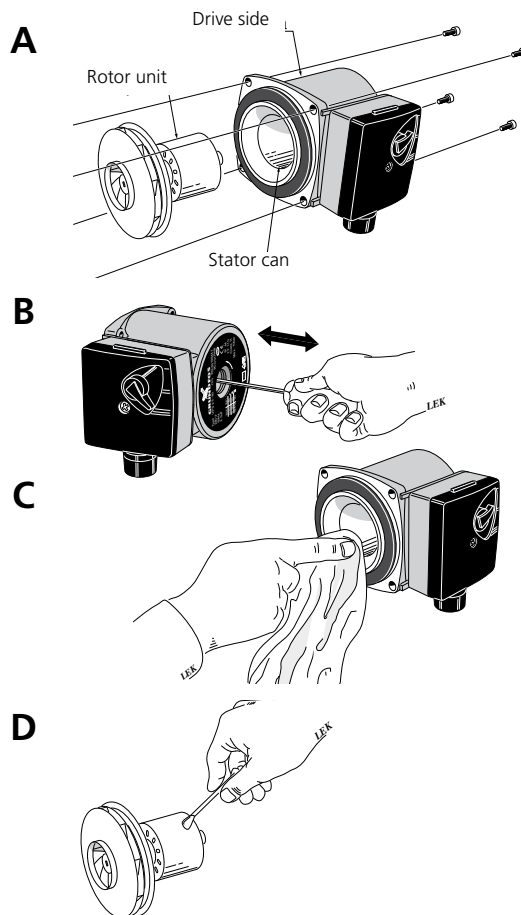
When performing a service on the collector system the closest shut off valves are closed on both sides. Draining of the fluid can then be done using the drain valve (78).

- Shut down F1330 by turning the switch (8) to **0**.
- Open the front cover.
- Loosen the air screw with a screwdriver. Hold a cloth around the screwdriver blade as a certain amount of water may run out.
- Insert a screwdriver and turn the pump rotor.
- Screw in the venting screw.
- Start F1330 and check whether the circulation pump runs.

It is usually easier to start the circulation pump with F1330 running, switch (8) set to **1**. If helping the circulation pump to start is performed with F1330 running, be prepared for the screwdriver to jerk when the pump starts.

Cleaning the circulation pump

- Set switch (8) to **0**.
- Close the shut-off valves outside the heat pump.
- Drain the part of the circuit where the pump to be cleaned is located, the heating medium pump or the brine pump.
- Loosen the venting screw.
- Remove the drive side from pump housing by loosening the two screws. Now dismantle the drive side (fig. **A**).
- Remove the rotor unit (including pump housing) by carefully pulling the pump rotor. If it sits firmly, it can be loosened by knocking the rear of the shaft (fig. **B**).
- Clean inside the stator can using a cleaning agent (fig. **C**).
- Also clean the rotor unit using the cleaning agent and lubricate the O-ring with, for example, a soap solution (fig. **D**).
- Refit the rotor unit.
- Refit the drive side (the flat packing is best placed on the pump housing).
- Open the shut-off valves.
- Set switch (8) to **1**.







(AT) **KNV Energietechnik GmbH**, Gahberggasse 11, 4861 Schörfling
Tel: +43 (0)7662 8963-0 Fax: +43 (0)7662 8963-44 E-mail: mail@knv.at www.knv.at

(CH) **NIBE Wärmetechnik AG**, Winterthurerstrasse 710, CH-8247 Flurlingen
Tel: (52) 647 00 30 Fax: (52) 647 00 31 E-mail: info@nibe.ch www.nibe.ch

(CZ) **Druzstevni zavody Drazice s.r.o.**, Drazice 69, CZ - 294 71 Benátky nad Jizerou
Tel: +420 326 373 801 Fax: +420 326 373 803 E-mail: nibe@nibe.cz www.nibe.cz

(DE) **NIBE Systemtechnik GmbH**, Am Reiherpfahl 3, 29223 Celle
Tel: 05141/7546-0 Fax: 05141/7546-99 E-mail: info@nibe.de www.nibe.de

(DK) **Vølund Varmeteknik**, Filial af NIBE AB, Brogårdsvej 7, 6920 Videbæk
Tel: 97 17 20 33 Fax: 97 17 29 33 E-mail: info@volundvt.dk www.volundvt.dk

(FI) **NIBE – Haato OY**, Valimotie 27, 01510 Vantaa
Puh: 09-274 697 0 Fax: 09-274 697 40 E-mail: info@haato.com www.haato.fi

(GB) **NIBE Energy Systems Ltd**, 3C Broom Business Park, Bridge Way, Chesterfield S41 9QG
Tel: 0845 095 1200 Fax: 0845 095 1201 E-mail: info@nibe.co.uk www.nibe.co.uk

(NL) **NIBE Energietechniek B.V.**, Postbus 2, NL-4797 ZG WILLEMSTAD (NB)
Tel: 0168 477722 Fax: 0168 476998 E-mail: info@nibenl.nl www.nibenl.nl

(NO) **NIBE AB**, Jerikoveien 20, 1067 Oslo
Tel: 22 90 66 00 Fax: 22 90 66 09 E-mail: info@nibe.se www.nibe-villavarme.no

(PL) **NIBE-BIAWAR Sp. z o. o.**, Aleja Jana Pawła II 57, 15-703 BIAŁYSTOK
Tel: 085 662 84 90 Fax: 085 662 84 14 E-mail: sekretariat@biawar.com.pl www.biawar.com.pl

NIBE AB Sweden, Box 14, Järnväggsgatan 40, SE-285 21 Markaryd
Tel: +46-(0)433-73 000 Fax: +46-(0)433-73 190 E-mail: info@nibe.se www.nibe.eu

