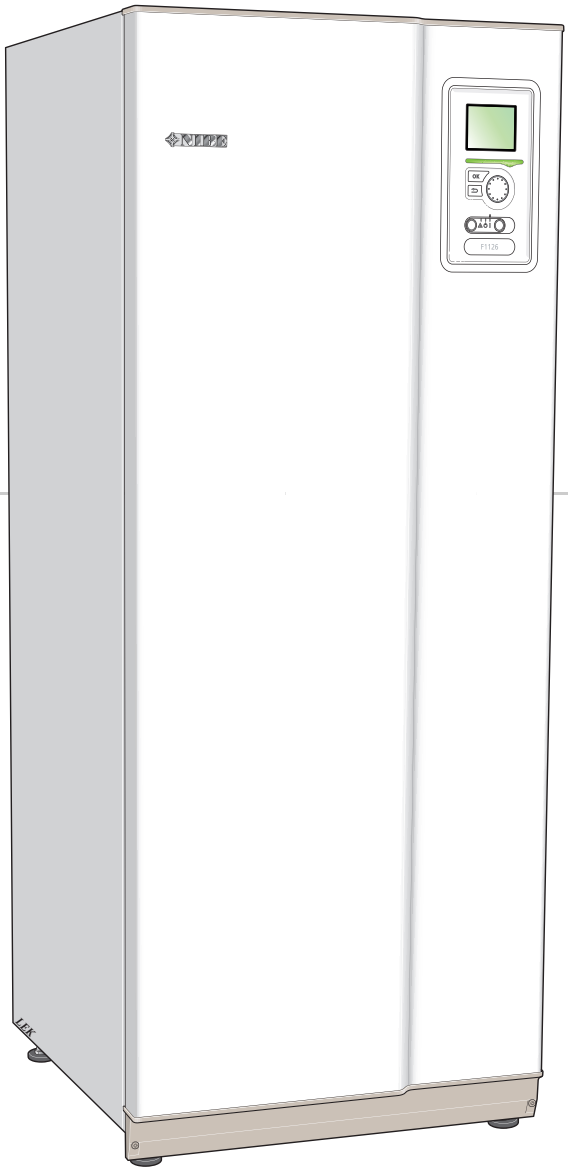


Installer manual

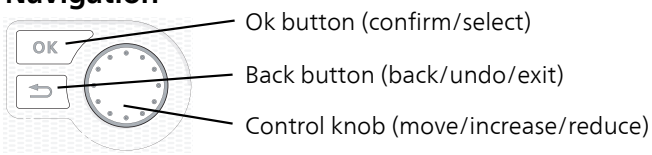
NIBE F1126

Ground source heat pump

IHB EN 1723-2
231713

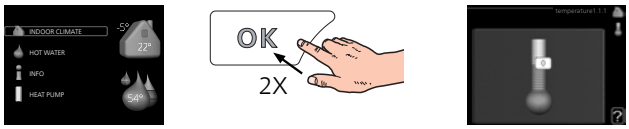
Quick guide

Navigation



A detailed explanation of the button functions can be found on page 29.
How to scroll through menus and make different settings is described on page 31.

Set the indoor climate



The mode for setting the indoor temperature is accessed by pressing the OK button twice, when in the start mode in the main menu.

Increase hot water volume

To temporarily increase the amount of hot water (if a hot water heater is installed to your F1126), first turn the control knob to mark menu 2 (water droplet) and then press the OK button twice.

Table of Contents

1 Important information

Safety information

This manual describes installation and service procedures for implementation by specialists.

The manual must be left with the customer.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

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Symbols

NOTE

This symbol indicates danger to person or machine .

Caution

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

TIP

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

Marking

CE The CE mark is obligatory for most products sold in the EU, regardless of where they are made.

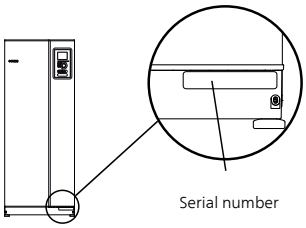
IP21 Classification of enclosure of electro-technical equipment.

Danger to person or machine.

Read the User Manual.

Serial number

The serial number can be found at the bottom right of the front cover and in the info menu (menu 3.1) and on the type plate (PF1).



Caution

You need the product's ((14 digit) serial number for servicing and support.

Recovery

Leave the disposal of the packaging to the installer who installed the product or to special waste stations.

Do not dispose of used products with normal household waste. It must be disposed of at a special waste station or dealer who provides this type of service.

Improper disposal of the product by the user results in administrative penalties in accordance with current legislation.

Environmental information

This unit contains a fluorinated greenhouse gas that is covered by the Kyoto agreement.

F-Gas Regulation (EU) No. 517/2014

The equipment contains R407C, a fluorinated greenhouse gas with a GWP value (Global Warming Potential) of 1,774. Do not release R407C into the atmosphere.

Inspection of the installation

Current regulations require the heating installation to be inspected before it is commissioned. The inspection must be carried out by a suitably qualified person. In addition, fill in the page for the installation data in the User Manual.

✔	Description	Notes	Signature	Date
Brine (page 13)				
	System flushed			
	System vented			
	Antifreeze			
	Level/Expansion vessel			
	Particle filter			
	Safety valve			
	Shut off valves			
	Circulation pump setting			
Heating medium (page 14)				
	System flushed			
	System vented			
	Expansion vessel			
	Particle filter			
	Safety valve			
	Shut off valves			
	Circulation pump setting			
Electricity (page 17)				
	Connections			
	Main voltage			
	Phase voltage			
	Fuses heat pump			
	Fuses property			
	Outside sensor			
	Safety breaker			
	Earth circuit-breaker			
	Setting of emergency mode thermostat			

2 Delivery and handling

Transport

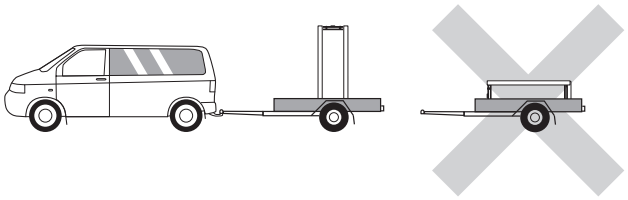
F1126 should be transported and stored vertically in a dry place. When being moved into a building, F1126 may be leant back 45 °.

Caution

The product can be tail heavy.

If the cooling module is pulled out and transported upright, F1126 can be transported on its back.

Remove the outer panels in order to protect them when moving in confined spaces inside buildings.



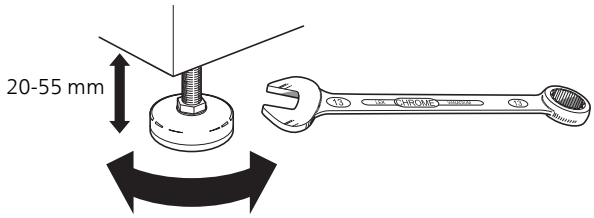
Extracting the cooling module

To simplify transport and service, the heat pump can be separated by pulling the cooling module out from the cabinet.

See page 40 for instructions about the separation.

Assembly

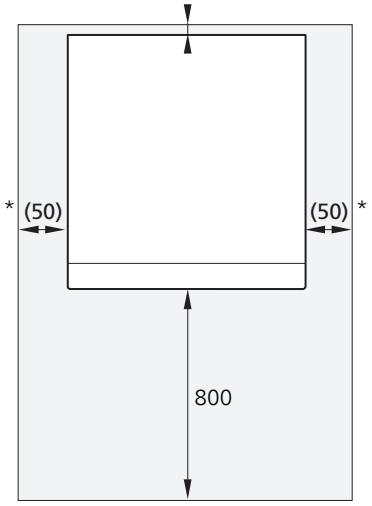
- Position F1126 on a fixed foundation that can take the weight of the heat pump. Use the product's adjustable feet to obtain a horizontal and stable set-up.



- Because water comes from F1126, the area where the heating pump is located must be equipped with floor drainage.
- Install with its back to an outside wall, ideally in a room where noise does not matter, in order to eliminate noise problems. If this is not possible, avoid placing it against a wall behind a bedroom or other room where noise may be a problem.
- Wherever the unit is located, walls to sound sensitive rooms should be fitted with sound insulation.
- Route pipes so they are not fixed to an internal wall that backs on to a bedroom or living room.

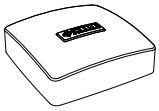
Installation area

Leave a free space of 800 mm in front of the product. Approx. 50 mm free space is required on each side, to remove the side panels (see image). The panels do not need to be removed during service. All service on F1126 can be carried out from the front. Leave space between the heat pump and the wall behind (and any routing of supply cables and pipes) to reduce the risk of any vibration being propagated.



* A normal installation needs 300 – 400 mm (any side) for connection equipment, i.e. level vessel, valves and electrical equipment.

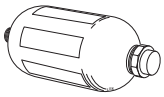
Supplied components



Outside sensor

Safety valve
0.3 MPa (3 bar)

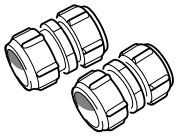
O-rings



Level vessel

Particle filter

Temperature sensor



Compression ring couplings

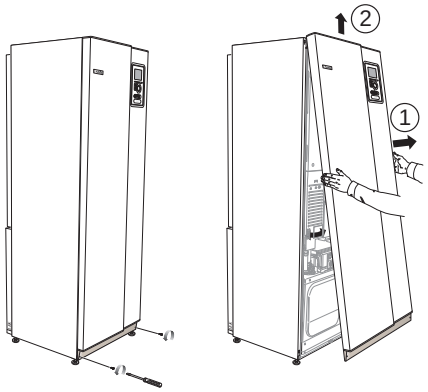
5-8 kW
2 x (ø28 x G25)
2 x (ø22 x G20)
12 kW
4 x (ø28 x G25)

Location

The kit of supplied items is placed in packaging on top of the heat pump.

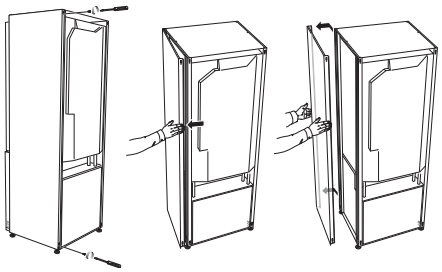
Removing the covers

Front cover



1. Remove the screws from the lower edge of the front panel.
2. Lift the panel out at the bottom edge and up.

Side covers

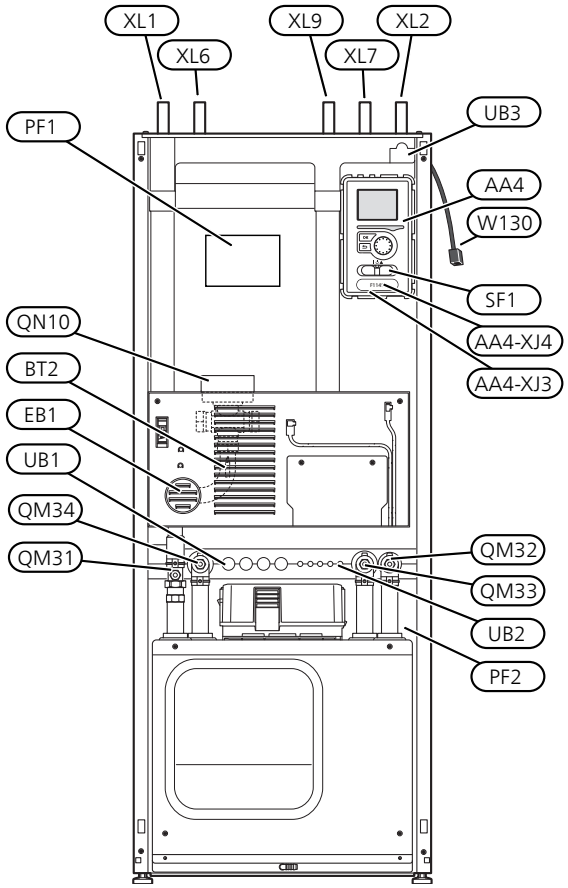


The side covers can be removed to facilitate the installation.

1. Remove the screws from the upper and lower edges.
2. Twist the cover slightly outward.
3. Move the hatch outwards and backwards.
4. Assembly takes place in the reverse order.

3 The heat pump design

General



Pipe connections

XL1	Connection, heating medium flow
XL2	Connection, heating medium return
XL6	Connection, brine in
XL7	Connection, brine out
XL9	Connection, hot water heater

HVAC components

QM31	Shut-off valve, heating medium flow
QM32	Shut off valve, heating medium return
QM33	Shut off valve, brine out
QM34	Shut-off valve, brine in
QN10	Shuttle valve, climate system/water heater

Sensors etc.

BT1	Outdoor temperature sensor*
BT2	Temperature sensors, heating medium flow

* Not illustrated

Electrical components

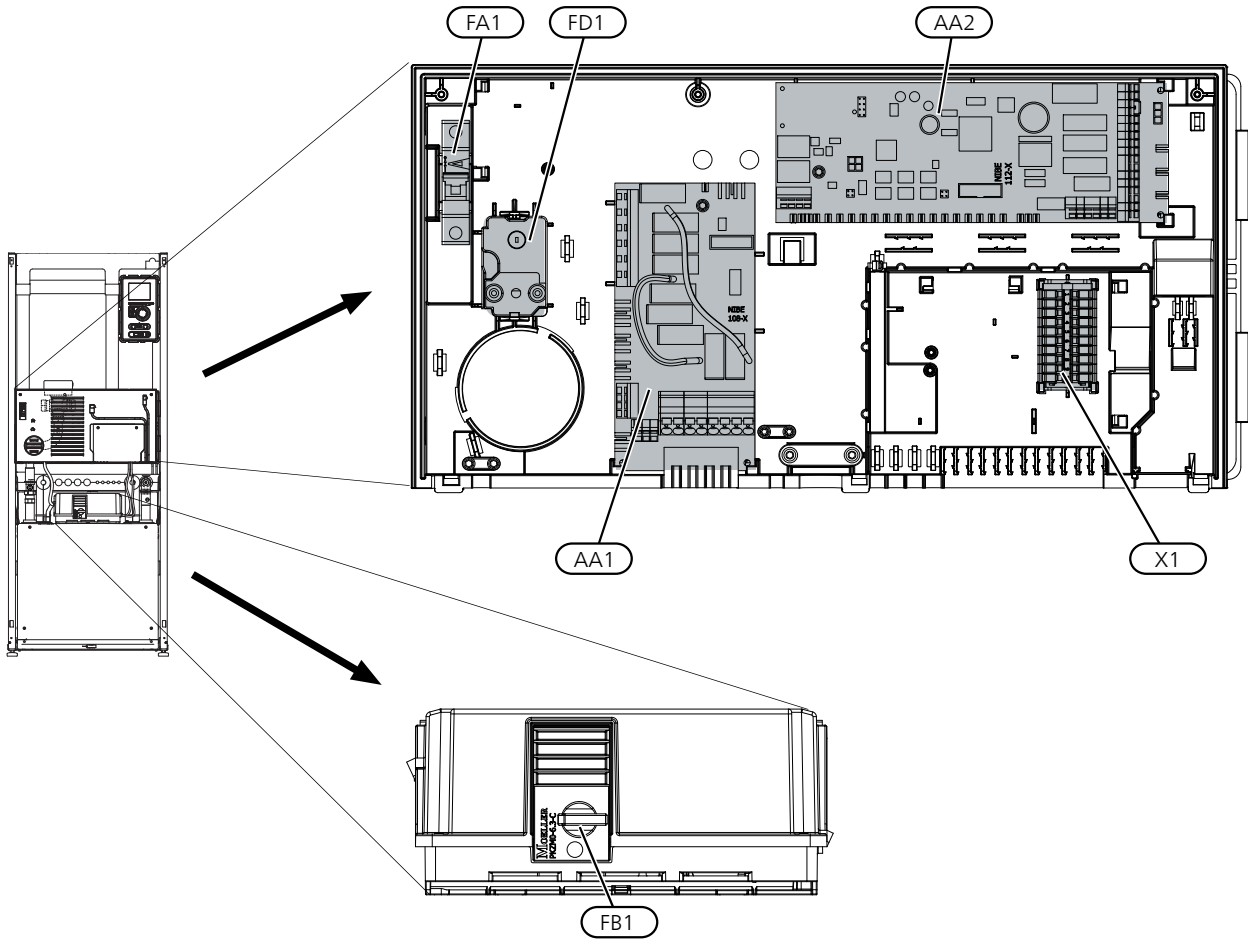
AA4	Display unit
	AA4-XJ3 USB socket
	AA4-XJ4 Service outlet (No function)
EB1	Immersion heater
SF1	Switch

Miscellaneous

PF1	Rating plate
PF2	Type plate, cooling section
UB1	Cable gland, incoming electricity
UB2	Cable gland
UB3	Cable gland, rear side, sensor

Designations in component locations according to standard IEC 81346-1 and 81346-2.

Distribution boxes



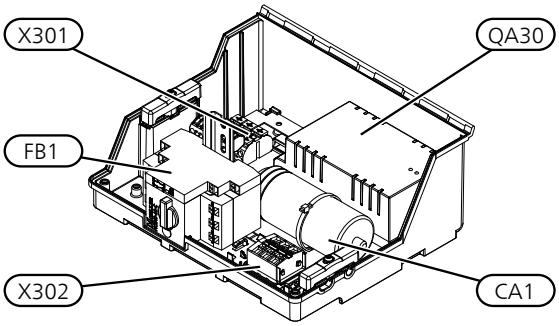
Electrical components

AA1	Immersion heater card
AA2	Base card
FA1	Miniature circuit-breaker
FB1	Motor cut-out*
FD1	Temperature limiter/Emergency mode thermostat
X1	Terminal block

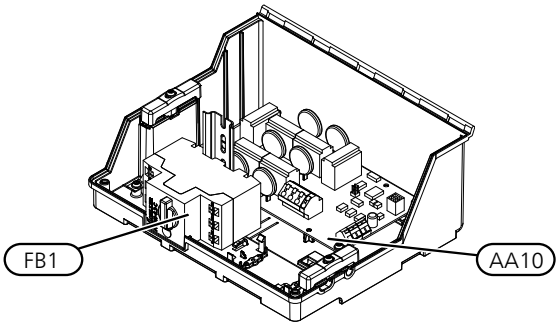
* 5 kW has auxiliary switch for motor cut-out.

Designations in component locations according to standard IEC 81346-1 and 81346-2.

3x400V 5 kW



3x400 V 6-12 kW



Electrical components

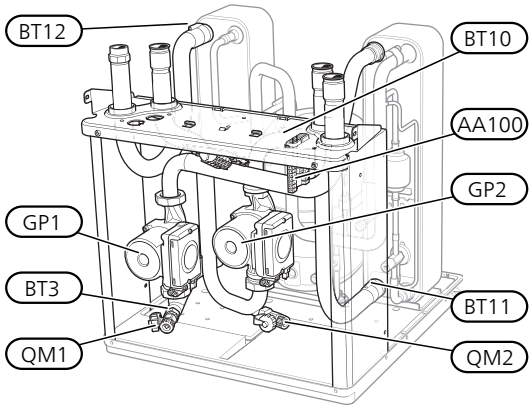
AA10	Soft-start card
CA1	Capacitor
FB1	Motor cut-out*
QA30	Soft-starter
X301	Terminal block
X302	Terminal block

* 5 kW has auxiliary switch for motor protection breaker.

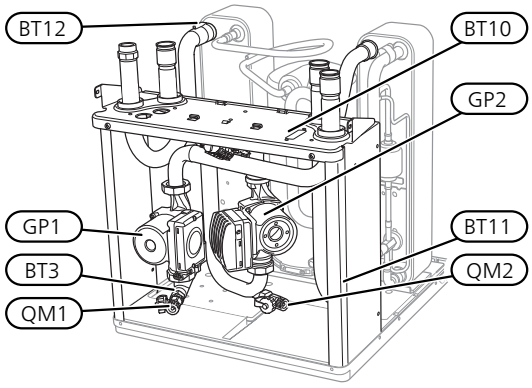
Designations in component locations according to standard IEC 81346-1 and 81346-2.

Cooling section

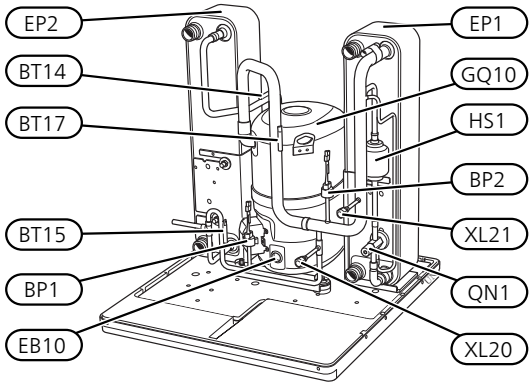
5 - 8 kW



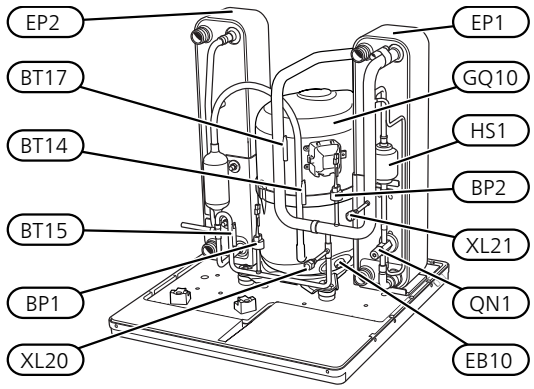
12 kW



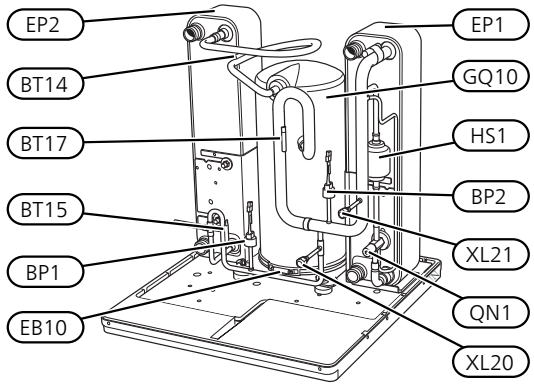
5 kW



6 & 8 kW



12 kW



Pipe connections

XL20 Service connection, high pressure
XL21 Service connection, low pressure

HVAC components

GP1 Circulation pump
GP2 Brine pump
QM1 Drainage, climate system
QM2 Draining, brine side

Sensors etc.

BP1 High pressure pressostat
BP2 Low pressure pressostat
BT3 Temperature sensors, heating medium return
BT10 Temperature sensor, brine in
BT11 Temperature sensor, brine out
BT12 Temperature sensor, condenser supply line
BT14 Temperature sensor, hot gas
BT15 Temperature sensor, fluid pipe
BT17 Temperature sensor, suction gas

Electrical components

AA100 Joint card
EB10 Compressor heater

Cooling components

EP1 Evaporator
EP2 Condenser
GQ10 Compressor
HS1 Drying filter
QN1 Expansion valve

Designations in component locations according to standard IEC 81346-1 and 81346-2.

4 Pipe connections

General

Pipe installation must be carried out in accordance with current norms and directives. F1126 can operate with a return temperature of up to 56 °C and an outgoing temperature from the heat pump of 70 (63 °C with only the compressor).

F1126 is not equipped with external shut off valves; these must be installed to facilitate any future servicing.

Caution

Ensure that incoming water is clean. When using a private well, it may be necessary to supplement with an extra water filter.

Caution

Any high points in the climate system, must be equipped with air vents.

NOTE

The pipe system needs to be flushed out before the heat pump is connected so that debris cannot damage component parts.

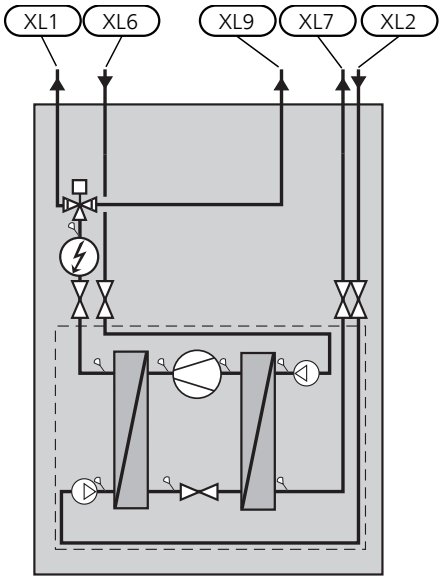
Symbol key

Symbol	Meaning
	Venting valve
	Shut-off valve
	Non-return valve
	Level vessel
	Trim valve
	Shunt / shuttle valve
	Safety valve
	Temperature sensor
	Expansion vessel
	Pressure gauge
	Circulation pump
	Particle filter
	Auxiliary relay
	Compressor
	Heat exchanger

System diagram

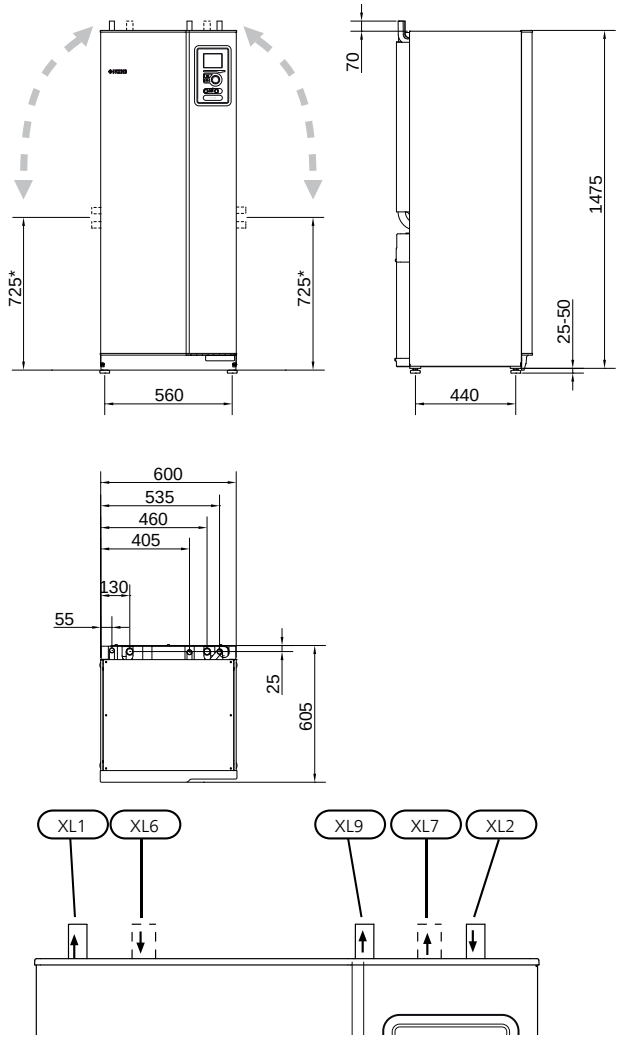
F1126 consists of heat pump, immersion heater, circulation pumps and control system. F1126 is connected to the brine and heating medium circuits.

In the heat pump evaporator, the brine (water mixed with anti-freeze, glycol or ethanol) releases its energy to the refrigerant, which is vaporised in order to be compressed in the compressor. The refrigerant, of which the temperature has now been raised, is passed to the condenser where it gives off its energy to the heating medium circuit and, if necessary, to any docked water heater. If there is a greater need for heating/hot water than the compressor can provide there is an integrated immersion heater.



XL1	Connection, heating medium flow
XL2	Connection, heating medium return
XL6	Connection, brine in
XL7	Connection, brine out
XL9	Connection, hot water heater

Dimensions and pipe connections



Pipe dimensions

Connection	(kW)	5-8	12
(XL6)/(XL7) Brine in/out ext Ø	(mm)	28	
(XL1)/(XL2) Heating medium flow/return ext Ø	(mm)	22	28
(XL9) Connection, hot water heater ext Ø	(mm)	22	28

* Can be angled for side connection.

Brine side

Collector

Type	Surface soil heat, recommended collector length (m)	Rock heat, recommended active drilling depth (m)
5 kW	200-300	70-90
6 kW	250-400	90-110
8 kW	325-2x250	120-145
12 kW	2x250-2x350	180-210

Applies to PEM hose 40x2.4 PN 6.3.

These are rough example values. At installation the correct calculations must be made according to local conditions.

Caution

The length of the collector hose varies depending on the rock/soil conditions, climate zone and on the climate system (radiators or underfloor heating).

Max length per coil for the collector should not exceed 400 m.

In those cases where it is necessary to have several collectors, these should be connected in parallel with the possibility for adjusting the flow of the relevant coil.

For surface soil heat, the hose should be buried at a depth determined by local conditions and the distance between the hoses should be at least 1 metre.

For several bore holes, the distance between the holes must be determined according to local conditions.

Ensure the collector hose rises constantly towards the heat pump to avoid air pockets. If this is not possible, airvents should be used.

Because the temperature of the brine system can fall below 0 °C, it must be protected against freezing down to -15 °C. When making the volume calculation, use 1 litres of ready mixed brine per metre of collector hose (applies when using PEM-hose 40x2.4 PN 6.3) as a guide value.

Side connection

It is possible to angle the brine connections, for connection to the side instead of top connection.

To angle out a connection:

1. Disconnect the pipe at the top connection.
2. Angle the pipe in the desired direction.
3. If necessary, cut the pipe to the desired length.

Connecting the brine side

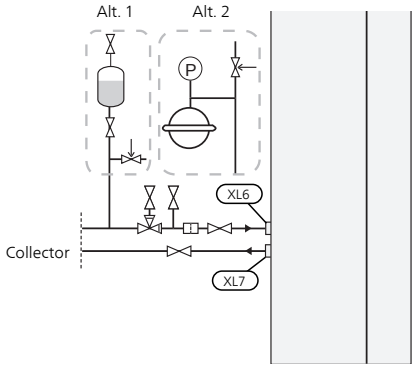
- Insulate all indoor brine pipes against condensation.
- The level vessel must be installed at the highest point in the brine system, on the incoming pipe before the brine pump (Alt. 1).

  If the level vessel cannot be placed at the highest point, an expansion vessel must be used (Alt. 2).

> **NOTE**
>
> Note that condensation may drip from the level vessel. Position the vessel so that this does not harm other equipment.

- Details of the antifreeze used must be shown on the level vessel.
- Install the enclosed safety valve under the level vessel as illustrated. The entire length of the overflow water pipe from the safety valve must be inclined to prevent water pockets and must also be frost-free.
- Install shut off valves as close to the heat pump as possible.
- Fit the supplied particle filter on 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 extra heat exchanger.

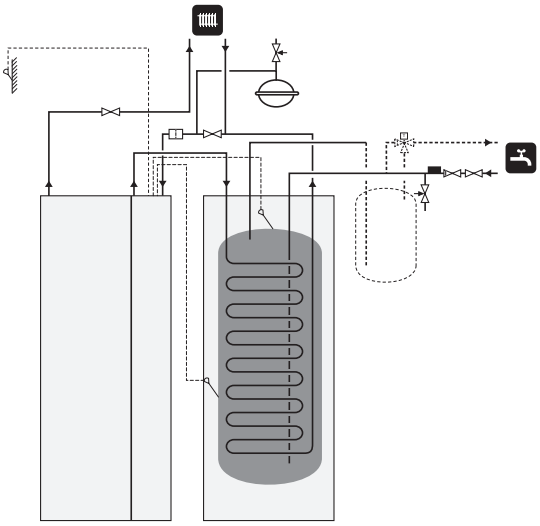


Heating medium side

Connecting the climate system

A climate system is a system that regulates indoor comfort with the help of the control system in F1126 and for example radiators, underfloor heating/cooling, fan convectors etc.

- Install all required safety devices, shut-off valves (as close to the heat pump as possible), and supplied particle filter.
- The safety valve must have a maximum 0.25 MPa (2.5 bar) opening pressure and be installed on the heating medium return as illustrated. The entire length of the overflow water pipe from the safety valves must be inclined to prevent water pockets and must also be frost proof.
- When connecting to a system with thermostats on all radiators, a relief valve must be fitted, or some of the thermostats must be removed to ensure sufficient flow.



Water heater

Connecting the hot water heater

> **NOTE**
>
> If F1126 is not docked to a water heater or if it is to work with fixed condensing, the connection for the water heater (XL9) must be plugged.

- Any docked hot water heater must be fitted with necessary set of valves.
- The mixing valve must be installed if the setting is changed so that the temperature can exceed 60 °C.
- The setting for hot water is made in menu 5.1.1.
- The safety valve must have a maximum opening pressure of 1.0 MPa (10.0 bar) and be installed on the incoming domestic water line as illustrated. The entire length of the overflow water pipe from the safety valve must be inclined to prevent water pockets and must also be frost-free.

> **Caution**
>
> Hot water production is activated in menu 5.2 or in the start guide.

Fixed condensing

If F1126 is to work towards the water heater with fixed condensing you must connect an external flow sensor (BT25) according to the description on page 22. In addition, you must perform the following menu settings.

Menu	Menu setting (local variations may be required)
1.9.3 - min. flow line temp.	Desired temperature in the tank.
5.1.2 - max flow line temperature	Desired temperature in the tank.
5.1.10 - op. mod heat med pump	intermittent
4.2 - op. mode	manual

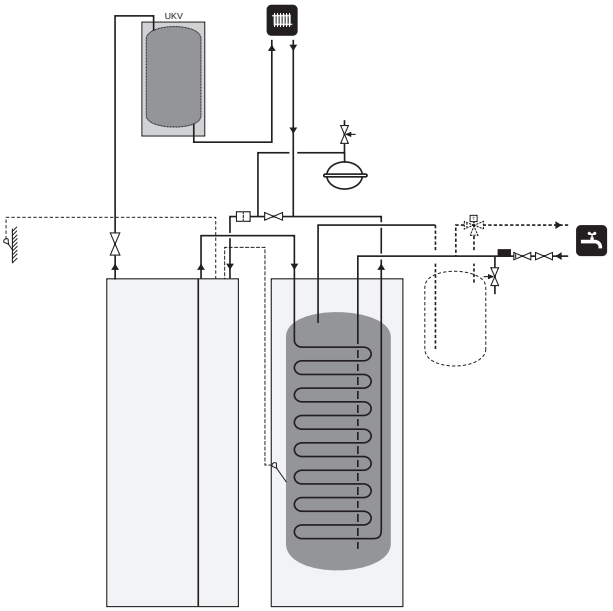
Docking alternatives

F1126 can be connected in several different ways, some of which are shown below.

Further option information is available at www.nibe.eu and in the respective assembly instructions for the accessories used. See page 46 for a list of the accessories that can be used with F1126.

Buffer vessel

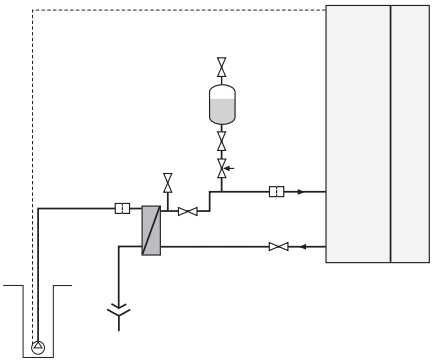
If the climate system volume is too small for the heat pump output, the radiator system can be supplemented with a buffer vessel, for example NIBE UKV.



Ground water system

An intermediate heat exchanger is used to protect the heat pump's exchanger from dirt. The water is released into a buried filtration unit or a drilled well. This docking alternative requires the EXC 40 accessory.

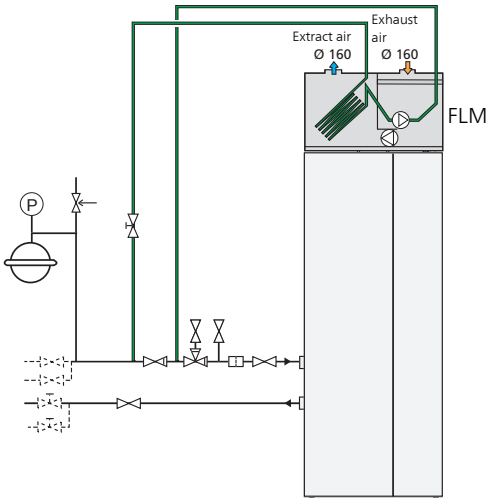
If this docking alternative is used, "min. brine out" in menu 5.1.7 "br pmp al set." must be changed to a suitable value to prevent freezing in the heat exchanger.



Ventilation recovery

The installation can be supplemented with the exhaust air module FLM to provide ventilation recovery.

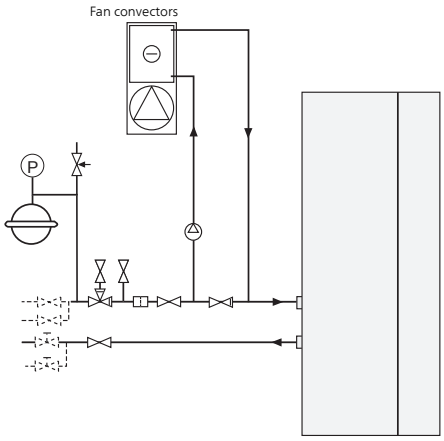
- Pipes and other cold surfaces must be insulated with diffusion-proof material to prevent condensation.
- The brine system must be supplied with a pressure expansion vessel (CM3). If there is a level vessel (CM2) this should be replaced.



Free cooling

The installation can be supplemented with fan convectors, for example, in order to allow connections for free cooling.

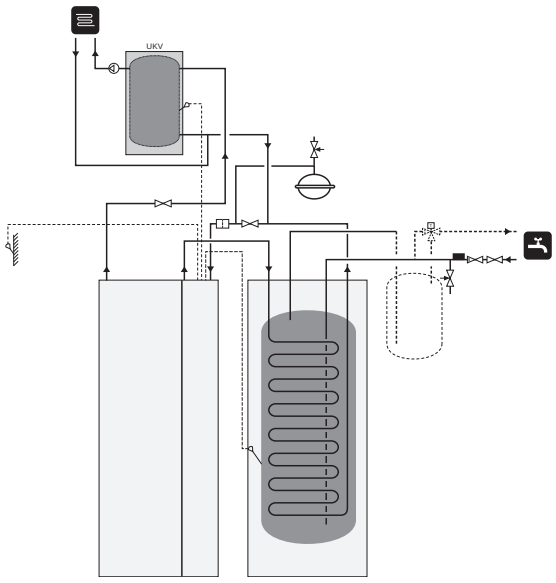
- Pipes and other cold surfaces must be insulated with diffusion-proof material to prevent condensation.
- Where the cooling demand is high, fan convectors with drip trays and drain connection are needed.
- The brine system must be supplied with a pressure expansion vessel (CM3). If there is a level vessel (CM2) this should be replaced.



Under floor heating systems

The external circulation pump is dimensioned for the under floor heating system's demand.

If the climate system volume is too small for the heat pump output, the underfloor heating system can be supplemented with a buffer vessel, for example NIBE UKV.



5 Electrical connections

General

All electrical equipment except for the outdoor temperature sensors has been connected at the factory.

- Disconnect the heat pump before insulation testing the house wiring.
- If the building is equipped with an earth-fault breaker, F1126 should be equipped with a separate one.
- If a miniature circuit breaker is used this should have at least motor characteristic "C". See page 48 for fuse size.
- Electrical wiring diagram for the heat pump, see page 56.
- Communication and sensor cables to external connections must not be laid close to high current cables.
- The minimum area of communication and sensor cables to external connections must be 0.5 mm² up to 50 m, for example EKKX or LiYY or equivalent.
- When cable routing in F1126, cable grommets (e.g. UB1-UB3, marked in image) must be used. In UB1-UB3 the cables are inserted through the heat pump from the back to the front.

NOTE

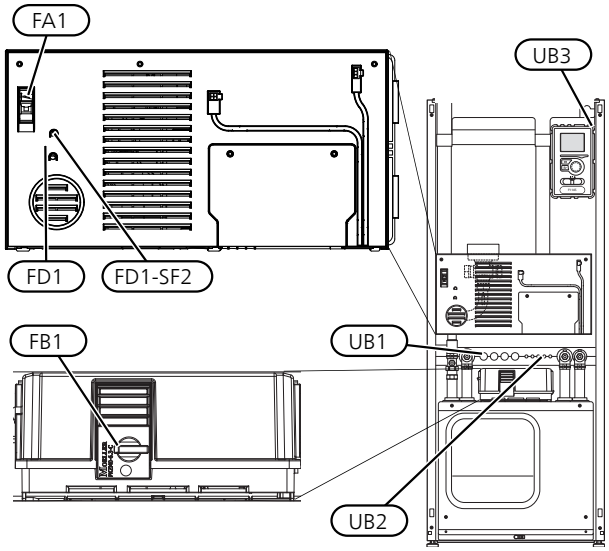
The switch (SF1) must not be moved to "I" or "⚠" until the boiler has been filled with water. Component parts of the product can be damaged.

NOTE

Electrical installation and service must be carried out under the supervision of a qualified electrician. Cut the current with the circuit breaker before carrying out any servicing. Electrical installation and wiring must be carried out in accordance with the stipulations in force.

NOTE

Check the connections, main voltage and phase voltage before the machine is started, to prevent damage to the heat pump electronics.



Miniature circuit-breaker

The heat pump operating circuit and some of its internal components are internally fused by a miniature circuit breaker (FA1).

Temperature limiter

The temperature limiter (FD1) cuts the power to the electric additional heat if the temperature exceeds 89°C and is reset manually.

Resetting

The temperature limiter (FD1) is accessible behind the front cover. Reset the temperature limiter by pressing the button (FD1-SF2) using a small screwdriver.

Motor cut-out

Motor protection breaker (FB1) cuts the power to the compressor if the current is too high.

Resetting

The motor protection breaker (FB1) is accessible behind the front cover. The breaker is reset by twisting the control knob to horizontal position.

Caution

Check the miniature circuit-breaker, temperature limiter and motor protection breaker. They may have tripped during transportation.

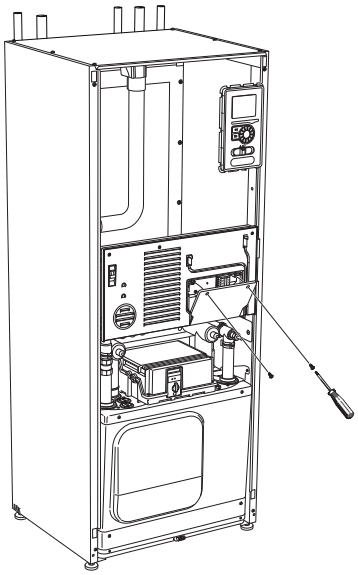
Accessibility, electrical connection

The plastic cap of the electrical boxes is opened using a screwdriver.

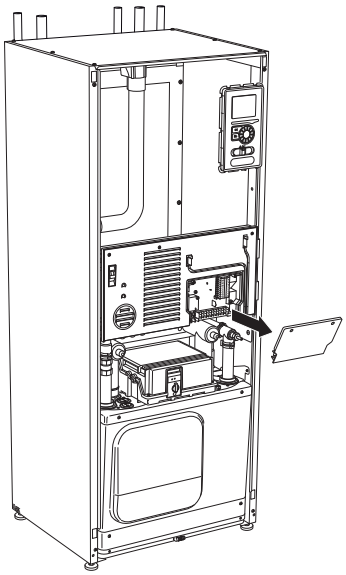
> **NOTE**
> The cover for the terminal block for soft inputs is opened using a Torx 20 screwdriver.

Removing the cover, terminal block

1. Unscrew the screws and angle out the cover.

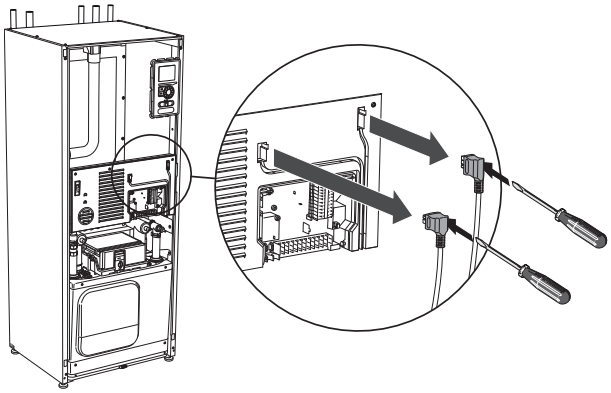


2. Pull off the cover.

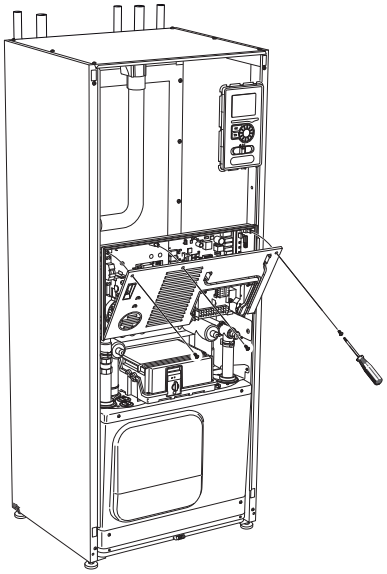


Removing the hatch, electrical cabinet

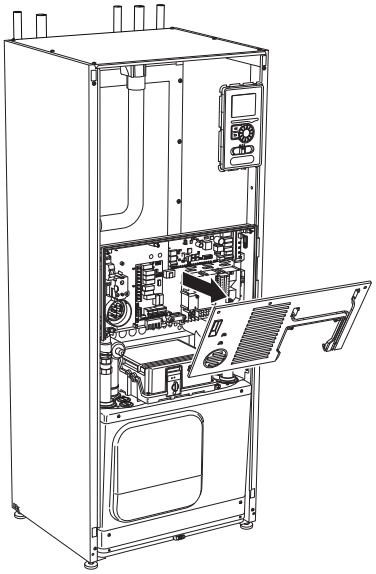
1. Disconnect the contacts.



2. Unscrew the screws and angle out the cover.

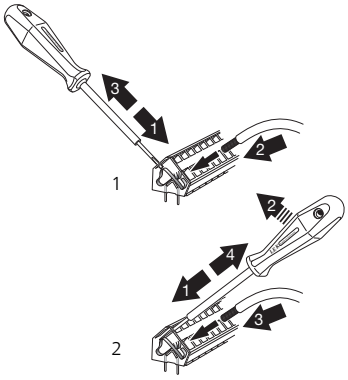


3. Pull off the cover.



Cable lock

Use a suitable tool to release/lock cables in the heat pump terminal blocks.



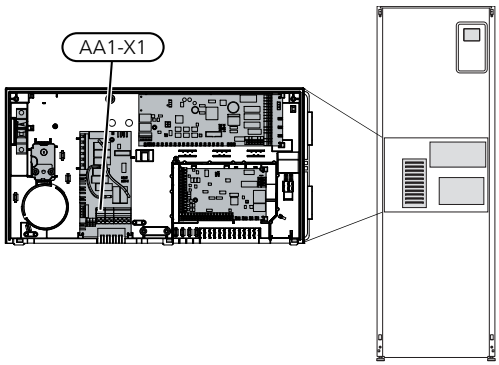
Connections

NOTE

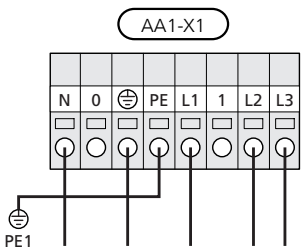
To prevent interference, unscreened communication and/or sensor to external connections cables must not be laid closer than 20 cm to high voltage cable when cable routing.

Power connection

F1126 must be installed with a disconnection option on the supply cable. Minimum cable area must be sized according to the fuse rating used. Enclosed cable for incoming supply electricity is connected to terminal block X1 on the immersion heater board (AA1). All installations must be carried out in accordance with current norms and directives.



Connection 3x400V



NOTE

F1126-12 contains scroll compressor, which means that it is important that electrical connections are made with the correct phase sequence. With the incorrect phase sequence, the compressor does not start and an alarm is displayed.

If separate supply to the compressor and immersion heater is required, see section "Switch for external blocking of addition and/or compressor" on page 22.

Tariff control

If the voltage to the immersion heater and/or the compressor disappears during a certain period, there must also be blocking via the AUX-input, see "Connection options - Possible selection for AUX inputs" page. 22

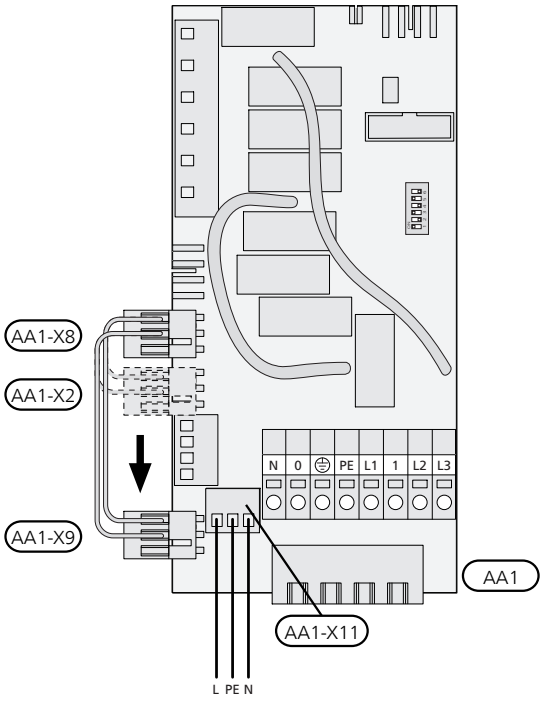
Connecting external operating voltage for the control system

NOTE

Mark up any junction boxes with warnings for external voltage.

If you wish to connect external operating voltage for the control system to F1126 on the immersion heater circuit board (AA1) the edge connector at AA1:X2 must be moved toAA1:X9 (as illustrated).

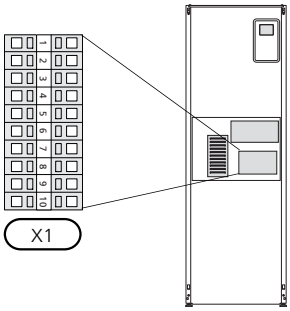
Operating voltage (1x230V ~ 50Hz) is connected to AA1:X11 (as illustrated).



1x230V+N+PE operating voltage

Connecting sensors

Connect the sensor(s) to terminal block X1 according to the instructions below.

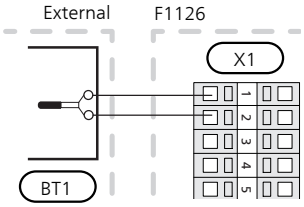


Outside sensor

Install the outdoor temperature sensor (BT1) in the shade on a wall facing north or north-west, so it is unaffected by the morning sun for example.

Connect the sensor to terminal block X1:1 and X1:2. Use a twin core cable of at least 0.5 mm² cable area.

If a conduit is used it must be sealed to prevent condensation in the sensor capsule.

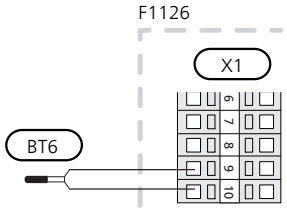


Temperature sensor, hot water charging

The temperature sensor, hot water charging (BT6) is placed in the submerged tube on the water heater.

Connect the sensor to terminal block X1:9 and X1:10. Use a 2 core cable of at least 0.5 mm² cable area.

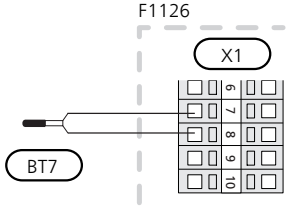
Hot water charging is activated in menu 5.2 or in the start guide.



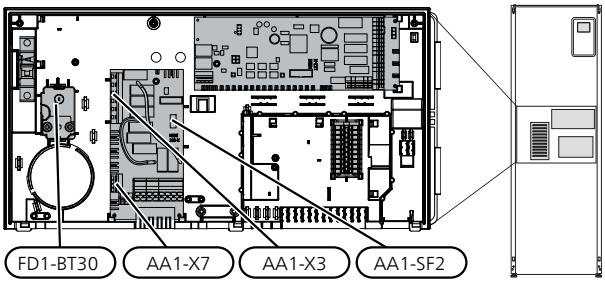
Temperature sensor, hot water top

A temperature sensor for hot water top (BT7) can be connected to F1126 for showing the water temperature at the top of the tank.

Connect the sensor to terminal block X1:7 and X1:8. Use a 2 core cable of at least 0.5 mm² cable area.



Settings



Electrical addition - maximum output

The electric additional heat may be restricted depending on the selected country.

On delivery, the immersion heater is connected for a maximum of 7 kW (switchable to 9 kW).

The immersion heater's output is split into seven steps (four steps if the immersion heater is switched to maximum 9 kW), according to the table below.

Setting max electrical output

Setting maximum output in the electric additional heat is done in menu 5.1.12.

The table displays the total phase current for the immersion heater at start up. If an immersion heater has already been started and is not used for its full capacity the values in the table can be changed because the control initially uses this immersion heater.

Switching to maximum electrical output

If more than the maximum output (7 kW) for the immersion heater connected on delivery is needed, the heat pump can be switched to maximum 9 kW.

Move the white cable from terminal block X7:23 to terminal block X3:13 (the seal on the terminal block must be broken) on the immersion heater card (AA1).

3x400V V (maximum electrical output, connected upon delivery 7 kW)

Max electrical addition (kW)	Max phase current L1(A)	Max phase current L2(A)	Max phase current L3(A)
0	–	–	–
1	–	–	4.3
2	–	8.7	–
3	–	8.7	4.3
4	–	8.7	8.7
5	8.7	8.7	13.0
6	8.7	8.7	8.7
7	8.7	8.7	13.0

3x400V (maximum electrical output, switched to 9 kW)

Max electrical addition (kW)	Max phase current L1(A)	Max phase current L2(A)	Max phase current L3(A)
0	–	–	–
2	–	8.7	–
4	–	8.7	8.7
6	8.7	8.7	8.7
9	8.7	15.6	15.6

Emergency mode

When the heat pump is set to emergency mode (SF1 is set to ⚠) only the most necessary functions are activated.

- The compressor is off and heating is managed by the immersion heater.
- Hot water is not produced.

NOTE

The switch (SF1) must not be moved to "I" or "⚠" until F1126 has been filled with water. Components in the product can be damaged.

Power in emergency mode

The immersion heater's output in emergency mode is set with the dipswitch (S2) on the immersion heater circuit board (AA1) according to the table below. Factory setting is 6 kW.

When installing according to current building regulations (BBR) the immersion heater's power in emergency mode must be set to the maximum permitted electrical output.

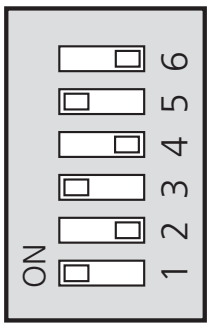
3x400V (maximum electrical output, connected upon delivery 7 kW)

kW	1	2	3	4	5	6
1	off	off	off	off	off	**on**
2	off	off	**on**	off	off	off
3	off	off	**on**	off	off	**on**
4	off	off	**on**	off	**on**	off
5	**on**	off	**on**	off	off	**on**
6	**on**	off	**on**	off	**on**	off
7	**on**	off	**on**	off	**on**	**on**

3x400V (maximum electrical output, switched to 9 kW)

kW	1	2	3	4	5	6
2	off	off	off	off	**on**	off
4	off	off	**on**	off	**on**	off
6	**on**	off	**on**	off	**on**	off
9	**on**	off	**on**	**on**	**on**	**on**

3x400V

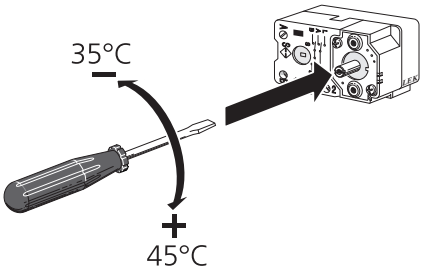


AA1-SF2

The image shows the dip-switch (AA1-SF2) in the factory setting, that is 6 kW.

Emergency mode thermostat

The supply temperature in emergency mode is set using a thermostat (FD1-BT30). It can be set to 35 (pre-set, for example under floor heating) or 45 °C (for example radiators).



Optional connections

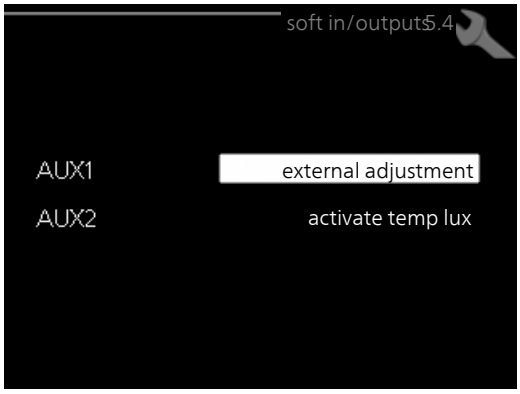
External connection options

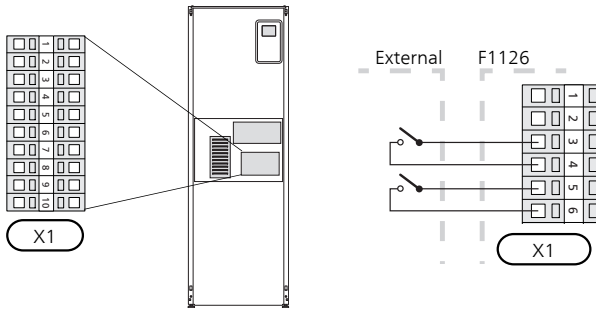
On the terminal block (X1) F1126 has software controlled inputs for connecting the external switch function or sensor. This means that when an external switch function or sensor is connected to one of two special connections, the correct function must be selected to the correct connection in the software in F1126.

Caution

If an external switch function or sensor is connected to F1126, the function for use input must be selected in menu 5.4, see page 36.

Selectable inputs on the input card for these functions are AUX1 (X1:3-4) and AUX2 (X1:5-6)





The example above uses the inputs AUX1 (X1:3-4) and AUX2 (X1:5-6) on the terminal block (X1).

Caution

Some of the following functions can also be activated via menu settings.

Possible selection for AUX inputs

Room temperature sensor (accessory)

F1126 can be supplemented with the accessory RTS 40 (room temperature sensor).

The room temperature sensor is connected to the selected input (menu 5.4, see page 36) on terminal block X1 and installed in the building according to the installer handbook.

Temperature sensor, external flow line

If temperature sensor, external flow line (BT25) needs to be used, connect it to selected input (menu 5.4, see page 36) on terminal block X1. Use a 2 core cable of at least 0.5 mm² cable area.

Switch for external blocking of addition and/or compressor

Blocking for addition heat and compressor is connected on two different AUX inputs.

In those cases where external blocking of additional heat and/or compressor is wanted, it can be connected to terminal block X1, which is positioned behind the front cover.

The additional heat and/or the compressor are disconnected by connecting a potential-free switch function to the input selected in menu 5.4, see page 36.

External blocking of addition and compressor can be combined.

A closed contact results in the electrical output being disconnected.

Contact for external tariff blocking

In those cases where external tariff blocking is used, it can be connected to terminal block X6 on the input board (AA3), which is positioned behind the front cover.

Tariff blocking means that the additional heat, the compressor, the heating and hot water are blocked by connecting a potential-free switch function to the input selected in menu 5.4, see page 36.

Closed switch means that tariff blocking is activated.

NOTE

When tariff blocking is activated, the min. supply line does not apply.

Switch for "SG ready"

NOTE

This function can only be used in mains networks that support the "SG Ready"-standard .

"SG Ready" requires two AUX inputs.

In cases where this function is required, it must be connected to terminal block X6 on the input card (AA3).

"SG Ready" is a smart form of tariff control where your electricity supplier can affect the indoor and hot water temperatures or simply block the additional heat and/or the compressor in the heat pump at certain times of the day (can be selected in menu 4.1.5 after the function is activated). Activate the function by connecting potential-free switch functions to two inputs selected in menu 5.4 (SG Ready A and SG Ready B), see page 36.

Closed or open switch means one of the following:

- **Blocking (A: Closed, B: Open)**

  "SG Ready" is active. The compressor in the heat pump and additional heat is blocked like the day's tariff blocking.

- **Normal mode (A: Open, B: Open)**

  "SG Ready" is not active. No effect on the system.

- **Low price mode (A: Open, B: Closed)**

  "SG Ready" is active. The system focuses on costs savings and can for example exploit a low tariff from the electricity supplier or over-capacity from any own power source (effect on the system can be adjusted in the menu 4.1.5).

- **Overcapacity mode (A: Closed, B: Closed)**

  "SG Ready" is active. The system is permitted to run at full capacity at over capacity (very low price) with the electricity supplier (effect on the system is settable in menu 4.1.5).

(A = SG Ready A and B = SG Ready B)

Contact for external blocking of heating

In those cases where external blocking of heat is used, it can be connected to terminal block X1, which is positioned behind the front cover.

Heating operation is disconnected by connecting a potential-free switch function to the input selected in menu 5.4, see page 36.

A closed switch results in blocked heating operation.

> **NOTE**
>
> When heat blocking is activated, the min. supply line does not apply.

Switch for external blocking of hot water

In those cases where external blocking of hot water is used, it can be connected to terminal block X1, which is positioned behind the front cover.

Hot water operation is disconnected by connecting a potential-free switch function to the input selected in menu 5.4, see page 36.

A closed switch results in blocked hot water operation.

Switch for external forced control of brine pump

In those cases external forced control of the brine pump is used, this can be connected to terminal block X1, which is positioned behind the front cover.

The brine pump can be force controlled by connecting a potential free switch function to the input selected in menu 5.4, see page 36.

A closed switch means that the brine pump is active.

Contact for activation of "temporary lux"

An external switch function can be connected to F1126 for activation of the hot water function "temporary lux". The switch must be potential-free and connected to the selected input (menu 5.4, see page 36) on terminal block X1.

"temporary lux" is activated for the time that the contact is connected.

Contact for activation of "external adjustment"

An external contact function can be connected to F1126 to change the supply temperature and the room temperature.

When the switch is closed the temperature changes in °C (if the room sensor is connected and activated). If a room sensor is not connected or activated, the desired change of "temperature" (heating curve offset) with the number of steps selected is set. The value is adjustable between -10 and +10.

- *climate system 1*

  The switch must be potential-free and connected to the selected input (menu 5.4, see page 36) on terminal block X1.

  The value for the change is set in menu 1.9.2, "external adjustment".

Connecting accessories

Instructions for connecting accessories are in the installation instructions provided for the respective accessory. See information at www.nibe.eu for the list of the accessories that can be used with F1126.

6 Commissioning and adjusting

Preparations

1. Ensure that F1126 has not been damaged during transport.
2. Check that the switch (SF1) is in position " ⏻".
3. Check for water in any hot water heater and climate system.

Caution

Check the miniature circuit-breaker and the motor protection breakers. They may have tripped during transportation.

NOTE

Do not start F1126 if there is a risk that the water in the system has frozen.

Filling and venting

Caution

Insufficient venting can damage internal components in F1126.

Filling and venting the climate system

Filling

1. Open the venting valve (QM22).
2. When the water that exits the venting valve (QM22) is not mixed with air, close the valve. After a while the pressure starts to rise.
3. Close the filling valve when the correct pressure is obtained.

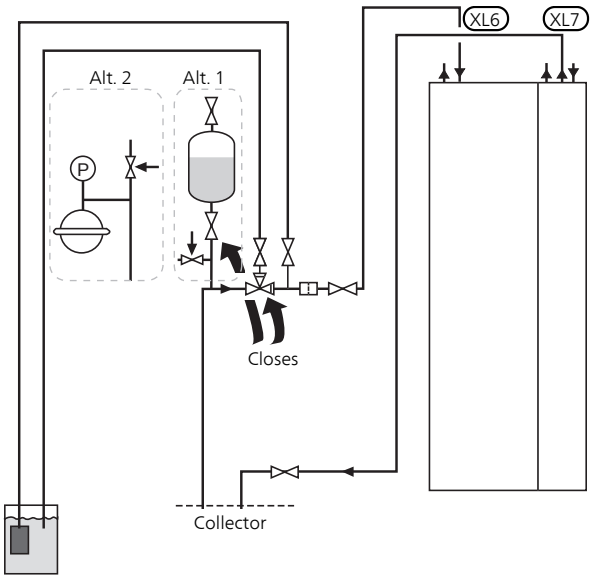
Venting

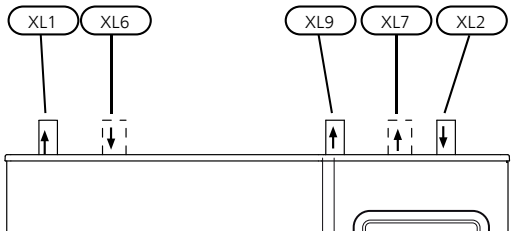
1. Bleed the heat pump via a vent valve (QM22) and the rest of the climate system via their relevant vent valves.
2. Keep topping up and venting until all air has been removed and the pressure is correct.

Filling and venting the brine system

When filling the brine system, mix the water with antifreeze in an open container. The mixture should be protected against freezing down to about -15 °C. The brine is filled by connecting a filling pump.

1. Check the brine system for leakage.
2. Connect the filling pump and return line on the brine system's filling connection (see image).
3. If alternative 1 (level vessel) is used, close the valve under the level vessel (CM2).
4. Close the three way valve in the filler connector (accessory).
5. Open the valves on the filler connector.
6. Start the filling pump.
7. Fill until liquid enters the return pipe.
8. Close the valves on the filler connector.
9. Open the three way valve in the filler connector.
10. If alternative 1 (level vessel) is used, open the valve under the level vessel (CM2).





XL1	Connection, heating medium flow
XL2	Connection, heating medium return
XL6	Connection, brine in
XL7	Connection, brine out
XL9	Connection, hot water heater

Symbol key

Symbol	Meaning
	Shut-off valve
	Safety valve
	Level vessel
	Expansion vessel
Ⓟ	Pressure gauge
	Particle filter

Start guide

NOTE

There must be water in the climate system before the switch is set to "**I**".

1. Set switch (SF1) on F1126 to position "**I**".
2. Follow the instructions in the display's start guide. If the start guide does not start when you start the F1126, start it manually in menu 5.7.

TIP

See page 29 for a more in-depth introduction to the heat pump's control system (operation, menus etc.).

Commissioning

The first time the heat pump is started a start guide is started. The start guide instructions state what needs to carried out at the first start together with a run through of the heat pump's basic settings.

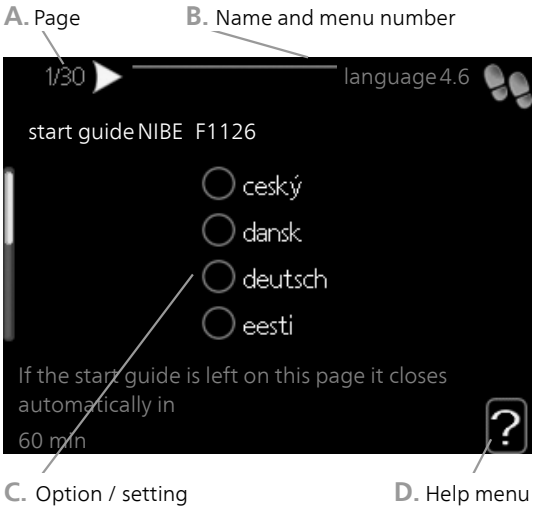
The start guide ensures that start-up is carried out correctly and cannot be bypassed.The start guide can be started later in menu 5.7.

Caution

As long as the start guide is active, no function in the installation will start automatically.

The guide will appear at each installation restart until it is deselected on the last page.

Operation in the start guide



A. Page

Here you can see how far you have come in the start guide.

Scroll between the pages of the start guide as follows:

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

B. Name and menu number

Read what menu in the control system this page of the start guide is based on. The digits in brackets refer to the menu number in the control system.

If you want to read more about affected menus either consult the help menu or read the user manual.

C. Option / setting

Make settings for the system here.

D. Help menu

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

To access the help text:

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

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

Post adjustment and venting

Pump adjustment

Brine side

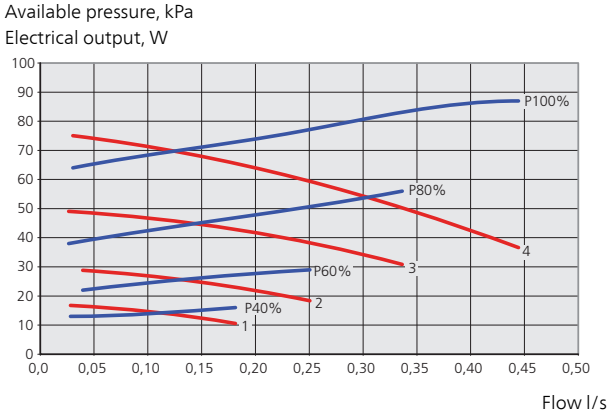
To set the correct flow in the brine system the correct speed must be set for the brine pump.

Adjust the flow so that the temperature difference between brine out (BT11) and brine in (BT10) is between 2 - 5 °C when the system has come into balance (ideally five minutes after compressor start). Check these temperatures in menu 3.1 "service info" and adjust the brine pump (GP2) speed until the temperature difference is obtained. A high difference indicates a low brine flow and a low difference indicates a high brine flow.

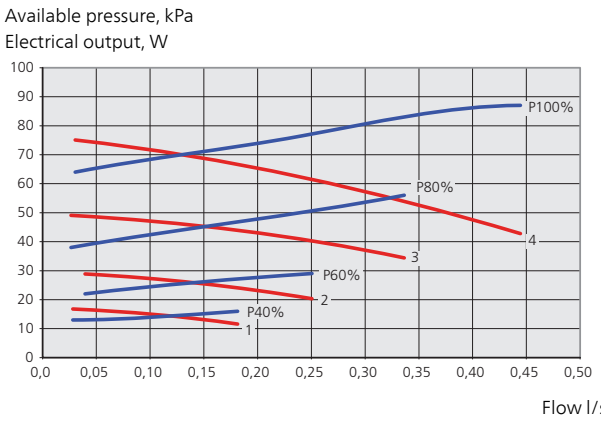
Read off what speed the brine pump should have from the diagrams below.

Available pressure, kPa
P Electrical output, W

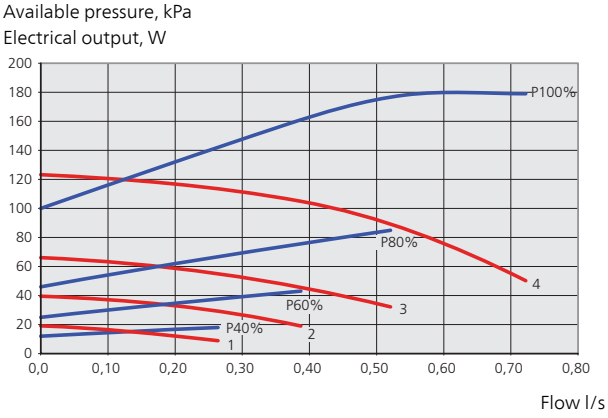
F1126 5 and 6 kW



F1126 8 kW



F1126 12 kW



Heating medium side

To set the correct flow in the climate system the correct speed must be set for the heating medium pump in the different operating conditions.

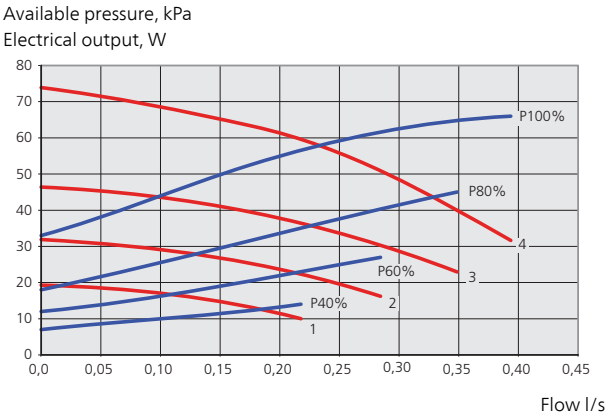
The flow must have a temperature difference suitable for the operating case (heating operation: 5 - 10 °C, hot water generation: 5 - 9 °C) between supply temperature (BT2) and return temperature (BT3). Check these temperatures in menu 3.1 "service info" and adjust the heating medium pump (GP1) speed until the temperature difference is attained. A high difference indicates a low heating medium supply and a low difference indicates a high heating medium supply.

Set the speed of the heating medium pump in the menu 5.1.11, see page 36.

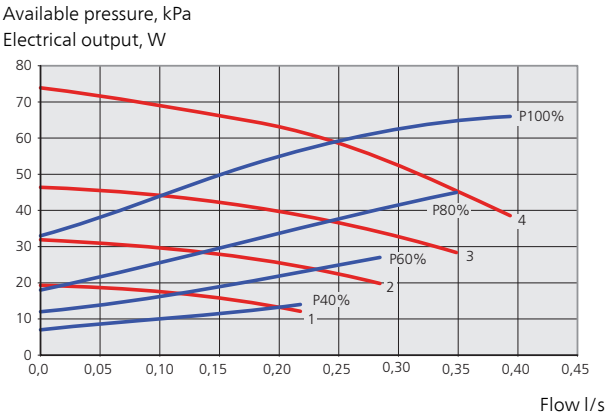
Read off what speed the heating medium pump should be from the diagrams below.

Available pressure, kPa
P Electrical output, W

F1126 5 and 6 kW



F1126 8 and 12 kW

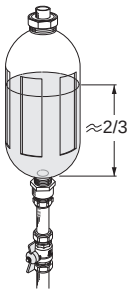


Readjusting, venting, heat medium side

Air is initially released from the hot water and venting may be necessary. If gurgling sounds can be heard from the heat pump or climate system, the entire system will require additional venting.

Readjusting, venting, collector side

Level vessel

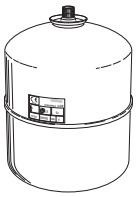


Check the fluid level in the level vessel (CM2). If the fluid level has dropped, top up the system.

1. Close the valve under the vessel.
2. Disconnect the connection on top of the vessel.
3. Fill with brine until approx 2/3 of the vessel is full.
4. Reconnect the connector at the top of the vessel.
5. Open the valve under the vessel.

If the pressure in the system needs to be raised, it is raised by closing the valve on the incoming main line when the brine pump (GP2) is running and the level vessel (CM2) is open, so that liquid is drawn down from the vessel.

Expansion vessel



If a pressure expansion vessel (CM3) is used instead of a level vessel, the pressure level is checked. If the pressure drops, the system should be replenished.

Post adjusting the room temperature

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

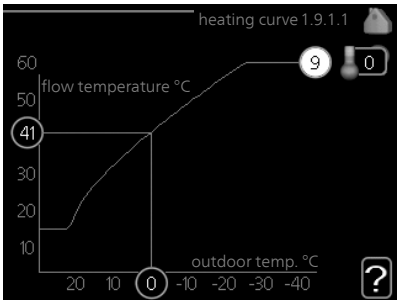
Cold weather conditions

- When the room temperature is too low, increase "heating curve" in menu 1.9.1.1 by one increment.
- When the room temperature is too high, reduce "heating curve" in menu 1.9.1.1 by one increment.

Warm weather conditions

- When the room temperature is too low, increase "temperature" (offset heating curve) in menu 1.1.1 by one increment.
- When the room temperature is too high, reduce "temperature" (offset heating curve) in menu 1.1.1 by one increment.

Setting the cooling/heating curve



heating curve

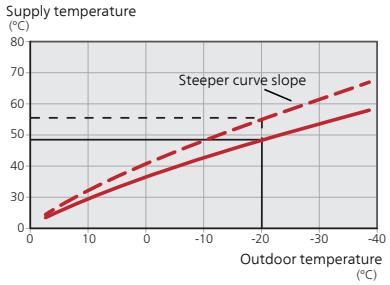
Setting range: 0 – 15

Factory setting: 9

The prescribed heating curve for your house can be viewed in the menu heating curve. The task of the heating curve is to give an even indoor temperature, regardless of the outdoor temperature, and thereby energy efficient operation. It is from this heating curve that the heat pump's control computer determines the temperature of the water to the heating system, supply temperature, and therefore the indoor temperature. Select the heating curve and read off how the supply temperature changes at different outdoor temperatures here.

Curve coefficient

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



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

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

Caution

When making fine adjustments of the indoor temperature, the heating curve must be offset up or down instead, this is done in menu 1.1 temperature.

Curve offset

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

Flow line temperature– maximum and minimum values

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

Caution

Under floor heating systems are normally max flow line temperature set to between 35 and 45 °C.

Check the max temperature for your floor with your installer/floor supplier.

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

Curve 0 is an own curve created in menu 1.9.7.

To select another curve (slope):

1. Press the OK button to access the setting mode
2. Select a new curve. The curves are numbered from 0 to 15, the greater the number, the steeper the slope and the greater the supply temperature. Curve 0 means that own curve (menu 1.9.7) is used.
3. Press the OK button to exit the setting.

To read off a curve:

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

TIP

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

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

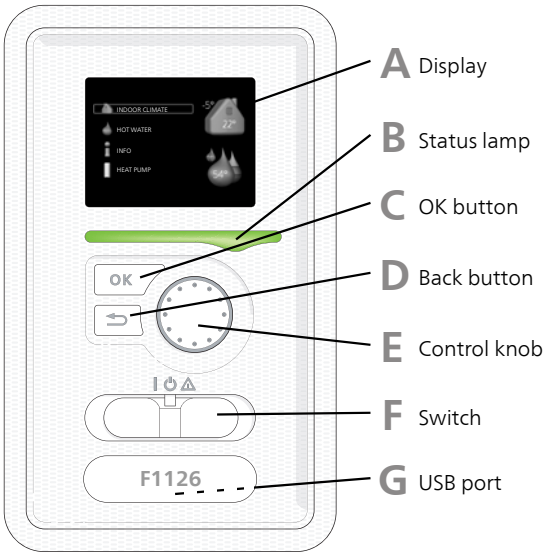
If it is cold outdoors and the room temperature is too high, lower the curve slope by one increment.

If it is warm outdoors and the room temperature is too low, increase the curve offset by one increment.

If it is warm outdoors and the room temperature is too high, lower the curve offset by one increment.

7 Control - Introduction

Display unit



A Display

Instructions, settings and operational information are shown on the display. You can easily navigate between the different menus and options to set the comfort or obtain the information you require.

B Status lamp

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

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

C OK button

The OK button is used to:

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

D Back button

The back button is used to:

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

E Control knob

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

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

F Switch (SF1)

The switch assumes three positions:

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

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

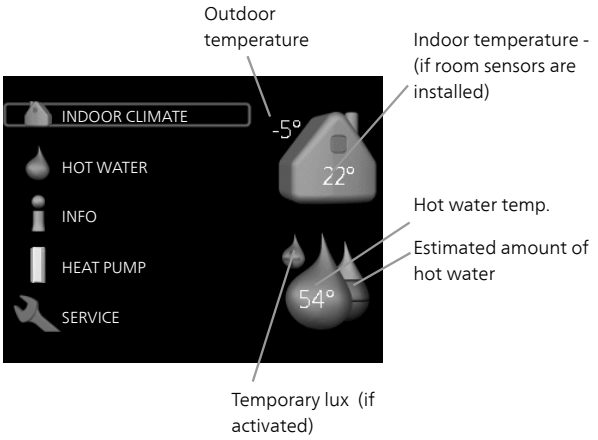
G USB port

The USB port is hidden beneath the plastic badge with the product name on it.

The USB port is used to update the software.

Visit www.nibeuplink.com and click the "Software" tab to download the latest software for your installation.

Menu system



Menu 1 - INDOOR CLIMATE

Setting and scheduling the indoor climate. See information in the help menu or user manual.

Menu 2 - HOT WATER

Setting and scheduling hot water production. See information in the help menu or user manual.

This menu only appears if a water heater is docked to the heat pump.

Menu 3 - INFO

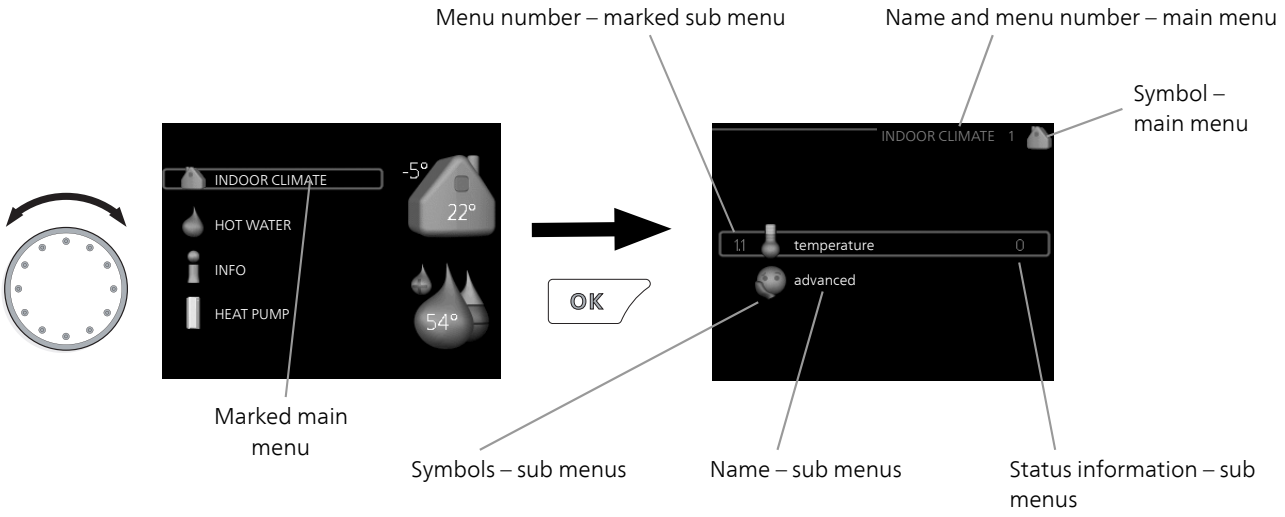
Display of temperature and other operating information and access to the alarm log. See information in the help menu or user manual.

Menu 4 - HEAT PUMP

Setting time, date, language, display, operating mode etc. See information in the help menu or user manual.

Menu 5 - SERVICE

Advanced settings. These settings are only intended for installers or service engineers. The menu is visible when the Back button is pressed for 7 seconds, when you are in the start menu. See page 34.



Operation

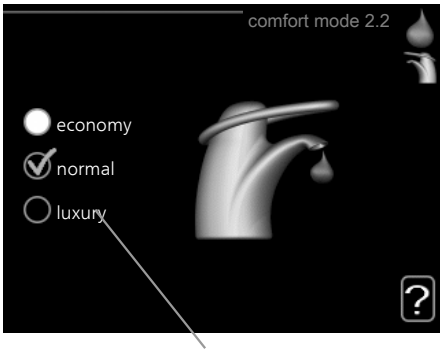
To move the cursor, turn the control knob to the left or the right. The marked position is brighter and/or has a light frame.

Selecting menu

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

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

Selecting options



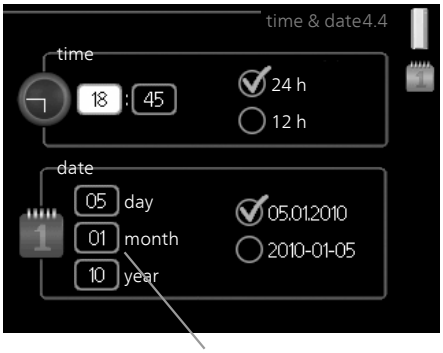
In an options menu the current selected option is indicated by a green tick.

To select another option:

1. Mark the applicable option. One of the options is pre-selected (white).

2. Press the OK button to confirm the selected option. The selected option has a green tick.

Setting a value



To set a value:

1. Mark the value you want to set using the control knob.

2. Press the OK button. The background of the value becomes green, which means that you have accessed the setting mode.

3. Turn the control knob to the right to increase the value and to the left to reduce the value.

4. Press the OK button to confirm the value you have set. To change and return to the original value, press the Back button.

Scroll through the windows

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

Current menu window

Number of windows in the menu

Scroll through the windows in the start guide

Arrows to scroll through window in start guide

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

Help menu

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

To access the help text:

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

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

8 Control - Menus

Menu 1 - INDOOR CLIMATE

1 - INDOOR CLIMATE	1.1 - temperature		
	1.9 - advanced	1.9.1 - curve	1.9.1.1 - heating curve
		1.9.2 - external adjustment	
		1.9.3 - min. flow line temp.	
		1.9.4 - room sensor settings	
		1.9.7 - own curve	
		1.9.8 - point offset	

Menu 2 - HOT WATER

2 - HOT WATER*	2.1 - temporary lux	
	2.2 - comfort mode	
	2.9 - advanced	2.9.1 - periodic increase

Menu 3 - INFO

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

Menu 4 - HEAT PUMP

4 - HEAT PUMP	4.1 - plus functions *	4.1.5 - SG Ready
	4.2 - op. mode	
	4.4 - time & date	
	4.6 - language	
	4.9 - advanced	4.9.1 - op. prioritisation
		4.9.2 - auto mode setting
		4.9.3 - degree minute setting
		4.9.4 - factory setting user

* Accessory needed.

Menu 5 - SERVICE

Overview

5 - SERVICE	5.1 - operating settings	5.1.1 - hot water settings *
		5.1.2 - max flow line temperature
		5.1.3 - max diff flow line temp.
		5.1.4 - alarm actions
		5.1.7 - br pmp al set.
		5.1.8 - operating mode brine pump
		5.1.9 - brine pump speed
		5.1.10 - op. mod heat med pump
		5.1.11 - pump speed heating medium
		5.1.12 - internal electrical addition
	5.2 - system settings	
	5.4 - soft in/outputs	
	5.5 - factory setting service	
	5.6 - forced control	
	5.7 - start guide	
	5.8 - quick start	
	5.10 - change log	
	5.12 - country	

* Accessory needed.

Go to the main menu and hold the Back button in for 7 seconds to access the Service menu.

Sub-menus

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

operating settings Operating settings for the heat pump.

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

soft in/outputs Setting software controlled inputs on the terminal block (X1).

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

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

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

quick start Quick starting the compressor.

NOTE

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

Menu 5.1 - operating settings

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

Menu 5.1.1 - hot water settings

economy

Setting range start temp. economy: 5 – 55 °C
Factory setting start temp. economy: 42 °C
Setting range stop temp. economy: 5 – 60 °C
Factory setting stop temp. economy: 48 °C

normal

Setting range start temp. normal: 5 – 60 °C
Factory setting start temp. normal: 46 °C
Setting range stop temp. normal: 5 – 65 °C
Factory setting stop temp. normal: 50 °C

luxury

Setting range start temp. lux: 5 – 70 °C
Factory setting start temp. lux: 49 °C
Setting range stop temp. lux: 5 – 70 °C
Factory setting stop temp. lux: 53 °C

stop temp. per. increase

Setting range: 55 – 70 °C
Factory setting: 55 °C

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

Menu 5.1.2 - max flow line temperature

climate system

Setting range: 5-70 °C

Default value: 60 °C

Set the maximum supply temperature for the climate system here.

Caution

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

Check the max floor temperature with your floor supplier.

Menu 5.1.3 - max diff flow line temp.

max diff compressor

Setting range: 1 – 25 °C

Default value: 10 °C

max diff addition

Setting range: 1 – 24 °C

Default value: 7 °C

Here you set the maximum permitted difference between the calculated and actual supply temperature during compressor respectively add. heat mode. Max diff. additional heat can never exceed max diff. compressor

max diff compressor

If the current supply temperature **exceeds** the calculated flow with set value, the degree minute value is set to 0. The compressor in the heat pump stops when there is only a heating demand.

max diff addition

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

Menu 5.1.4 - alarm actions

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

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

Caution

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

Menu 5.1.7 - br pmp al set.

min. brine out

Setting range: -12 – 15 °C

Default value: -8 °C

max brine in

Setting range: 10 – 30 °C

Default value: 30 °C

min. brine out

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

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

max brine in

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

Select “alarm activated" to activate the alarm.

Menu 5.1.8 - operating mode brine pump

op. mode

Setting range: intermittent, continuous, 10 days continuous

Default value: intermittent

Set the operating mode of the brine pump here.

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

continuous: Continuous operation.

10 days continuous: Continuous operation for 10 days. Then the pump shifts to intermittent operation.

TIP

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

Menu 5.1.9 - brine pump speed

Setting range: 0 - 100 %
Default values: 50 %

Set the speed of the brine pump here.

Menu 5.1.10 - op. mod heat med pump

op. mode

Setting range: auto, intermittent ,continuous
Default value: auto

Set the operating mode of the heating medium pump here.

auto: The heating medium pump runs according to the current operating mode for F1126.

intermittent: The heating medium pump starts approx. 20 seconds before and stops at the same time as the compressor.

continuous: Continuous operation.

Menu 5.1.11 - pump speed heating medium

Operating status

Setting range: 1 - 100 %
Default values: 70 %

speed in wait mode

Setting range: 1 - 100 %
Factory setting: 30 %

Set the speed at which the heat pump is to operate in the present operating mode.

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

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

"**speed in wait mode**" is the heat pump speed when neither compressor nor electric additional heat are active.

Menu 5.1.12 - internal electrical addition

max connected el. add.

Setting range: 7 / 9
Default value: 7

set max electrical add.

Setting range: 0 - 9 kW
Factory setting: 6 kW

Here you set the max. electrical output of the internal electrical addition in F1126 and the fuse size for the installation.

Menu 5.4 - soft in/outputs

Here you can select which input on the terminal block (X1) the external contact function (page 22) is to be connected to.

Selectable inputs on terminal block AUX1-2 (X1:3-6).

Menu 5.5 - factory setting service

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

NOTE

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

Menu 5.6 - forced control

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

NOTE

Forced control is only intended to be used for troubleshooting purposes. Using the function in any other way may cause damage to the components in your climate system.

Menu 5.7 - start guide

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

See page 25 for more information about the start guide.

Menu 5.8 - quick start

It is possible to start the compressor from here.

Caution

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

Caution

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

Menu 5.10 - change log

Read off any previous changes to the control system here.

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

NOTE

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

5.12 - country

Select here where the product was installed. This allows access to country specific settings in your product.

Language settings can be made regardless of this selection.

NOTE

This option locks after 24 hours, restart of display or program updating.

9 Service

Service actions

NOTE

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

When replacing components on F1126 only replacement parts from NIBE may be used.

Emergency mode

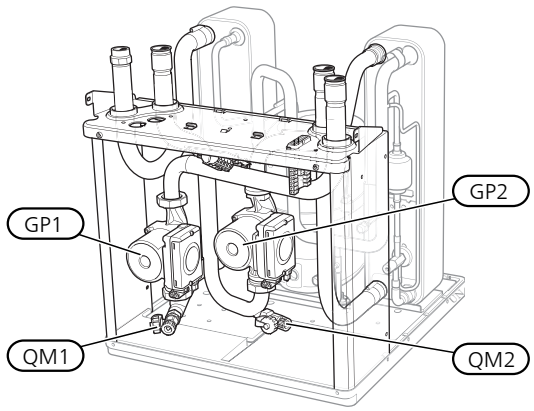
NOTE

The switch (SF1) must not be moved to "I" or "⚠" until F1126 has been filled with water. Component parts in the product can be damaged.

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

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

- The status lamp illuminates yellow.
- The display is not lit and the control computer is not connected.
- The temperature at the immersion heater is controlled by the thermostat (FD1-BT30). It can be set either to 35 or 45 °C.
- The compressor and the brine system are off and only the heating medium pump and the electric additional heat are active. The additional heat power in emergency mode is set in the immersion heater board (AA1). See page 21 for instructions.



Draining the water heater

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

Draining the climate system

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

NOTE

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

Draining the heating medium side in the cooling module

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

1. Close the shut-off valves to heating medium side (QM31) and (QM32).
2. Connect a hose to the bleed valve (QM1) and open the valve. Some liquid will run out.
3. Air must get into the system for the remaining liquid to run out. To let in air, slacken off the connection slightly at the shut-off valve (QM32) that joins the heat pump with the cooling module.

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

Draining the heating medium system in the heat pump

If F1126 requires servicing, drain the heating medium side as follows:

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

When the heating medium side is empty, the required service can be carried out.

Draining the entire climate system

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

1. Connect a hose to the bleed valve (QM1) and open the valve. Some liquid will run out.
2. Air must get into the system for the remaining liquid to run out. To allow air in, unscrew the bleed screw on the highest radiator in the house.

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

Emptying the brine system

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

Draining the brine system in the cooling module

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

1. Close the shut-off valves to brine system (QM33) and (QM34).
2. Connect a hose to the drain valve (QM2), place the other opening of the hose in a container and open the valve. A small amount of brine will flow into the container.
3. Air must get into the system in order for the remaining brine to run out. To let in air, slacken off the connection slightly at the shut-off valve (QM33) that joins the heat pump with the cooling module.

When the brine system is empty, the required service can be carried out.

Draining the brine system in the heat pump

If the heat pump requires servicing, drain the brine system by:

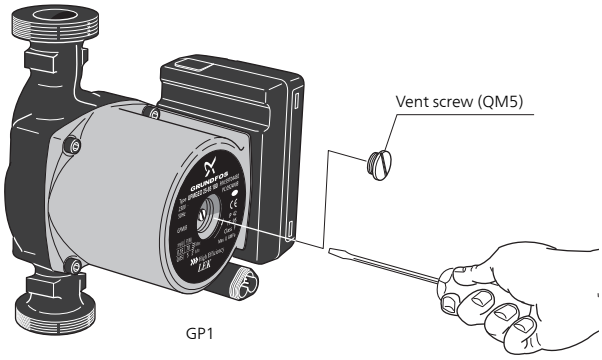
1. Close the shut-off valve outside the heat pump for the brine system.
2. Connect a hose to the drain valve (QM2), place the other opening of the hose in a container and open the valve. A small amount of brine will flow into the container.
3. Air must get into the system for the remaining brine to run out. To let in air, slacken off the connection slightly at the shut-off valve that joins the brine side with the heat pump at connection (XL7).

When the brine system is empty, the required service can be carried out.

Helping the circulation pump to start

1. Shut off, F1126 by setting the switch ((SF1)) to "⏻".
2. Remove the front cover
3. Remove the cover for the cooling module.
4. Loosen the venting screw (QM5) with a screwdriver. Hold a cloth around the screwdriver blade as a small amount of water may run out.
5. Insert a screwdriver and turn the pump motor around.
6. Screw in the venting screw (QM5).
7. Start F1126 by setting the switch (SF1) to "I" and check whether the circulation pump works.

It is usually easier to start the circulation pump with F1126 running, switch (SF1) set to "I". If the circulation pump is helped to start while F1126 is running, be prepared for the screwdriver to jerk when the pump starts.



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

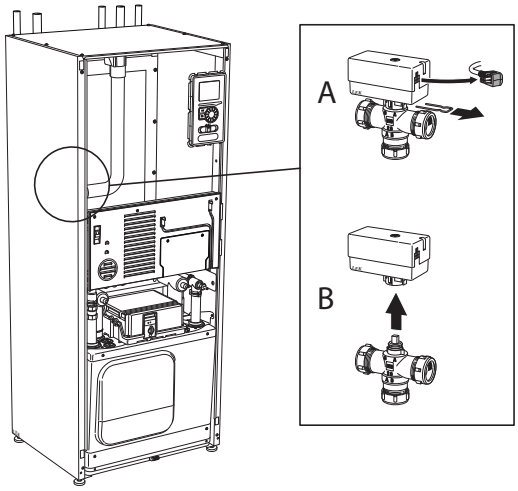
Temperature sensor data

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

Remove the motor on the shuttle valve

The motor on the shuttle valve can be removed to facilitate servicing.

- Disconnect the cable from the motor and remove the motor from the shuttle valve as illustrated.



Pulling out the cooling module

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

Weight of the cooling module

Type	Weight (kg)
F1126-5	108
F1126-6	112
F1126-8	120
F1126-12	130

NOTE

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

Caution

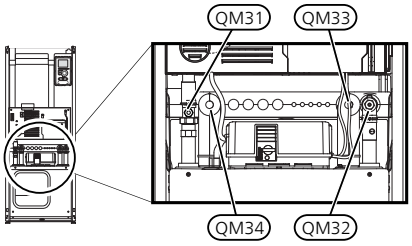
The cooling module is easy to remove if it is drained first (see page 38).

Caution

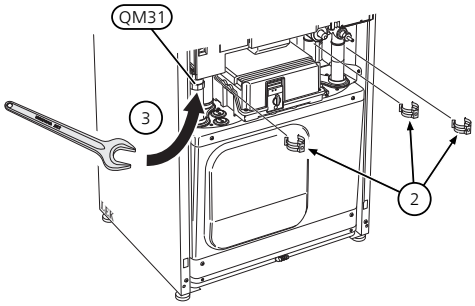
Remove the front cover according to the description on page 7.

1. Close the shut-off valves (QM31), (QM32), (QM33) and (QM34).

   Drain the compressor module according to the instructions on page 38

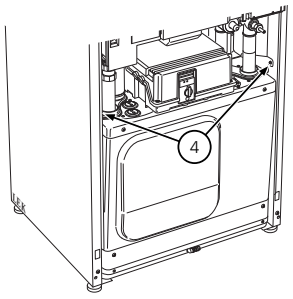


2. Pull off the lock catches.

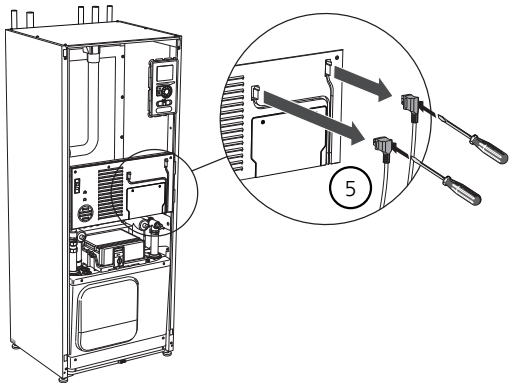


3. Disconnect the pipe connection at the shut-off valve (QM31).

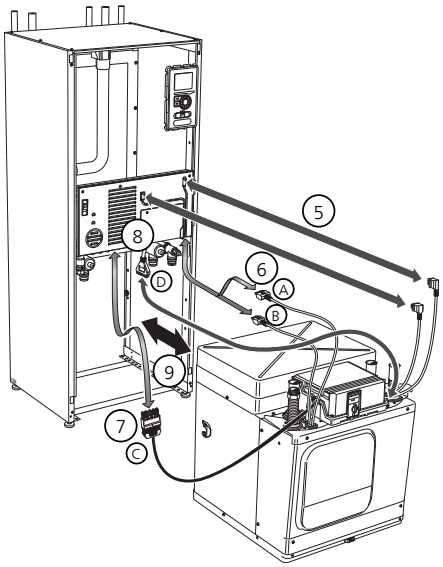
4. Remove the two screws.



5. Remove the connections from the base card (AA2) using a screwdriver.



6. Disconnect the connectors (A) and (B) from the underside of the base card cabinet.
7. Disconnect the connector (C) from the immersion heater circuit board (AA1) using a screwdriver.
8. Disconnect the connector (D) from the joint circuit board (AA100).
9. Carefully pull out the cooling module.

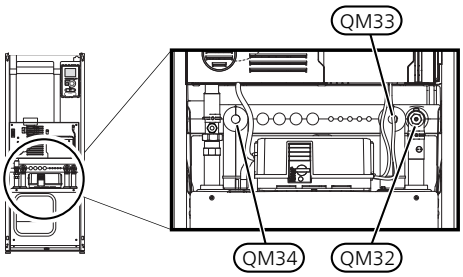


TIP

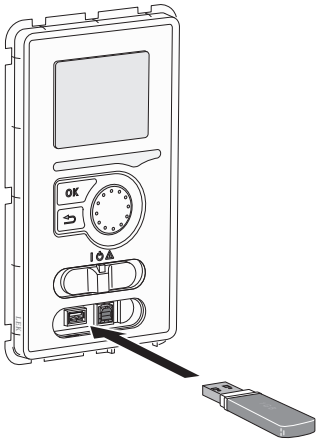
The cooling module is installed in reverse order.

NOTE

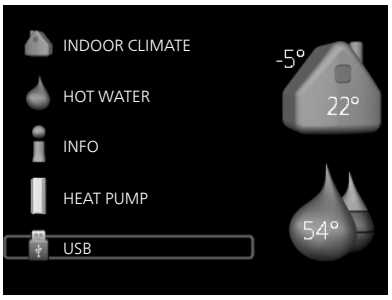
At reinstallation, the supplied O-rings must replace the existing ones at the connections to the heat pump (see image).



USB service outlet

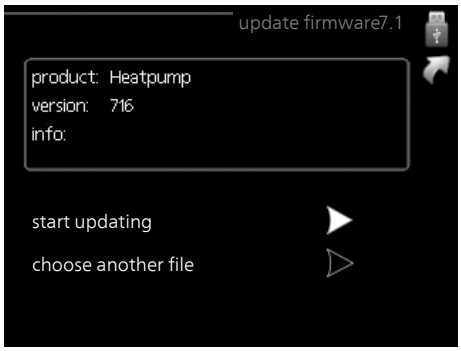


The display unit is equipped with a USB socket that can be used to update the software, save logged information and manage the settings in F1126.



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

Menu 7.1 - update firmware



This allows you to update the software in F1126.

> **NOTE**
>
> For the following functions to work the USB memory must contain files with software for F1126 from NIBE.

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

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

start updating

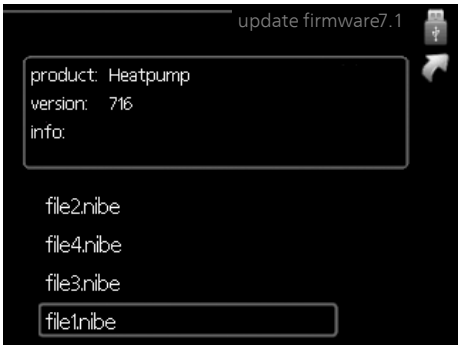
Select “start updating" if you want to start the update. You are asked whether you really want to update the software. Respond "yes" to continue or "no" to undo.

If you responded"yes" to the previous question the update starts and you can now follow the progress of the update on the display. When the update is complete F1126 restarts.

> **NOTE**
>
> A software update does not reset the menu settings in F1126.

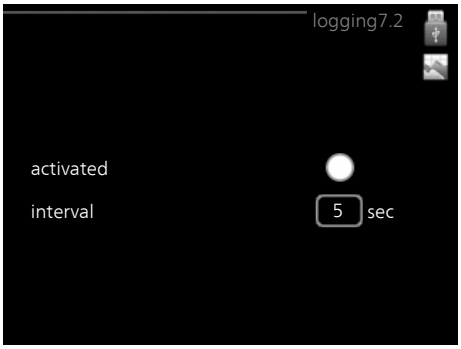
> **NOTE**
>
> If the update is interrupted before it is complete (for example power cut etc.), the software can be reset to the previous version if the OK button is held in during start up until the green lamp starts to illuminate (takes about 10 seconds).

choose another file



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

Menu 7.2 - logging



Setting range: 1 s – 60 min

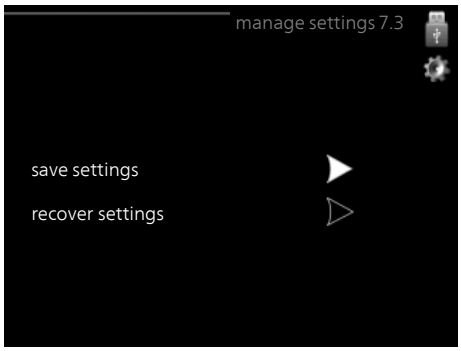
Factory setting range: 5 s

Here you can choose how current measurement values from F1126 should be saved onto a log file on the USB memory.

1. Set the desired interval between loggings.
2. Tick “activated".
3. The present values from F1126 are saved in a file in the USB memory at the set interval until “activated" is unticked.

> **NOTE**
>
> Untick "activated" before removing the USB memory.

Menu 7.3 - manage settings



Here you can manage (save as or retrieve from) all the menu settings (user and service menus) in F1126 with a USB memory.

Via "save settings" you save the menu settings to the USB memory in order to restore them later or to copy the settings to another F1126.

NOTE

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

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

NOTE

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

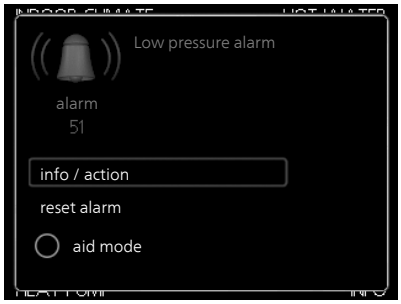
10 Disturbances in comfort

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

Info-menu

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

Manage alarm



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

Alarm

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

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

reset alarm In most cases it is enough to select "reset alarm" to correct the problem that caused the alarm. If a green light illuminates after selecting "reset alarm" the alarm has been remedied. If a red light is still visible and a menu called "alarm" is visible in the display, the problem that caused the alarm remains. If the alarm disappears and then returns, see the troubleshooting section (page 44).

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

NOTE

To select aid mode an alarm action must be selected in the menu 5.1.4.

Caution

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

Troubleshooting

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

Basic actions

Start by checking the following items:

- The switch's (SF1) position.
- Group and main fuses of the accommodation.
- The property's earth circuit breaker.
- The heat pump's miniature circuit breaker (FA1).
- The heat pump's temperature limiter (FD1).

Low hot water temperature or no hot water

This part of the fault-tracing chapter only applies if the heat pump is docked to the hot water heater.

- Closed or choked filling valve
  - Open the valve.
- Heat pump in incorrect operating mode.
  - If mode "manual" is selected, select "addition".
- Large hot water consumption.
  - Wait until the hot water has heated up. Temporarily increased hot water capacity (temporary lux) can be activated in menu 2.1.
- Too low hot water setting.
  - Enter menu 2.2 and select a higher comfort mode.
- Too low or no operating prioritisation of hot water.
  - Enter menu 4.9.1 and increase the time for when hot water is to be prioritised.

Low room temperature

- Closed thermostats in several rooms.
  - Set the thermostats to max, in as many rooms as possible. Adjust the room temperature via menu 1.1, instead of choking the thermostats.
- Heat pump in incorrect operating mode.
  - Enter menu 4.2. If mode "auto" is selected, select a higher value on "stop heating" in menu 4.9.2.
  - If mode "manual" is selected, select "heating". If this is not enough, select "addition".
- Too low set value on the automatic heating control.
  - Enter menu 1.1 "temperature" and adjust the offset heating curve up. If the room temperature is only low in cold weather the curve slope in menu 1.9.1 "heating curve" needs adjusting up.
- Too low or no operating prioritisation of heat.
  - Enter menu 4.9.1 and increase the time for when heating is to be prioritised.

- External switch for changing the room heating activated.
  - Check any external switches.
- Air in the climate system.
  - Vent the climate system (see page 24).
- Closed valves (QM20), (QM32) to the climate system.

  (QM40), (QM41) to the climate system.
  - Open the valves.

High room temperature

- Too high set value on the automatic heating control.
  - Enter menu 1.1 (temperature) and reduce the offset heating curve. If the room temperature is only high in cold weather the curve slope in menu 1.9.1 "heating curve" needs adjusting down.
- External switch for changing the room heating activated.
  - Check any external switches.

Low system pressure

- Not enough water in the climate system.
  - Top up the water in the climate system (see page 24).

The compressor does not start

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

11 Accessories

Not all accessories are available on all markets.

Auxiliary relay HR 10

Auxiliary relay HR 10 is used to control external 1 to 3 phase loads such as oil burners, immersion heaters and pumps.

Part no 067 309

Base extension EF 45

This accessory is used to create a larger connection area under F1126.

Part no. 067 152

Buffer vessel UKV

UKV 100	*UKV 200*
Part no. 088 207	Part no. 080 300

Exhaust air module FLM

FLM is an exhaust air module designed to combine recovery of mechanical exhaust air with ground-source heating.

FLM	*Bracket pack FLM*
Part no. 067 011	Part no. 067 083

Extra relay card EXC 40

Extra relay board required if ground water pump and/or hot water circulation pump is to be connected to F1126.

The extra relay card is installed inside the heat pump.

Part no. 067 072

Filling valve kit KB 25

Valve kit for filling brine in the collector hose. Includes particle filter and insulation.

KB 25 (max. 12 kW)

Part no 089 368

Level monitor NV 10

Level monitor for extended checks of the brine level.

Part no. 089 315

Load monitor EBV 200

EBV 200 is a two-stage electronic load monitor used to disconnect output that exceeds the output set on the load monitor.

Part no. 418 346

Room sensorRTS 40

This accessory is used to obtain a more even indoor temperature.

Part no. 067 065

Water heater/Accumulator tank

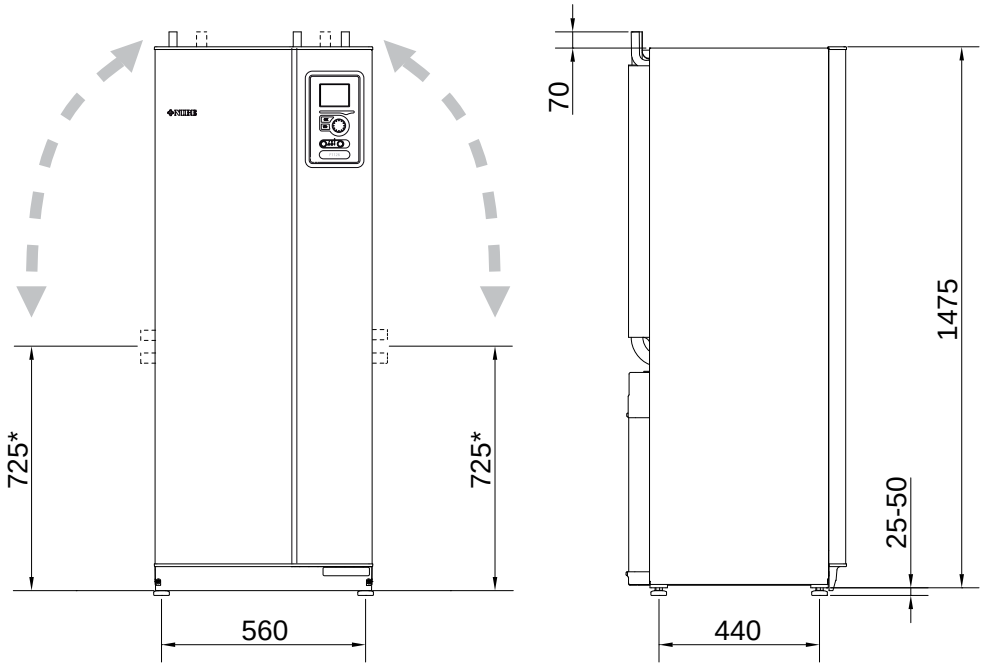
VPB

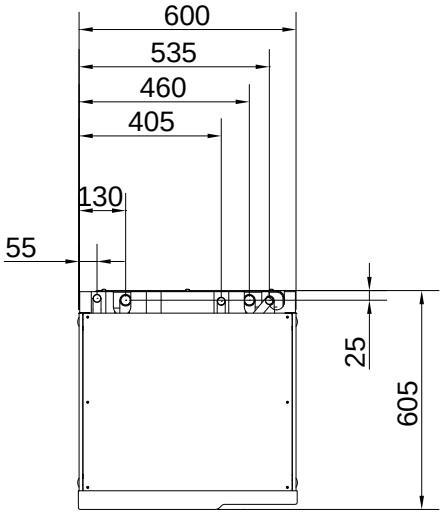
Water heater without immersion heater with charging coil.

VPB 200		**VPB 300**	
Copper	Part no. 088 515	Copper	Part no. 083 009

12 Technical data

Dimensions and setting-out coordinates





* This dimension applies at 90° angle on the brine pipes (side connection). The dimension can vary approx. ±100 mm in height as the brine pipes partially consist of flexible pipes.

Technical specifications

CE IP 21

3x400 V

Model		F1126-5	F1126-6	F1126-8	F1126-12
Output data according to EN 14511					
0/35					
Rated output (P_H)	kW	4.41	5.49	7.37	11.52
Supplied power (P_E)	kW	1.08	1.31	1.65	2.68
COP	-	4.09	4.17	4.46	4.30
0/45					
Rated output (P_H)	kW	3.69	4.62	6.43	10.88
Supplied power (P_E)	kW	1.14	1.40	1.83	3.14
COP	-	3.25	3.31	3.51	3.46
Output data according to EN 14825					
Pdesignh	kW	5	7 / 6	9 / 8	13
SCOP cold climate, 35 °C / 55 °C	-	4.3 / 3.3	4.4 / 3.4	4.8 / 3.7	4.6 / 3.6
SCOP average climate, 35 °C / 55 °C	-	4.2 / 3.3	4.3 / 3.3	4.7 / 3.6	4.5 / 3.5
Electrical data					
Rated voltage		400V 3N ~ 50Hz			
Starting current		23	18	23	29
Additional power	kW	1/2/3/4/5/6/7 (switchable to 2/4/6/9)			
Max. operating current compressor, including control system, circulation pumps and 0 kW immersion heater	A_{rms}	9.5 (1-phase)	4.6	6.6	9.0
Max. operating current heat pump including 1 – 6 kW immersion heater (recommended fuse rating)	A_{rms}	18 (20)	13 (16)	15 (16)	18 (20)
Max. operating current heat pump including 7 kW immersion heater, connected upon delivery (recommended fuse rating)	A_{rms}	18 (20)	19 (20)	21 (25)	23 (25)
Max. operating current heat pump including 9 kW immersion heater, requires reconnection (recommended fuse rating)	A_{rms}	24 (25)	19 (20)	22 (25)	24 (25)
Max. permitted impedance in connection point [1)]	ohm	-	-	-	-
Output, Brine pump	W	5 – 87	5 – 87	5 – 87	3 – 180
Output, Heating medium pump	W	4 – 70	4 – 70	4 – 70	4 – 70
Enclosure class		IP 21			
Refrigerant circuit					
Type of refrigerant		R407C			
GWP refrigerant		1,774			
Fill amount	kg	0.9	0.9	1.1	1.2
CO_2 equivalent	ton	1.6	1.6	1.95	2.13
Cut-out value pressure switch HP / LP	MPa	2.9 (29 bar) / 0.15 (1.5 bar)			
Brine circuit					
Min/max system pressure brine	MPa	0.05 (0.5 bar) / 0.3 (3 bar)			
Min flow	l/s	0.18	0.22	0.30	0.43
Nominal flow	l/s	0.22	0.30	0.42	0.64
Max external avail. press at nom flow	kPa	57	49	39	57
Min/Max incoming Brine temp	°C	see diagram			
Min. outgoing brine temp.	°C	-10			

Model		F1126-5	F1126-6	F1126-8	F1126-12
Heating medium circuit					
Min/Max system pressure heating medium	MPa	0.05 (0.5 bar) / 0.45 (4.5 bar)			
Min flow	l/s	0.07	0.09	0.12	0.18
Nominal flow	l/s	0.09	0.13	0.16	0.25
Max external avail. press at nom flow	kPa	54	53	47	57
Min/max HM-temp	°C	see diagram			
Noise					
Sound power level (L_{WA}) according to EN 12102 at 0/35	dB(A)	37	43	44	44
Sound pressure level (L_{PA}) calculated values according to EN ISO 11203 at 0/35 and 1 m range	dB(A)	21.5	28	29	29
Pipe connections					
Brine ext diam. CU pipe		28	28	28	28
Heating medium ext diam. CU pipes		22	22	22	28
Connection, hot water heater ext diam		22	22	22	28

[1]Max. permitted impedance in the mains connection point in accordance with EN 61000-3-11. Start currents can cause short voltage dips that may affect other equipment in unfavourable conditions. If the impedance in the mains connection point is higher than that stated, it is possible that interference will occur. If the impedance in the mains connection point is higher than that stated, check with the power supplier before purchasing the equipment.

Miscellaneous

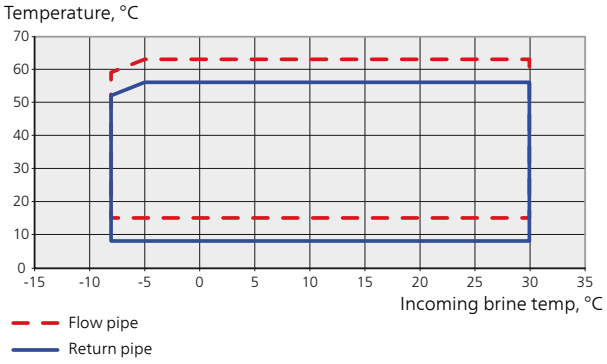
Miscellaneous		F1126-5	F1126-6	F1126-8	F1126-12
Compressor oil					
Oil type		POE			
Volume	l	0.89	1.33	1.33	1.89
Dimensions and weight					
Height (including feet) x width x depth	mm	1,500 x 600 x 620			
Required ceiling height [1]	mm	1,670			
Weight only cooling module	kg	108	112	120	130
Part no., 3x400V		065 234	065 235	065 236	065 237

[1]With feet removed, the height is approx. 1650 mm.

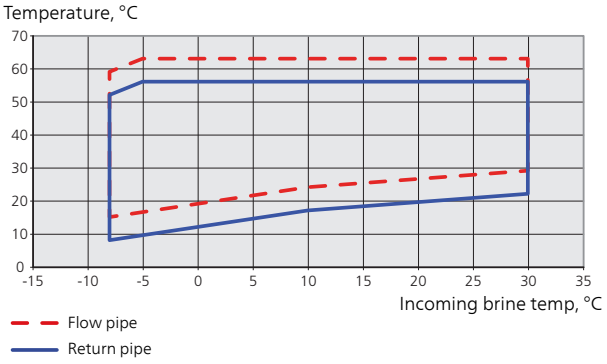
Working range heat pump, compressor operation

The compressor provides a supply temperature up to 63 °C, at 0 °C incoming brine temperature, the remainder (up to 70°C) is obtained using the additional heat.

5-8 kW



12 kW



Energy labelling

Information sheet

Supplier		NIBE AB			
Model		**F1126-5 3X400V**	**F1126-6 3X400V**	**F1126-8 3X400V**	**F1126-12 3X400V**
Model hot water heater		**VPB300**	**VPB300**	**VPB300**	**VPB300**
Temperature application	°C	**35 / 55**	**35 / 55**	**35 / 55**	**35 / 55**
Declared load profile for water heating		**XXL**	**XXL**	**XXL**	**XXL**
Seasonal space heating energy efficiency class, average climate		**A++ / A+**	**A++ / A++**	**A++ / A++**	**A++ / A++**
Water heating energy efficiency class, average climate		**A**	**A**	**A**	**A**
Rated heat output (Pdesignh), average climate	kW	5	7 / 6	9 / 8	13
Annual energy consumption space heating, average climate	kWh	2,426 / 3,141	3,345 / 3,726	3,985 / 4,636	5,986 / 7,628
Annual energy consumption water heating, average climate	kWh	2,299	2,178	2,145	2,280
Seasonal space heating energy efficiency, average climate	%	162 / 124	165 / 125	179 / 135	171 / 133
Water heating energy efficiency, average climate	%	94	99	100	94
Sound power level L_{WA} indoors	dB	43	43	45	45
Rated heat output (Pdesignh), cold climate	kW	5	7 / 6	9 / 8	13
Rated heat output (Pdesignh), warm climate	kW	5	7 / 6	9 / 8	13
Annual energy consumption space heating, cold climate	kWh	2,822 / 3,672	3,887 / 4,322	4,622 / 5,396	6,946 / 8,874
Annual energy consumption water heating, cold climate	kWh	2,299	2,178	2,145	2,280
Annual energy consumption space heating, warm climate	kWh	1,583 / 2,045	2,181 / 2,438	2,593 / 3,041	3,923 / 4,972
Annual energy consumption water heating, warm climate	kWh	2,299	2,178	2,145	2,280
Seasonal space heating energy efficiency, cold climate	%	167 / 126	170 / 129	184 / 138	177 / 136
Water heating energy efficiency, cold climate	%	94	99	100	94
Seasonal space heating energy efficiency, warm climate	%	161 / 123	163 / 124	178 / 133	169 / 132
Water heating energy efficiency, warm climate	%	94	99	100	94
Sound power level L_{WA} outdoors	dB	-	-	-	-

Data for energy efficiency of the package

Model		F1126-5 3X400V	F1126-6 3X400V	F1126-8 3X400V	F1126-12 3X400V
Model hot water heater		**VPB300**	**VPB300**	**VPB300**	**VPB300**
Temperature application	°C	**35 / 55**	**35 / 55**	**35 / 55**	**35 / 55**
Controller, class		III			
Controller, contribution to efficiency	%	1.5			
Seasonal space heating energy efficiency of the package, average climate	%	164 / 125	166 / 127	180 / 136	173 / 134
Seasonal space heating energy efficiency class of the package, average climate		**A++**	**A++**	**A+++ / A++**	**A++**
Seasonal space heating energy efficiency of the package, cold climate	%	168 / 128	171 / 130	185 / 140	178 / 138
Seasonal space heating energy efficiency of the package, warm climate	%	162 / 124	165 / 125	179 / 134	171 / 133

The reported efficiency of the package also takes the controller into account. If an external supplementary boiler or solar heating is added to the package, the overall efficiency of the package should be recalculated.

Technical documentation

Model		F1126-5 3X400V					
Model hot water heater		**VPB300**					
Type of heat pump		☐ Air-water ☐ Exhaust-water ☒ Brine-water ☐ Water-water					
Low-temperature heat pump		☐ Yes ☒ No					
Integrated immersion heater for additional heat		☒ Yes ☐ No					
Heat pump combination heater		☒ Yes ☐ No					
Climate		☒ Average ☐ Cold ☐ Warm					
Temperature application		☒ Average (55 °C) ☐ Low (35 °C)					
Applied standards		EN-14825 & EN-16147					
Rated heat output	Prated	5,0	kW	**Seasonal space heating energy efficiency**	η_s	124	%
Declared capacity for space heating at part load and at outdoor temperature Tj				*Declared coefficient of performance for space heating at part load and at outdoor temperature Tj*			
Tj = -7 °C	Pdh	3.3	kW	Tj = -7 °C	COPd	2.84	-
Tj = +2 °C	Pdh	3.9	kW	Tj = +2 °C	COPd	3.44	-
Tj = +7 °C	Pdh	4.1	kW	Tj = +7 °C	COPd	3.68	-
Tj = +12 °C	Pdh	4.3	kW	Tj = +12 °C	COPd	3.86	-
Tj = biv	Pdh	3.6	kW	Tj = biv	COPd	3.18	-
Tj = TOL	Pdh	3.1	kW	Tj = TOL	COPd	2.59	-
Tj = -15 °C (if TOL < -20 °C)	Pdh		kW	Tj = -15 °C (if TOL < -20 °C)	COPd		-
Bivalent temperature	T_{biv}	-3.0	°C	Min. outdoor air temperature	TOL	-10	°C
Cycling interval capacity	Pcych		kW	Cycling interval efficiency	COPcyc		-
Degradation coefficient	Cdh	0.99	-	Max supply temperature	WTOL	63	°C
Power consumption in modes other than active mode				*Additional heat*			
Off mode	P_{OFF}	0.002	kW	Rated heat output	Psup	1.9	kW
Thermostat-off mode	P_{TO}	0.008	kW				
Standby mode	P_{SB}	0.007	kW	Type of energy input	Electric		
Crankcase heater mode	P_{CK}	0.008	kW				
Other items							
Capacity control	Fixed			Rated airflow (air-water)			m^3/h
Sound power level, indoors/outdoors	L_{WA}	43 / -	dB	Nominal heating medium flow		0.33	m^3/h
Annual energy consumption	Q_{HE}	3,141	kWh	Brine flow brine-water or water-water heat pumps		0.57	m^3/h
For heat pump combination heater							
Declared load profile for water heating	XXL			**Water heating energy efficiency**	η_{wh}	94	%
Daily energy consumption	Q_{elec}	10.47	kWh	Daily fuel consumption	Q_{fuel}		kWh
Annual energy consumption	AEC	2,299	kWh	Annual fuel consumption	AFC		GJ
Contact information	**NIBE Energy Systems – Box 14 – Hannabadsvägen 5 – 285 21 Markaryd – Sweden**						

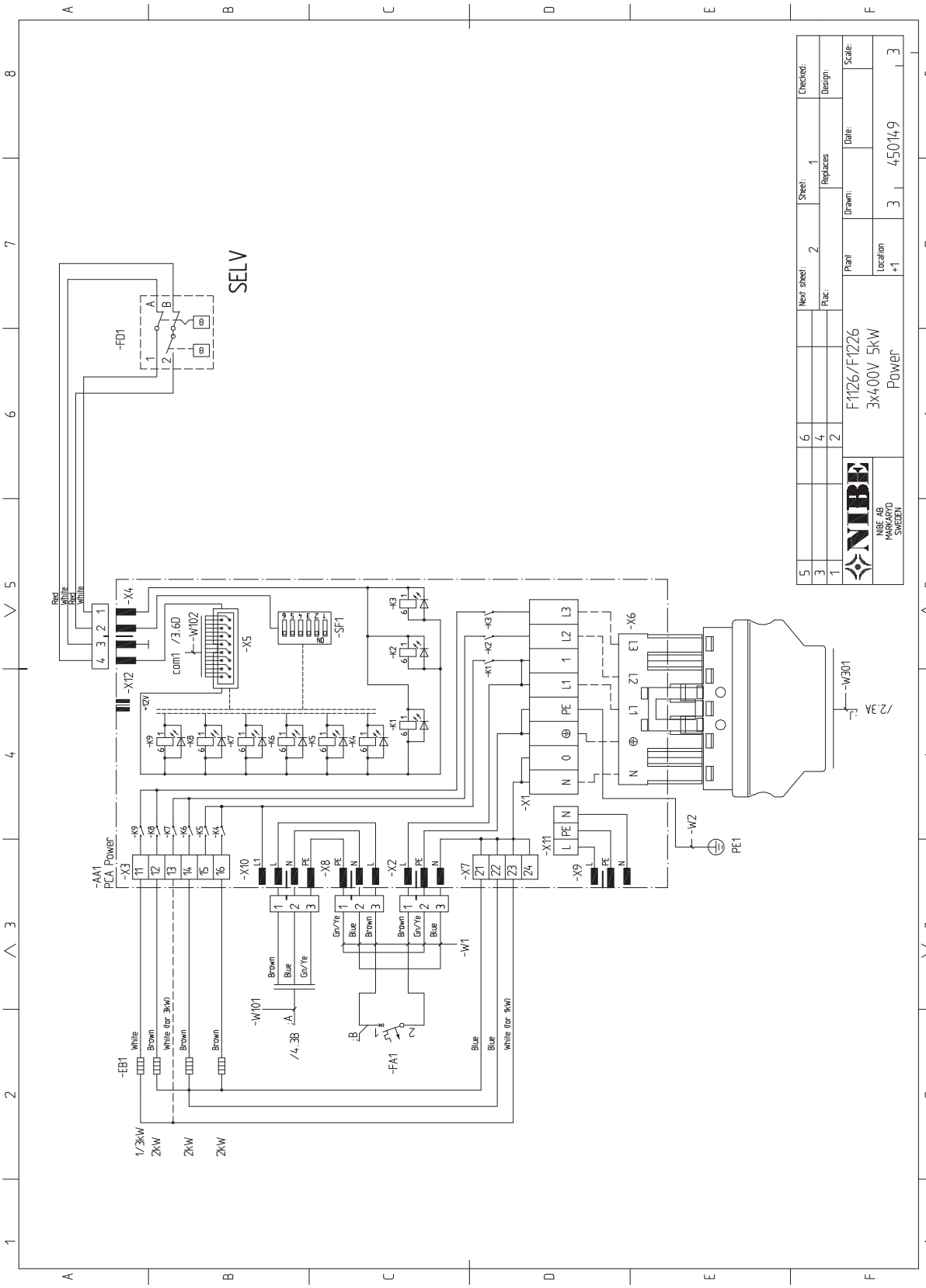
Model		F1126-6 3X400V					
Model hot water heater		**VPB300**					
Type of heat pump		☐ Air-water ☐ Exhaust-water ☒ Brine-water ☐ Water-water					
Low-temperature heat pump		☐ Yes ☒ No					
Integrated immersion heater for additional heat		☒ Yes ☐ No					
Heat pump combination heater		☒ Yes ☐ No					
Climate		☒ Average ☐ Cold ☐ Warm					
Temperature application		☒ Average (55 °C) ☐ Low (35 °C)					
Applied standards		EN-14825 & EN-16147					
Rated heat output	Prated	6,0	kW	**Seasonal space heating energy efficiency**	η_s	125	%
Declared capacity for space heating at part load and at outdoor temperature Tj				*Declared coefficient of performance for space heating at part load and at outdoor temperature Tj*			
Tj = -7 °C	Pdh	4.2	kW	Tj = -7 °C	COPd	2.90	-
Tj = +2 °C	Pdh	4.8	kW	Tj = +2 °C	COPd	3.48	-
Tj = +7 °C	Pdh	5.1	kW	Tj = +7 °C	COPd	3.73	-
Tj = +12 °C	Pdh	5.4	kW	Tj = +12 °C	COPd	3.93	-
Tj = biv	Pdh	4.5	kW	Tj = biv	COPd	3.18	-
Tj = TOL	Pdh	3.9	kW	Tj = TOL	COPd	2.65	-
Tj = -15 °C (if TOL < -20 °C)	Pdh		kW	Tj = -15 °C (if TOL < -20 °C)	COPd		-
Bivalent temperature	T_{biv}	-3.5	°C	Min. outdoor air temperature	TOL	-10	°C
Cycling interval capacity	Pcych		kW	Cycling interval efficiency	COPcyc		-
Degradation coefficient	Cdh	0.99	-	Max supply temperature	WTOL	63	°C
Power consumption in modes other than active mode				*Additional heat*			
Off mode	P_{OFF}	0.002	kW	Rated heat output	Psup	2.1	kW
Thermostat-off mode	P_{TO}	0.010	kW				
Standby mode	P_{SB}	0.007	kW	Type of energy input	Electric		
Crankcase heater mode	P_{CK}	0.014	kW				
Other items							
Capacity control	Fixed			Rated airflow (air-water)			m^3/h
Sound power level, indoors/outdoors	L_{WA}	43 / -	dB	Nominal heating medium flow		0.42	m^3/h
Annual energy consumption	Q_{HE}	3,726	kWh	Brine flow brine-water or water-water heat pumps		0.73	m^3/h
For heat pump combination heater							
Declared load profile for water heating	XXL			**Water heating energy efficiency**	η_{wh}	99	%
Daily energy consumption	Q_{elec}	9.92	kWh	Daily fuel consumption	Q_{fuel}		kWh
Annual energy consumption	AEC	2,178	kWh	Annual fuel consumption	AFC		GJ
Contact information	**NIBE Energy Systems – Box 14 – Hannabadsvägen 5 – 285 21 Markaryd – Sweden**						

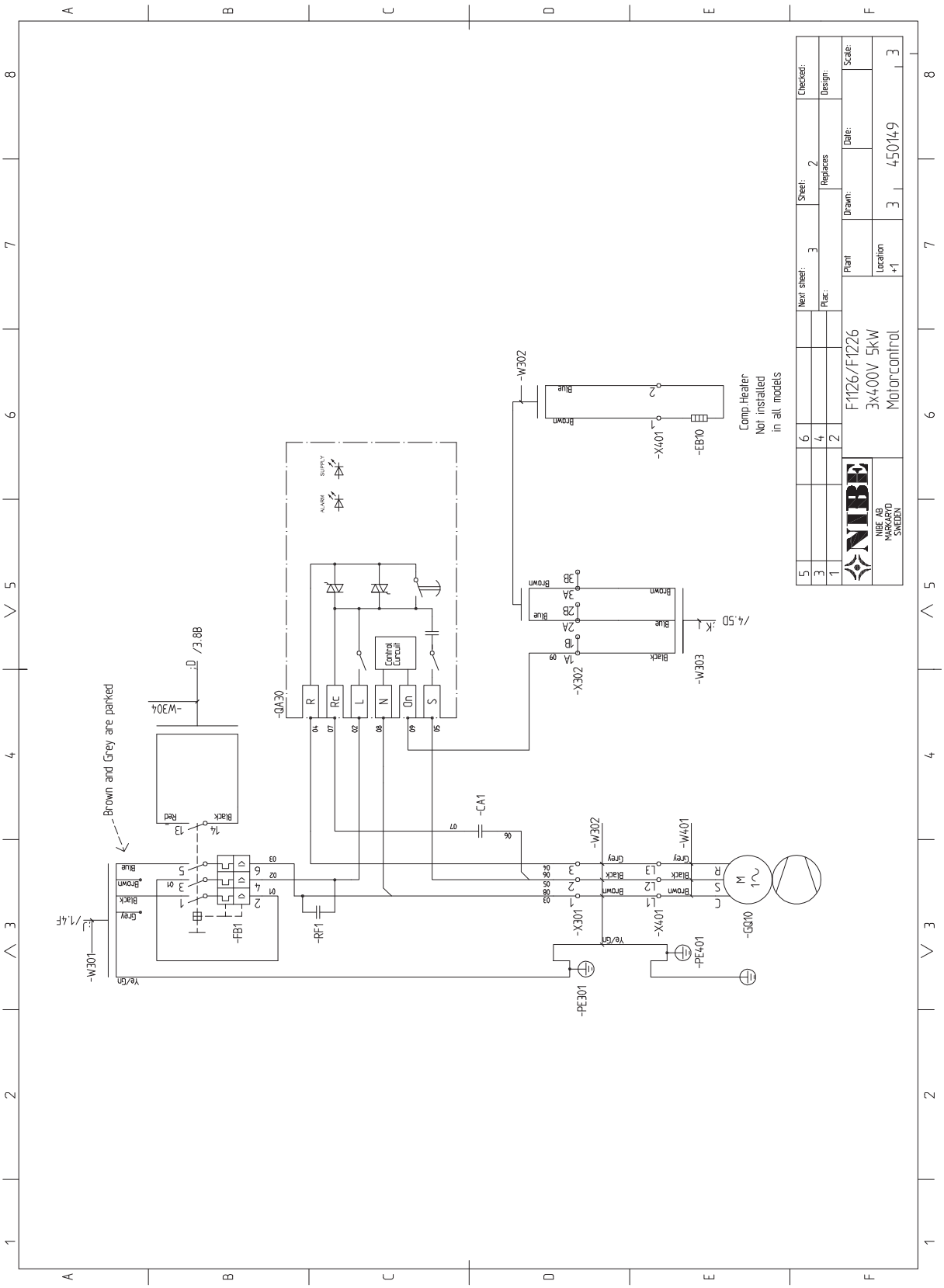
Model		F1126-8 3X400V					
Model hot water heater		**VPB300**					
Type of heat pump		☐ Air-water ☐ Exhaust-water ☒ Brine-water ☐ Water-water					
Low-temperature heat pump		☐ Yes ☒ No					
Integrated immersion heater for additional heat		☒ Yes ☐ No					
Heat pump combination heater		☒ Yes ☐ No					
Climate		☒ Average ☐ Cold ☐ Warm					
Temperature application		☒ Average (55 °C) ☐ Low (35 °C)					
Applied standards		EN-14825 & EN-16147					
Rated heat output	Prated	8,0	kW	**Seasonal space heating energy efficiency**	η_s	135	%
Declared capacity for space heating at part load and at outdoor temperature Tj				*Declared coefficient of performance for space heating at part load and at outdoor temperature Tj*			
Tj = -7 °C	Pdh	5.9	kW	Tj = -7 °C	COPd	3.07	-
Tj = +2 °C	Pdh	6.6	kW	Tj = +2 °C	COPd	3.66	-
Tj = +7 °C	Pdh	7.0	kW	Tj = +7 °C	COPd	3.96	-
Tj = +12 °C	Pdh	7.3	kW	Tj = +12 °C	COPd	4.21	-
Tj = biv	Pdh	6.2	kW	Tj = biv	COPd	3.30	-
Tj = TOL	Pdh	5.6	kW	Tj = TOL	COPd	2.84	-
Tj = -15 °C (if TOL < -20 °C)	Pdh		kW	Tj = -15 °C (if TOL < -20 °C)	COPd		-
Bivalent temperature	T_{biv}	-4.2	°C	Min. outdoor air temperature	TOL	-10	°C
Cycling interval capacity	Pcych		kW	Cycling interval efficiency	COPcyc		-
Degradation coefficient	Cdh	0.99	-	Max supply temperature	WTOL	63	°C
Power consumption in modes other than active mode				*Additional heat*			
Off mode	P_{OFF}	0.002	kW	Rated heat output	Psup	2.4	kW
Thermostat-off mode	P_{TO}	0.012	kW				
Standby mode	P_{SB}	0.007	kW	Type of energy input	Electric		
Crankcase heater mode	P_{CK}	0.014	kW				
Other items							
Capacity control	Fixed			Rated airflow (air-water)			m^3/h
Sound power level, indoors/outdoors	L_{WA}	45 / -	dB	Nominal heating medium flow		0.61	m^3/h
Annual energy consumption	Q_{HE}	4,636	kWh	Brine flow brine-water or water-water heat pumps		1.09	m^3/h
For heat pump combination heater							
Declared load profile for water heating	XXL			**Water heating energy efficiency**	η_{wh}	100	%
Daily energy consumption	Q_{elec}	9.77	kWh	Daily fuel consumption	Q_{fuel}		kWh
Annual energy consumption	AEC	2,145	kWh	Annual fuel consumption	AFC		GJ
Contact information	**NIBE Energy Systems – Box 14 – Hannabadsvägen 5 – 285 21 Markaryd – Sweden**						

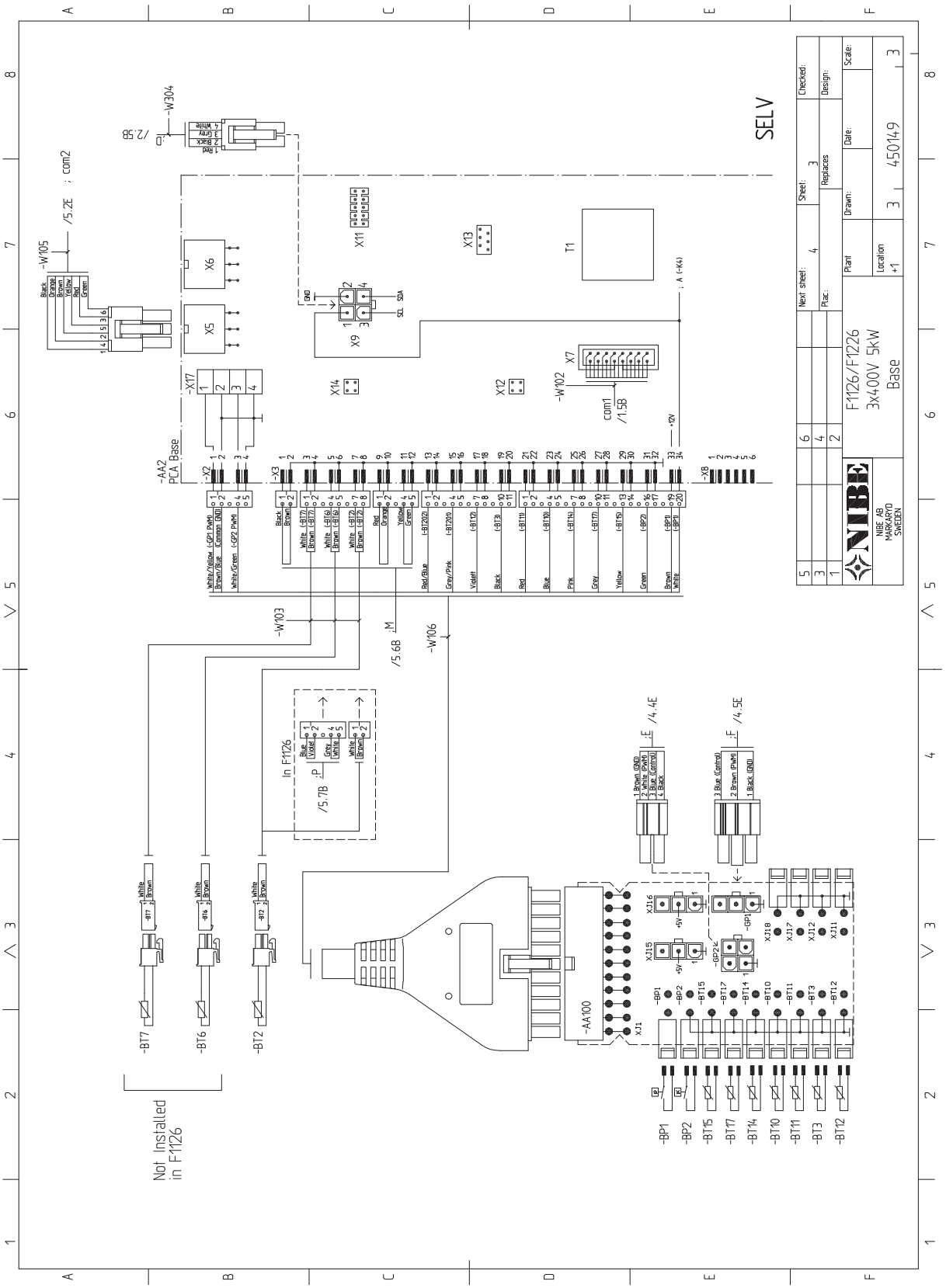
Model		F1126-12 3X400V					
Model hot water heater		**VPB300**					
Type of heat pump		☐ Air-water ☐ Exhaust-water ☒ Brine-water ☐ Water-water					
Low-temperature heat pump		☐ Yes ☒ No					
Integrated immersion heater for additional heat		☒ Yes ☐ No					
Heat pump combination heater		☒ Yes ☐ No					
Climate		☒ Average ☐ Cold ☐ Warm					
Temperature application		☒ Average (55 °C) ☐ Low (35 °C)					
Applied standards		EN-14825 & EN-16147					
Rated heat output	Prated	13,0	kW	**Seasonal space heating energy efficiency**	η_s	133	%
Declared capacity for space heating at part load and at outdoor temperature Tj				*Declared coefficient of performance for space heating at part load and at outdoor temperature Tj*			
Tj = -7 °C	Pdh	10.5	kW	Tj = -7 °C	COPd	3.11	-
Tj = +2 °C	Pdh	11.0	kW	Tj = +2 °C	COPd	3.57	-
Tj = +7 °C	Pdh	11.2	kW	Tj = +7 °C	COPd	3.87	-
Tj = +12 °C	Pdh	11.5	kW	Tj = +12 °C	COPd	4.13	-
Tj = biv	Pdh	10.6	kW	Tj = biv	COPd	3.22	-
Tj = TOL	Pdh	10.3	kW	Tj = TOL	COPd	2.93	-
Tj = -15 °C (if TOL < -20 °C)	Pdh		kW	Tj = -15 °C (if TOL < -20 °C)	COPd		-
Bivalent temperature	T_{biv}	-5.2	°C	Min. outdoor air temperature	TOL	-10	°C
Cycling interval capacity	Pcych		kW	Cycling interval efficiency	COPcyc		-
Degradation coefficient	Cdh	0.99	-	Max supply temperature	WTOL	63	°C
Power consumption in modes other than active mode				*Additional heat*			
Off mode	P_{OFF}	0.002	kW	Rated heat output	Psup	2.7	kW
Thermostat-off mode	P_{TO}	0.018	kW				
Standby mode	P_{SB}	0.007	kW	Type of energy input	Electric		
Crankcase heater mode	P_{CK}	0.030	kW				
Other items							
Capacity control	Fixed			Rated airflow (air-water)			m^3/h
Sound power level, indoors/outdoors	L_{WA}	45 / -	dB	Nominal heating medium flow		1.11	m^3/h
Annual energy consumption	Q_{HE}	7,628	kWh	Brine flow brine-water or water-water heat pumps		2.04	m^3/h
For heat pump combination heater							
Declared load profile for water heating	XXL			**Water heating energy efficiency**	η_{wh}	94	%
Daily energy consumption	Q_{elec}	10.38	kWh	Daily fuel consumption	Q_{fuel}		kWh
Annual energy consumption	AEC	2,280	kWh	Annual fuel consumption	AFC		GJ
Contact information	**NIBE Energy Systems – Box 14 – Hannabadsvägen 5 – 285 21 Markaryd – Sweden**						

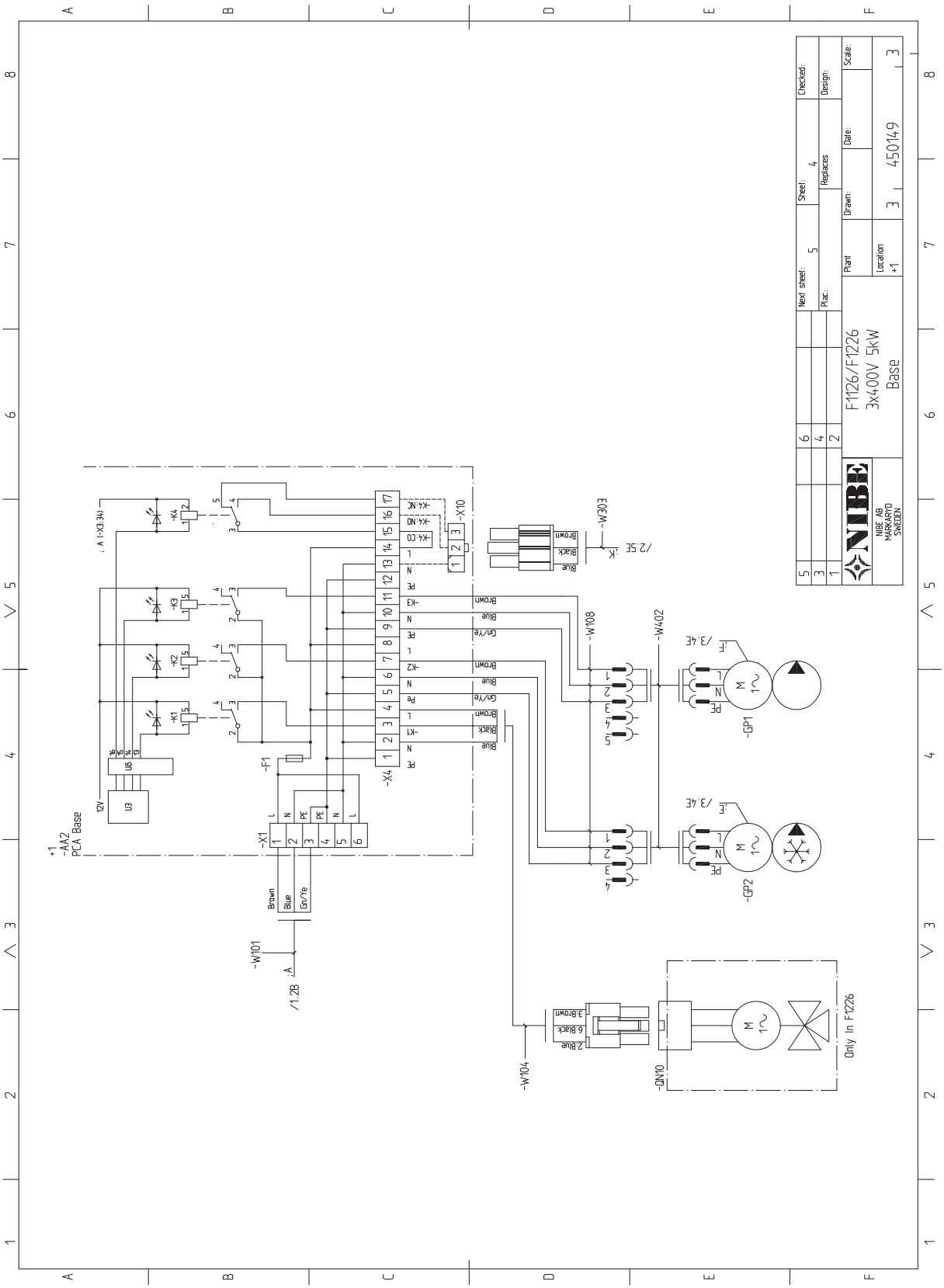
Electrical circuit diagram

3x400V 5 kW




F1126/F1226
3x400V 5kW
Motorcontrol
NIBE AB
MARKARYD
SWEDEN
450149
Comp.Heater
Not installed
in all models
Brown and Grey are parked
-GA30
Control Curcuit
-FB1
-RF1
-CA1
-W301
-W302
-W303
-W304
-W401
-X301
-X302
-X401
-EB10
-GB10
-PE301
-PE401


SELV
F1126/F1226
3x400V 5kW
Base
450149
NIBE AB
MARKARYD
SWEDEN
-AA2
PCA Base
-AA100
-W103
-W106
-W102
-W105
-W304
-BT7
-BT6
-BT12
-BP1
-BP2
-BT15
-BT17
-BT14
-BT10
-BT11
-BT3
-BT12
Not Installed
in F1126
In F1126


NIBE AB
MARKARYD
SWEDEN
F1126/F1226
3x400V 5kW
Base
Next sheet: 5
Plac:
Sheet: 4
Replaces
Plant
Drawn:
Date:
Checked:
Design:
Scale:
Location +1
3
450149
3
-AA2
PCA Base
-X1
-X4
-X10
-F1
-K1
-K2
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-W104
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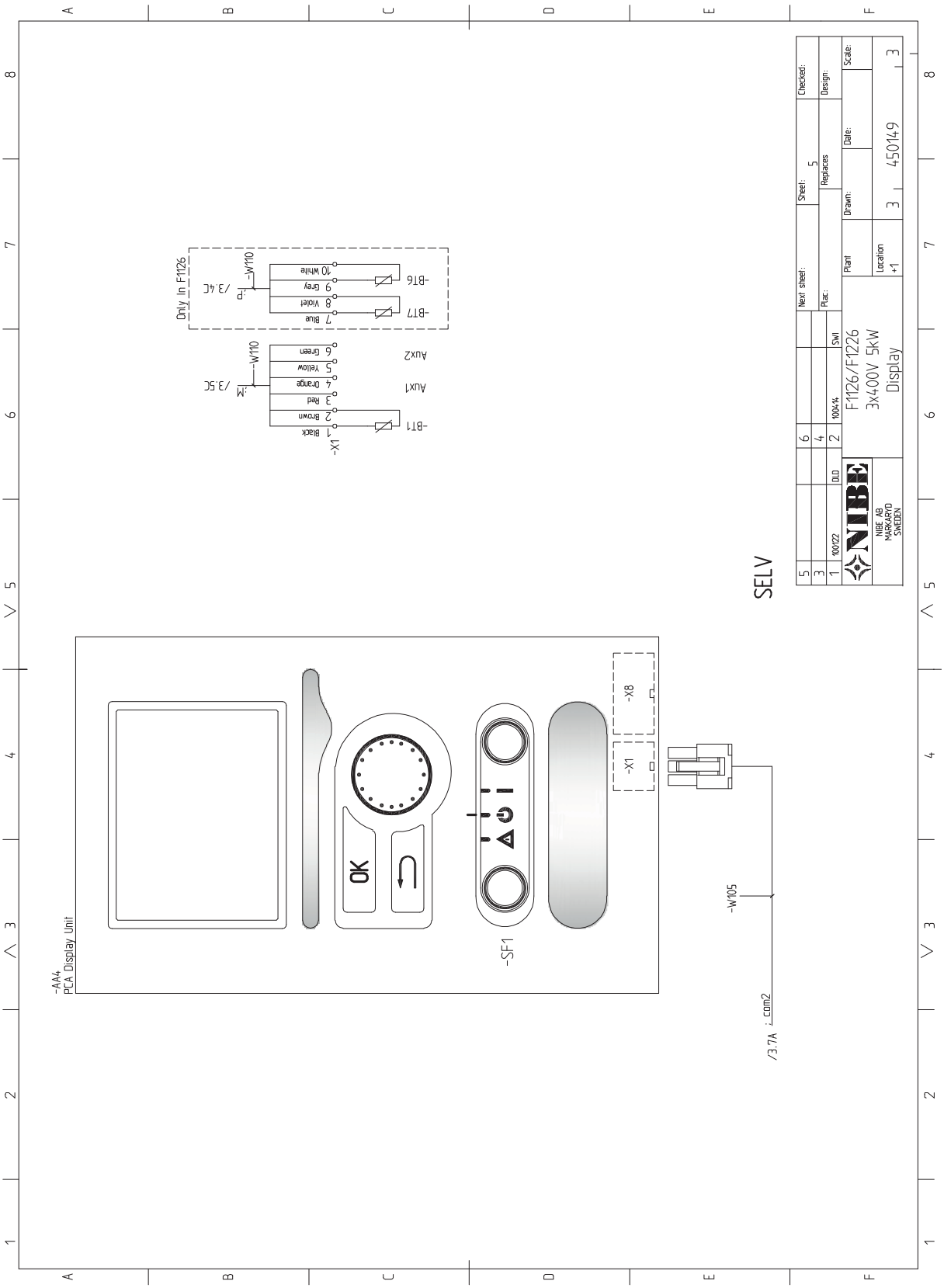
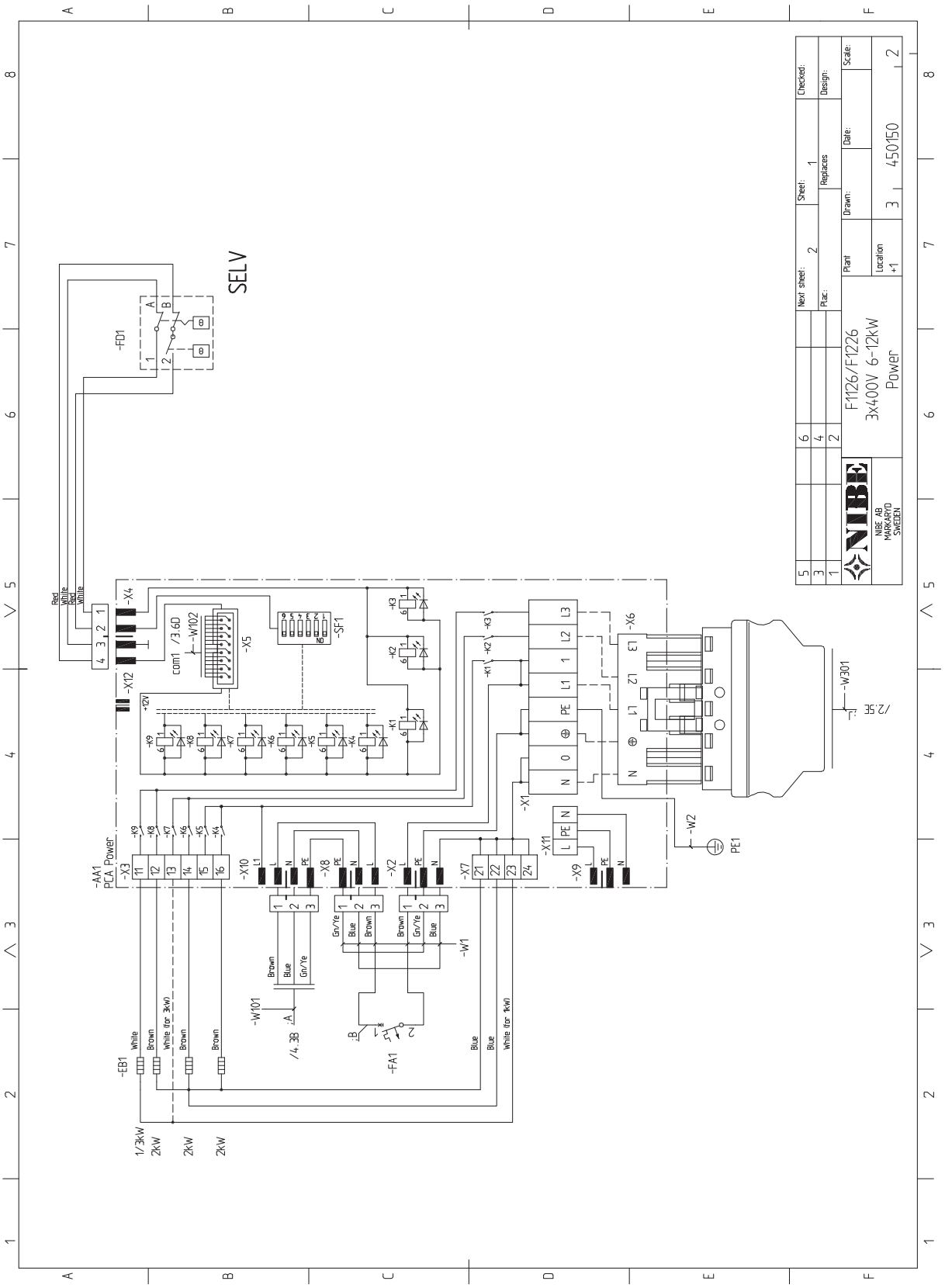
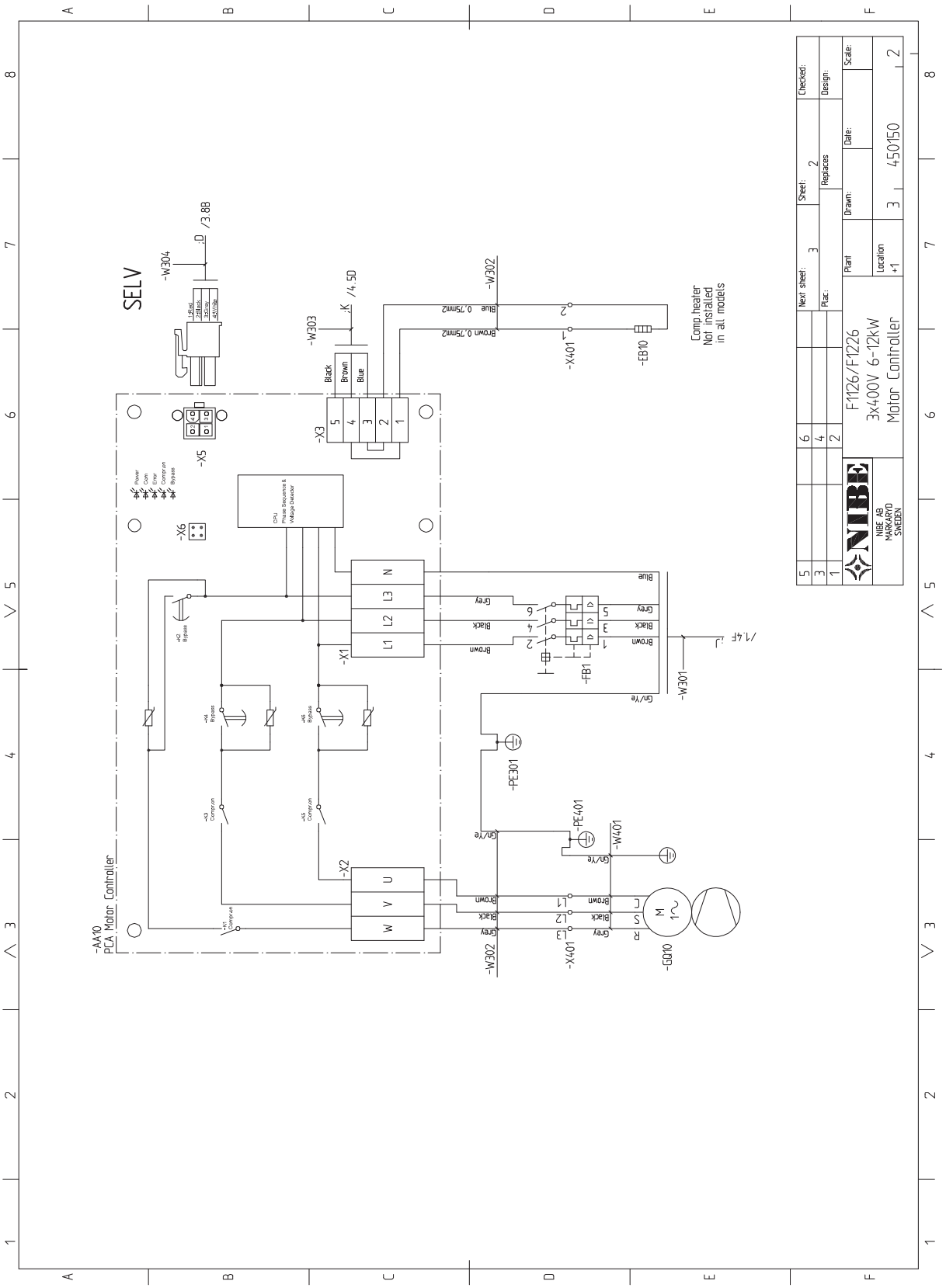
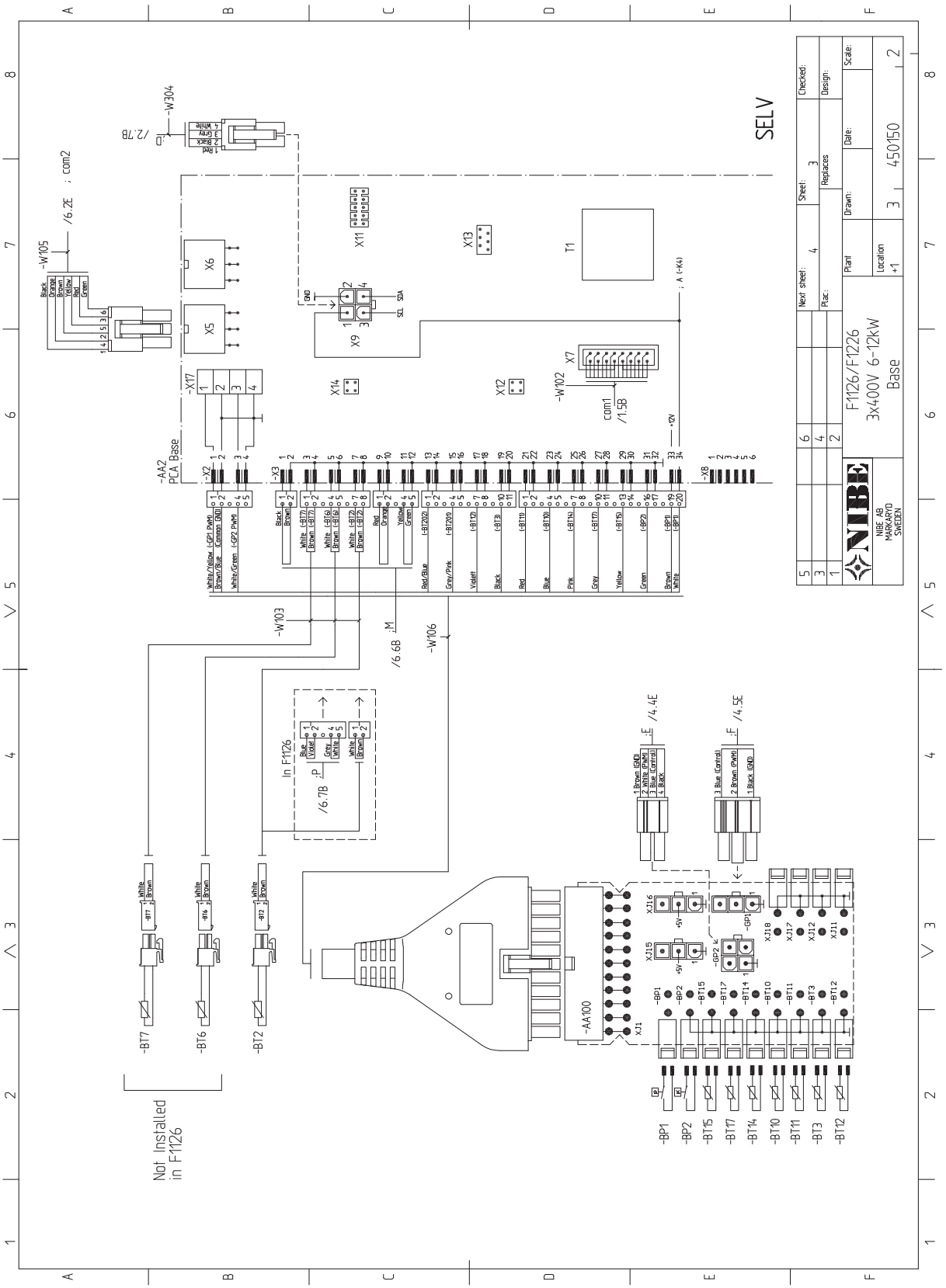
-W303
-W402
-GP1
-GP2
-GN10
Only In F1226

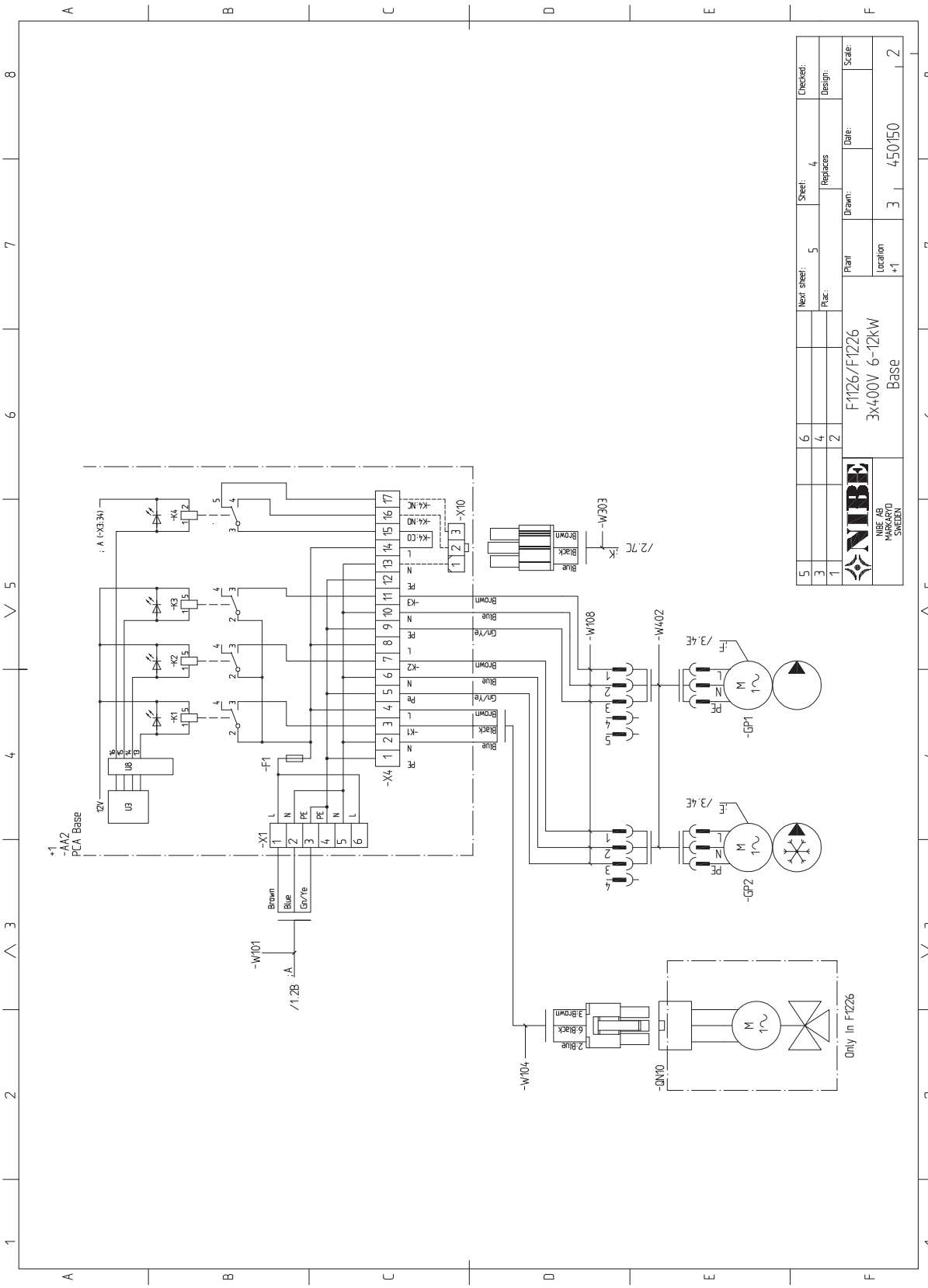

Only In F1126
-BT6
-BT7
-W110
/3.4C
10 White
9 Grey
8 Violet
7 Blue
-BT1
-W110
/3.5C
Aux1
Aux2
-X1
1 Black
2 Brown
3 Red
4 Orange
5 Yellow
6 Green
-AA4
PCA Display Unit
OK
-SF1
-X1
-X8
-W105
/3.7A : com2
SELV
NIBE AB
MARKARYD
SWEDEN
F1126/F1226
3x400V 5kW
Display
Next sheet:
Plac:
Sheet: 5
Replaces
Plant
Drawn:
Date:
Checked:
Design:
Scale:
Location
+1
3
450149
3

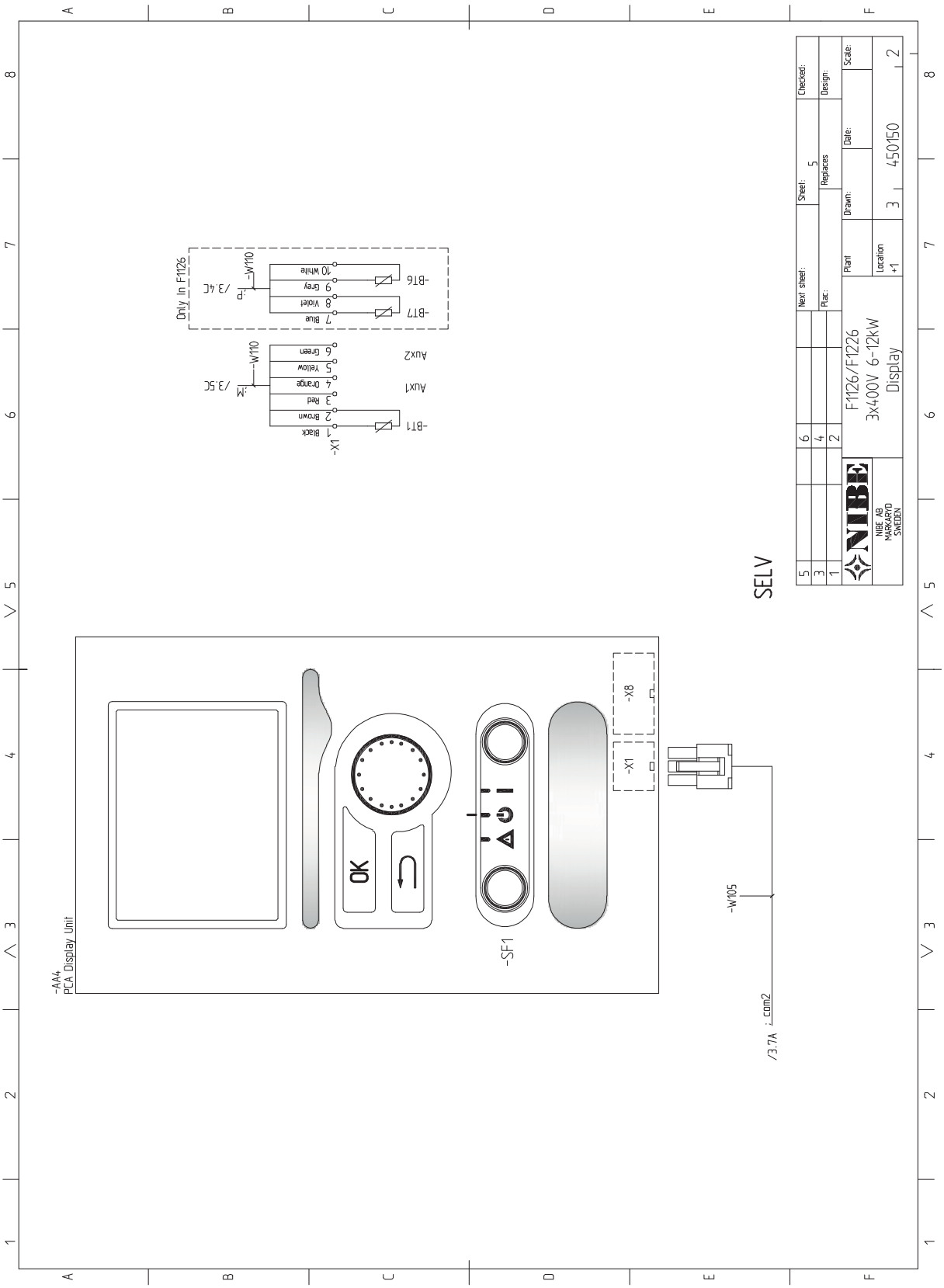
3x400 V 6-12 kW




SELV
-W304
/3.8B
-W303
/4.5D
-W302
Blue 0,75mm2
Brown 0,75mm2
-X401
-EB10
Comp.heater
Not installed
in all models
-X5
-X3
Black
Brown
Blue
-X6
-X1
-X2
-AA10
PCA Motor Controller
-K1 Bypass
-K4 Bypass
-K6 Bypass
-K3 Contactor
-K5 Contactor
-K2 Contactor
-FB1
-W301
-PE301
-PE401
-W401
-GQ10
Grey
Black
Brown
Gn/Ye
Blue
F1126/F1226
3x400V 6-12kW
Motor Controller
NIBE AB
MARKARYD
SWEDEN
Next sheet: 3
Plac:
Sheet: 2
Replaces
Plant
Drawn:
Date:
Checked:
Design:
Scale:
Location
+1
3
450150
2


SELV
F1126/F1226
3x400V 6-12kW
Base
NIBE AB
MARKARYD
SWEDEN
450150
-AA2
PCA Base
-AA100
-W304
-W105
-W103
-W106
-W102
-BT7
-BT6
-BT12
-BP1
-BP2
-BT15
-BT17
-BT14
-BT10
-BT11
-BT3
-BT12
Not Installed
in F1126
In F1126


F1126/F1226
3x400V 6-12kW
Base
NIBE AB
MARKARYD
SWEDEN
Only In F1226


-AA4
PCA Display Unit
OK
-SF1
-X8
-X1
-W105
/3.7A
com2
SELV
Only In F1126
-BT6
-BT7
-W110
/3.4C
Aux2
Aux1
-BT1
-X1
/3.5C
Blue
Violet
Grey
White
Green
Yellow
Orange
Red
Brown
Black
NIBE AB
MARKARYD
SWEDEN
F1126/F1226
3x400V 6-12kW
Display
Next sheet:
Plac:
Sheet: 5
Replaces
Plant
Location
+1
Drawn:
Date:
Checked:
Design:
Scale:
450150

13 Item register

Item register

Contact information

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