Installer manual

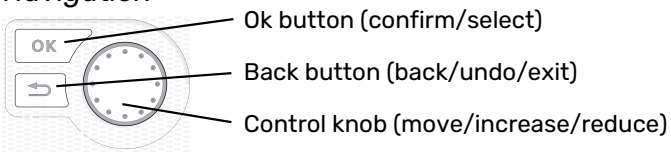
NIBE

Indoor module
NIBE VVM 310 EMK

IHB EN 2627-1
931385

Quick guide

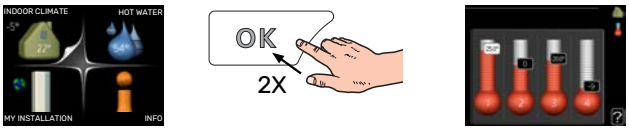
Navigation



A detailed explanation of the button functions can be found on page 32.

How to scroll through menus and make different settings is described on page 34.

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, first turn the control knob to mark menu 2 (water droplet) and then press the OK button twice.

Table of Contents

1 Important information 4
Safety information 4
Symbols 4
Marking 4
Serial number 4
Recovery 5
Inspection of the installation 5
System solutions 5

2 Delivery and handling 6
Transport 6
Assembly 6
Supplied components 6
Removing panels 7

3 Design VVM 310 8
List of components 9

4 Pipe connections 10
General pipe connections 10
Dimensions and pipe connections 12
Connecting to air/water heat pump 13
Use without heat pump 13
Climate system 13
Cold and hot water 14
Installation alternative 14

5 Electrical connections 15
General 15
Connections 17
Settings 18
Optional connections 19
Connecting accessories 24

6 Commissioning and adjusting 25
Preparations 25
Filling and venting 25
Start-up and inspection 26
Setting the heating curve 28
Cooling in 2-pipe system 29
Setting hot water circulation 29
SG Ready 29

7 myUplink 31
Specification 31
Connection 31
Range of services 31
myUplink PRO 31

8 Control - Introduction 32
Display unit 32
Menu system 32
Update the software 35

9 Control – Menus 36
Menu 1 - INDOOR CLIMATE 36
Menu 2 - HOT WATER 37
Menu 3 - INFO 37
Menu 4 - MY SYSTEM 38
Menu 5 - SERVICE 39

10 Service 48
Service actions 48

11 Disturbances in comfort 51
Info-menu 51
Manage alarm 51
Troubleshooting 51
Electrical addition only 52

12 Accessories 53

13 Technical data 54
Dimensions 54
Technical specifications 55
Electrical circuit diagram 56

Item register 61

Contact information 63

Important information

Safety information

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

The manual must be left with the customer.

For the latest version of the product's documentation, see nibe.eu.

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.

This is an original manual. It may not be translated without the approval of NIBE.

Rights to make any design or technical modifications are reserved.

©NIBE 2026.

System pressure	Max	Min
Heating medium	0.3 MPa (3 bar)	0.05 MPa (0.5 bar)
Domestic water	1.0 MPa (10 bar)	0.01 MPa (0.1 bar)

Water may drip from the safety valve's overflow pipe. The overflow pipe must be routed to a suitable drain, to prevent hot water splashes from causing harm. The overflow pipe must be inclined along its entire length to prevent pockets where water can accumulate, and must be frost-proof. The overflow pipe must be at least the same size as the safety valve. The overflow pipe must be visible and its mouth must be open and not placed close to electrical components.

VVM 310 must be installed via an isolator switch. The cable area has to be dimensioned based on the fuse rating used.

Symbols

Explanation of symbols that may be present in this manual.

CAUTION!

This symbol indicates danger to person or machine.

NOTE!

This symbol indicates important information about what you should consider when installing or servicing the installation.

TIP!

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

Marking

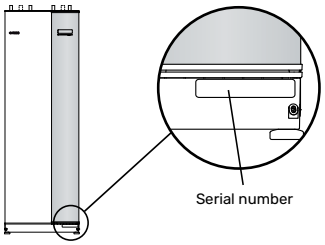
Explanation of symbols that may be present on the product's label(s).

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, in the info menu (menu 3.1) and on the type plate (PZ1).



NOTE!

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.

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
Heating medium, see section "System diagram"				
	System flushed			
	System vented			
	Expansion vessel			
	Particle filter			
	Safety valve			
	Shut off valves			
	System pressure			
	Connected according to outline diagram			
Hot water, see section "Cold and hot water"				
	Shut off valves			
	Mixing valve			
	Safety valve			
Electricity, see section "Electrical connections"				
	Connected communication			
	Circuit fuses			
	Fuses property			
	Outside sensor			
	Room sensor			
	Current sensor			
	Safety breaker			
	Earth circuit-breaker			
	Setting of emergency mode thermostat			
Miscellaneous				
	Docked to			

System solutions

Go to CompatibilityAWHP or scan the QR code below.

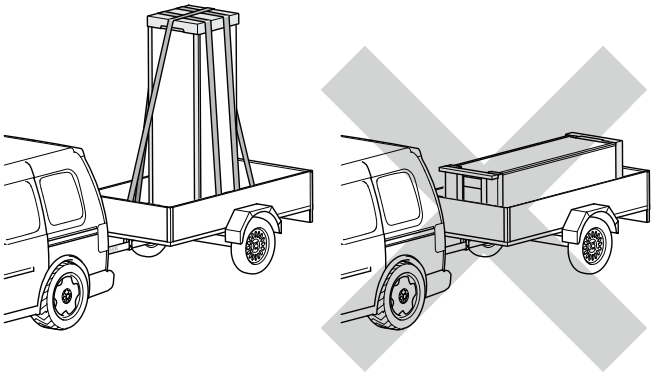
This provides information about possible combinations with VVM 310. (Some products are not sold in all markets).

Delivery and handling

Transport

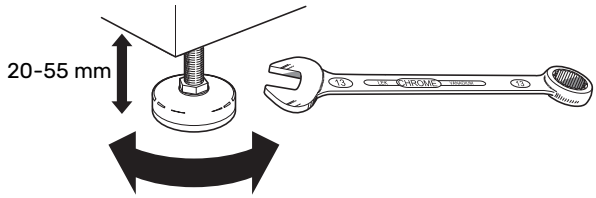
VVM 310 should be transported and stored vertically in a dry place.

However, the VVM 310 can be carefully laid on its back when being moved into the building.



Assembly

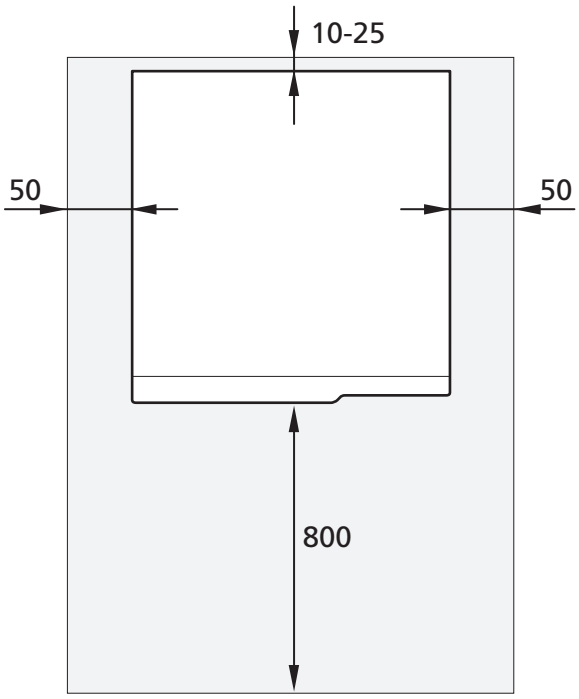
- Position VVM 310 on a solid foundation indoors that withstands water and the weight of the product.
- Use the product's adjustable feet to attain a horizontal and stable set-up.



- Since water comes from VVM 310, the area where VVM 310 is located must be equipped with floor drainage.
- The space where VVM 310 is located must be frost-free.

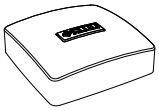
INSTALLATION AREA

Leave a free space of 800 mm in front of the product. All service on VVM 310 can be carried out from the front.

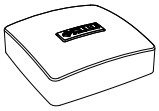


> **CAUTION!**
> Leave 10 – 25 mm free space between VVM 310 and the wall behind for routing cables and pipes.

Supplied components



Outside sensor



Room sensor

Current sensor

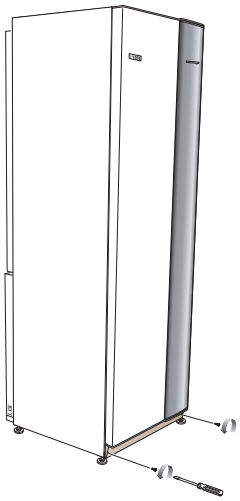
LOCATION

The kit of supplied items is placed on top of the product.

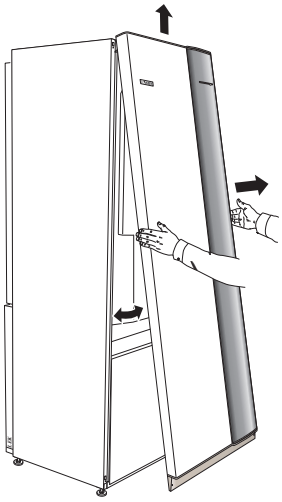
Removing panels

FRONT PANEL

1. Remove the screws from the lower edge of the front panel.



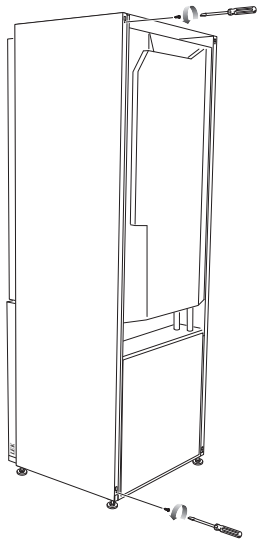
2. Lift the panel out at the bottom edge and up.
3. Pull the panel towards yourself.



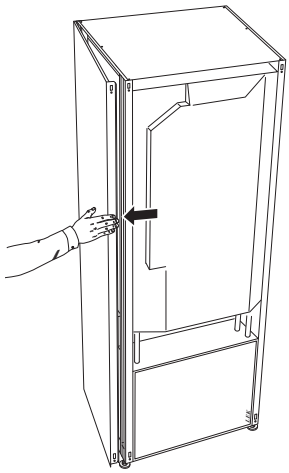
SIDE PANELS

NOTE!
50 mm space required to remove the side panels.

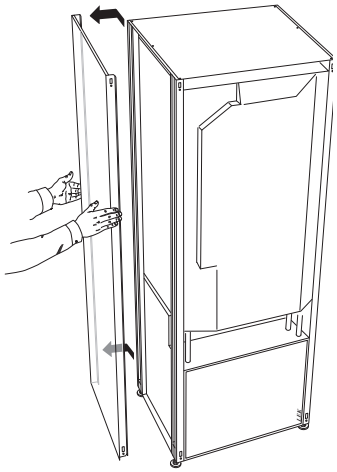
1. Remove the screws from the upper and lower edges.



2. Twist the panel slightly outwards.

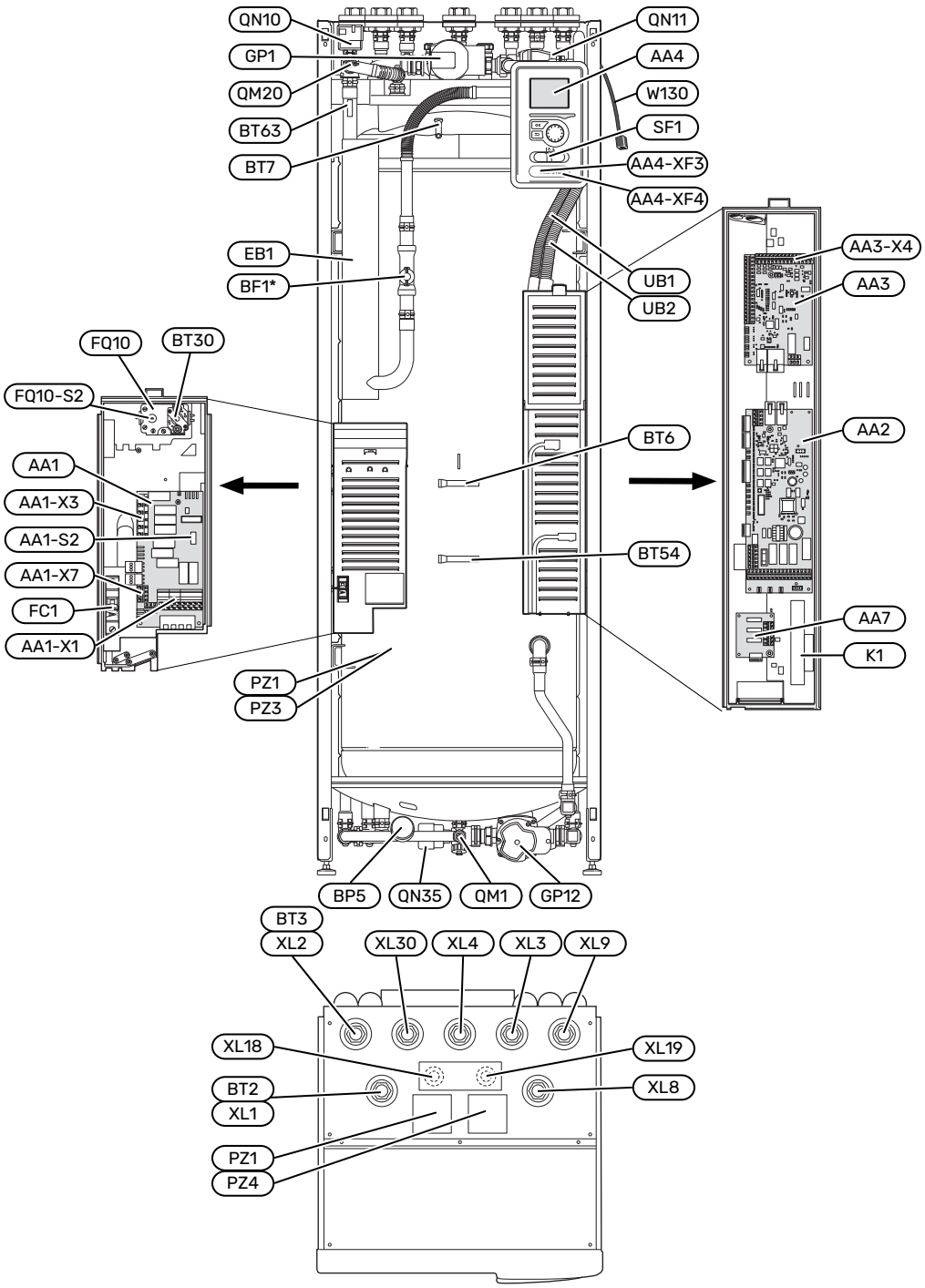


3. Move the panel backwards and slightly to the side.



4. Assembly takes place in the reverse order.

Design VVM 310



*Applies to VVM 310 EMK. Available as accessory EMK 310 for other markets.

List of components

PIPE CONNECTIONS

XL1	Heating medium connection, supply
XL2	Heating medium connection, return
XL3	Cold water connection
XL4	Hot water connection
XL8	Docking connection, supply from heat pump
XL9	Docking connection, return to heat pump
XL18	Docking connection, supply
XL19	Docking connection, return
XL30	Expansion vessel connection

HVAC COMPONENTS

GP1	Circulation pump
GP12	Charge pump
QM1	Drain valve, climate system
QM20	Venting valve, climate system
QN10	Diverter valve, climate system/water heating, flow line
QN11	Mixing valve, addition
QN35	Diverter valve, climate system/water heating, return line

SENSORS ETC.

BP5	Manometer, heating system
BT2	Temperature sensor, heating medium supply [1]
BT3	Temperature sensor, heating medium return [1]
BT6	Temperature sensor, hot water, control
BT7	Temperature sensor, hot water, display
BT30	Thermostat, standby mode
BT54	Sensor, external heat source, tank
BT63	Temperature sensor, heating medium supply after immersion heater

[1] Not visible in the image

ELECTRICAL COMPONENTS

AA1	Immersion heater card
	AA1-S2 Switch (DIP switch) on circuit board
	AA1-X1 Terminal block incoming
	AA1-X3 Terminal block, immersion heater
	AA1-X7 Terminal block, immersion heater
AA2	Base card
AA3	Input circuit board
	AA3-X4 Terminal block, current sensors
AA4	Display unit
	AA4-XF3 USB socket
	AA4-XF4 Service socket
AA7	Extra relay circuit board
BF1	Flow meter
EB1	Immersion heater
FC1	Miniature circuit-breaker
FQ10	Temperature limiter
FQ10-S2	Resetting temperature limiter
K1	Auxiliary relay, emergency mode.
SF1	Switch
W130	Network cable for myUplink

MISCELLANEOUS

PZ1	Rating plate
PZ3	Serial number plate
PZ4	Sign, pipe connections
UB1	Cable gland
UB2	Cable gland

Designations according to standard EN 81346-2.

Pipe connections

General pipe connections

Pipe installation must be carried out in accordance with current norms and directives.

The system requires the dimensions of the radiator circuit to be designed for a low temperature heating medium. At the lowest dimensioned outdoor temperature, the highest recommended temperatures are 55 °C on the supply line and 45 °C on the return line, but VVM 310 can handle up to 70 °C on the supply line.

NOTE!

Ensure that incoming cold water is clean. When using a private well, it is important to take a water sample. Depending on the water quality, it may be necessary to supplement with an extra water filter.

NOTE!

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

CAUTION!

The pipe installation has to be flushed clean before the product is connected, to prevent any contaminants from damaging the components. If there is a risk that magnetite may be present, a magnetite filter should be installed.

CAUTION!

Water may drip from the safety valve's overflow pipe. The overflow pipe must be routed to a suitable drain, to prevent hot water splashes from causing harm. The overflow pipe must be inclined along its entire length to prevent pockets where water can accumulate, and must be frost-proof. The overflow pipe must be at least the same size as the safety valve. The overflow pipe must be visible and its mouth must be open and not placed close to electrical components.

MINIMUM SYSTEM FLOW DEFROSTING

CAUTION!

An undersized climate system can result in damage to the product and lead to malfunctions.

The dimensions of the pipes between the indoor module and the heat pump should not be less than the recommended pipe diameter. However, each climate system must be dimensioned individually to provide the recommended system flows.

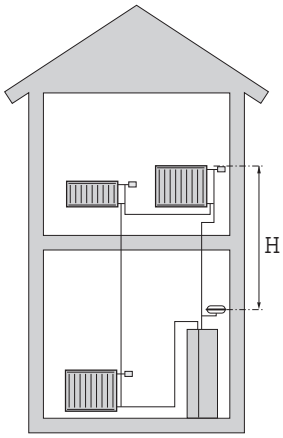
The installation must be dimensioned to provide the minimum defrosting flow at 100 % circulation pump operation.

SYSTEM VOLUME

Internal volume in VVM 310 for calculating expansion vessel is 250 l. The expansion vessel's volume must be at least 5 % of the system's total volume.

Example table

Total volume (l) (indoor module and climate system)	Volume (l) expansion vessel
500	25
700	35
1,000	50



CAUTION!

Expansion vessels are not supplied with the product. Equip the product with an expansion vessel.

The pre-pressure of the pressure expansion vessel must be dimensioned according to the maximum height (H) between the vessel and the highest positioned radiator, see figure. A pre-pressure of 0.5 bar (5 mvp) means a maximum permitted height difference of 5 m.

If the standard pre-pressure in the pressure vessel is not high enough, it can be increased by filling via the valve in the expansion vessel. The expansion vessel's pre-pressure must be entered in the check list on page 5.

Any change in the initial pressure affects the ability of the expansion vessel to handle the expansion of the water.

SYMBOL KEY

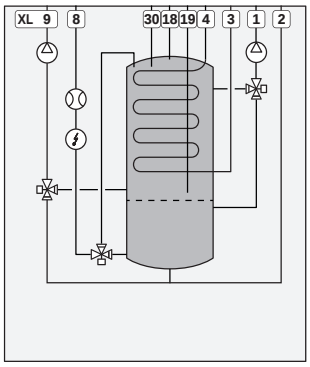
Symbol	Meaning
	Shut-off valve
	Non-return valve
	Mixing valve
	Circulation pump
	Immersion heater
	Expansion vessel
	Filterball
	Flow meter/energy meter
	Shut off valve
	Pressure gauge
	Control valve
	Safety valve
	Diverter valve/shunt
	Manual diverter valve/shunt
	Indoor module
	Air/water heat pump
	Heating system
	Heating system with lower temperature
	Cooling system
	Domestic hot water
	Hot water circulation

SYSTEM DIAGRAM

VVM 310 consists of hot water coil for hot water heating, immersion heater, circulation pumps, buffer vessel and control system. VVM 310 connects to the climate system.

VVM 310 is designed for connection and communication with a compatible NIBE air/water heat pump.

When it is cold outdoors, the air/water heat pump works with VVM 310, and if the outdoor air temperature falls below the heat pump's stop temperature, all heating is carried out by VVM 310.

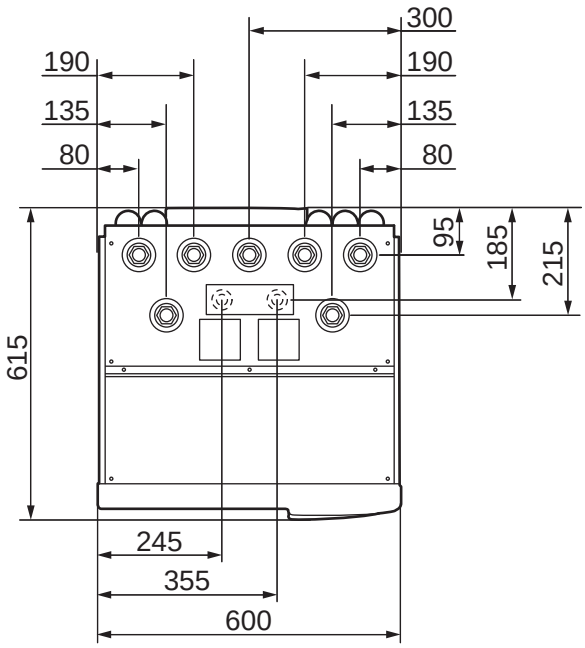


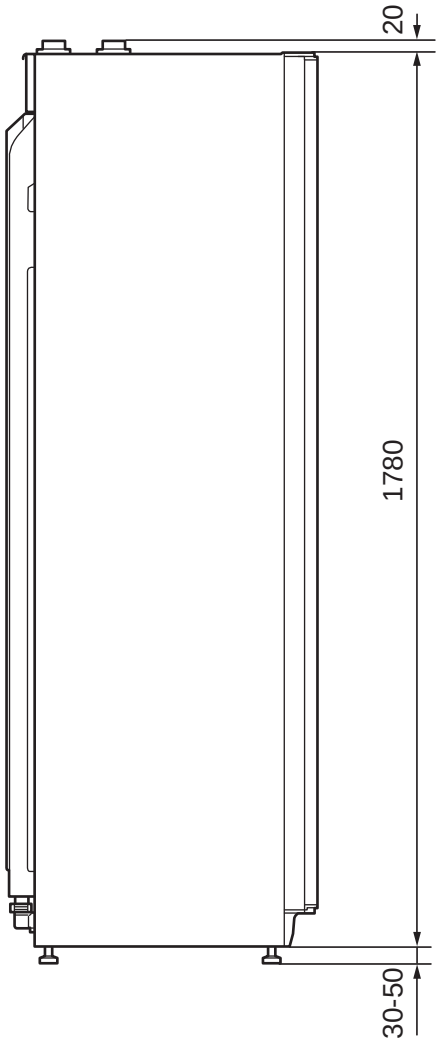
XL1	Heating medium connection, supply
XL2	Heating medium connection, return
XL3	Cold water connection
XL4	Hot water connection
XL8	Docking connection, supply from heat pump
XL9	Docking connection, return to heat pump
XL18	Docking connection, supply from additional heat
XL19	Docking connection, return to additional heat
XL30	Expansion vessel connection

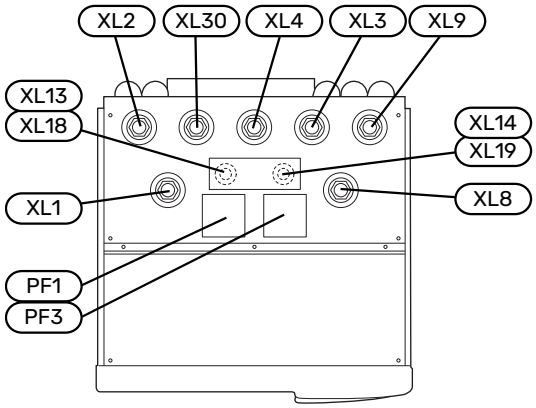
NOTE!

This is a principle of operation. For more detailed information about VVM 310, see section "Design VVM 310".

Dimensions and pipe connections







PIPE DIMENSIONS

Connection			
XL1	Heating medium connection, supply ⊖		G20 inv.
XL2	Heating medium connection, return ⊖		G20 inv.
XL3	Cold water connection ⊖		G20 inv.
XL4	Hot water connection ⊖		G20 inv.
XL8	Docking connection, supply from heat pump ⊖		G20 inv.
XL9	Docking connection, return to heat pump ⊖		G20 inv.
XL13	Solar heat connection, supply ⊖	mm	22
XL14	Solar heat connection, return ⊖	mm	22
XL18	Docking connection, supply from additional heat ⊖	mm	22
XL19	Docking connection, return to additional heat ⊖	mm	22
XL30	Expansion vessel connection		G20 int.

Connecting to air/water heat pump

NIBE recommends installing VVM 310 as close to the heat pump as possible to obtain the optimum comfort.

> **NOTE!**
> Also, consult the Installer Manual for your air/water heat pump.

Install as follows:

- pressure relief valve

  Some heat pump models have a factory-fitted safety valve.

- drain valve

  For draining the heat pump during prolonged power failures. Only for heat pumps that do not have a gas separator.

- non-return valve

  A non-return valve is only required in those installations where the placement of the products in relation to each other can cause self-circulation.

  If the heat pump is already fitted with a non-return valve, there is no need to install another.

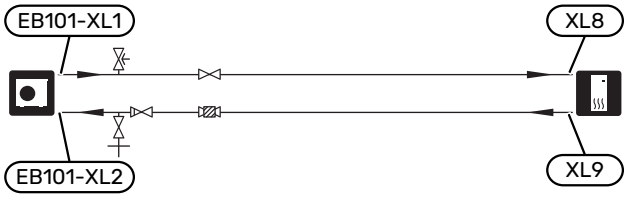
- shut-off valve

  To facilitate any future servicing.

- filterball or particle filter

  The filterball/particle filter must be installed indoors on the return line to the heat pump.

  In installations with a particle filter, the filter is combined with an additional shut-off valve.

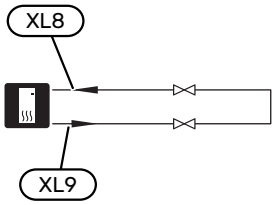


Use without heat pump

The indoor unit can be used without a heat pump, i.e. solely as an electric boiler, for example to produce heat and hot water before the heat pump is installed.

In order to use the indoor module alone, you need:

1. connect the pipe for docking coming in from the heat pump (XL8) with the pipe out to the heat pump (XL9)
2. To make software settings according to section "Commissioning without heat pump".



Climate system

A climate system is a system that regulates the indoor temperature with the help of the control system in VVM 310 and the heating medium circuit's radiators, under floor heating, under floor cooling, fan coils, etc.

CONNECTING THE CLIMATE SYSTEM

Install as follows:

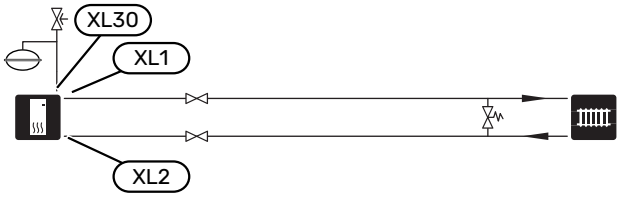
- expansion vessel in connection XL30
- pressure relief valve

  Recommended opening pressure is 0.25 MPa (2.5 bar). For information about max opening pressure, see technical specifications.

- shut-off valves

  Install the shut-off valves as close to VVM 310 as possible.

- When connecting to a system with thermostats, either a bypass valve must be fitted or, alternatively, some of the thermostats must be removed to ensure there is sufficient flow and heat emission.



Cold and hot water

The settings for hot water are made in menu 5.1.1.

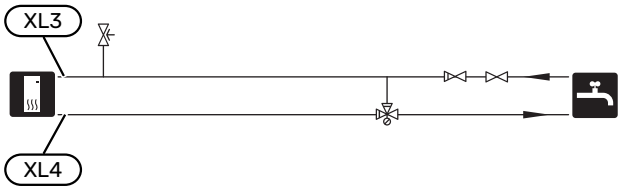
CONNECTING COLD AND HOT WATER

Install as follows:

- shut-off valve
- non-return valve
- pressure relief valve

  The safety valve must have an opening pressure of max. 1.0 MPa (10.0 bar).
- mixing valve

  A mixer valve must also be installed, if the factory setting for hot water is changed. National regulations must be observed.



Installation alternative

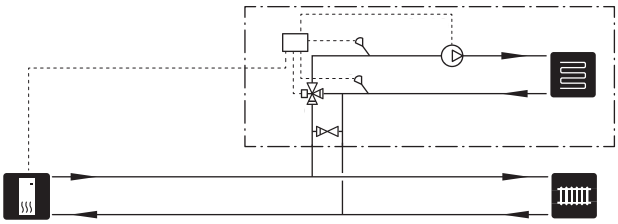
VVM 310 can be installed in several different ways, some of which are shown here.

Further option information is available at nibe.eu and in the respective assembly instructions for the accessories used. See page 53 for a list of the accessories that can be used with VVM 310.

EXTRA CLIMATE SYSTEM

In a property with several climate systems that require different supply temperatures, the accessory ECS 40/ECS 41 can be connected.

A shunt valve then lowers the temperature to the underfloor heating system, for example.



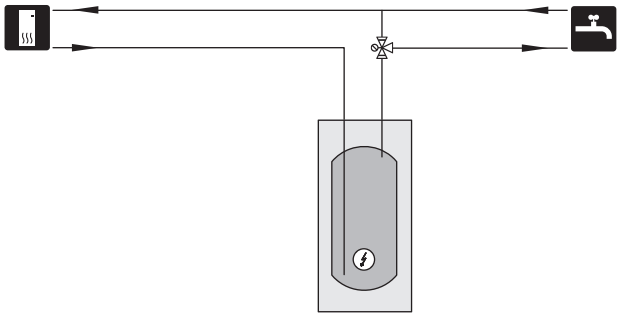
EXTRA HOT WATER HEATERS

The system should be supplemented with an extra water heater, if a large bath tub or other significant consumer of hot water is installed.

Water heater with immersion heater

In a water heater with an immersion heater, the water is initially heated by the heat pump. The immersion heater in the water heater is used for keeping warm and when the heat pump does not have sufficient power.

The water heater's flow is connected after VVM 310.



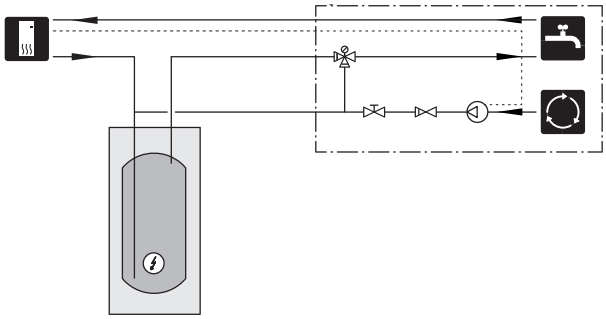
CONNECTING HOT WATER CIRCULATION

A circulation pump can be controlled by VVM 310 to circulate the hot water. The circulating water must have a temperature that prevents bacterial growth and scalding. National standards must be met.

The HWC return is connected to a freestanding water heater.

The circulation pump is activated via the AUX output in menu 5.4 - "soft in/outputs".

HWC can be supplemented with a hot water sensor for HWC (BT70) and (BT82), which is connected via the AUX input and activated in menu 5.4 - "soft in/outputs".

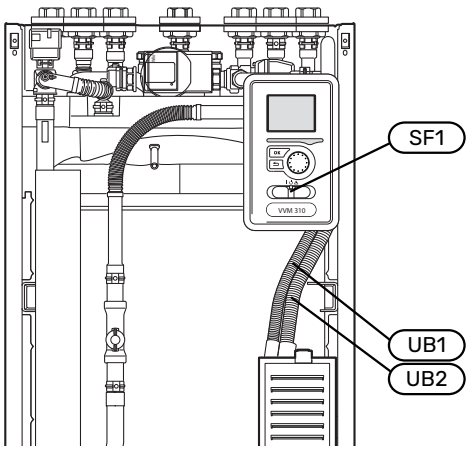


Electrical connections

General

All electrical equipment, except the outdoor sensors, room sensors and the current sensors are ready connected at the factory.

- Electrical installation and wiring must be carried out in accordance with national provisions.
- Disconnect VVM 310 before insulation testing the house wiring.
- VVM 310 should be equipped with a residual current device (RCD). A separate residual current device is recommended.
- The RCD must have a nominal tripping current of no more than 30 mA.
- VVM 310 must be installed via an isolator switch. The cable area has to be dimensioned based on the fuse rating used.
- If a miniature circuit breaker is used, this must have at least triggering characteristic "C". See section "Technical specifications" for fuse size.
- Use a screened cable for communication with the heat pump. Max. cable area 0.75 mm².
- To prevent interference, communication cables to external connections must not be laid in the vicinity of high voltage cables.
- The minimum area of communication and sensor cables to external connections must be 0.5 mm² up to 50 m, for example EKKX, LiYY or equivalent.
- For an electrical wiring diagram for VVM 310, see the "Technical specifications" section.
- When routing a cable into VVM 310, the cable grommets (UB1) and (UB2) must be used.



CAUTION!

Electrical installation and any servicing must be carried out under the supervision of a qualified electrician. Turn off the power with the circuit breaker before servicing.

CAUTION!

If the supply cable is damaged, only NIBE, its service representative or similar authorised person may replace it to prevent any danger and damage.

CAUTION!

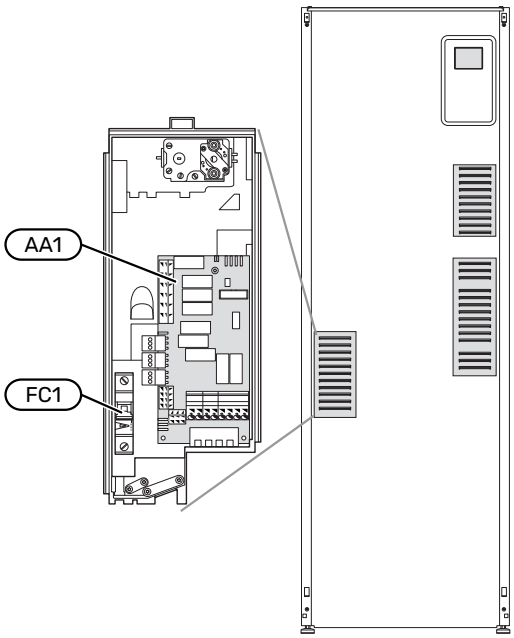
To prevent damage to the electronics in VVM 310, check the connections, main voltage and phase voltage before starting the product.

CAUTION!

The switch (SF1) must not be set to "I" or "⚠" until the water has been filled. Components in the system could be damaged.

MINIATURE CIRCUIT-BREAKER

The operating circuit in VVM 310 and some of its internal components are fused internally by a miniature circuit-breaker (FC1).

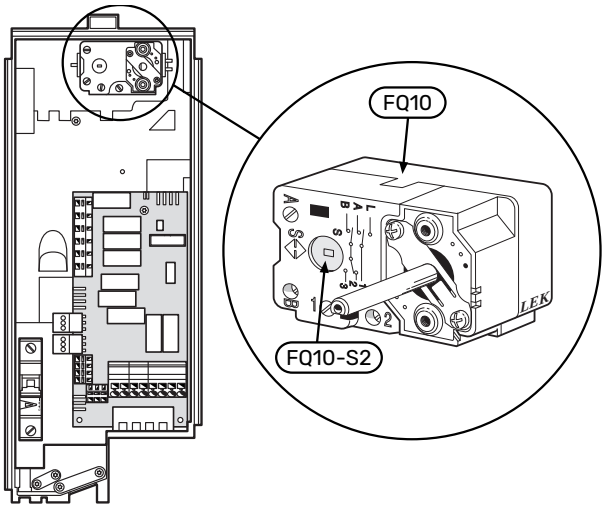


TEMPERATURE LIMITER

The temperature limiter (FQ10) cuts the power to the electric additional heat, if the temperature rises to between 90 and 100 °C and it is reset manually.

Resetting

The temperature limiter (FQ10) is accessible behind the front cover. Reset the temperature limiter by pressing the button (FQ10-S2) using a small screwdriver. Press the button lightly, max. 15 N (approx. 1.5 kg).

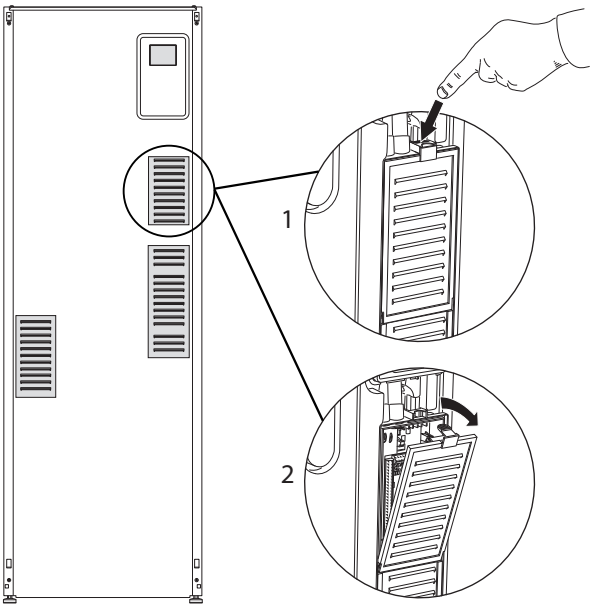


ACCESSIBILITY, ELECTRICAL CONNECTION

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

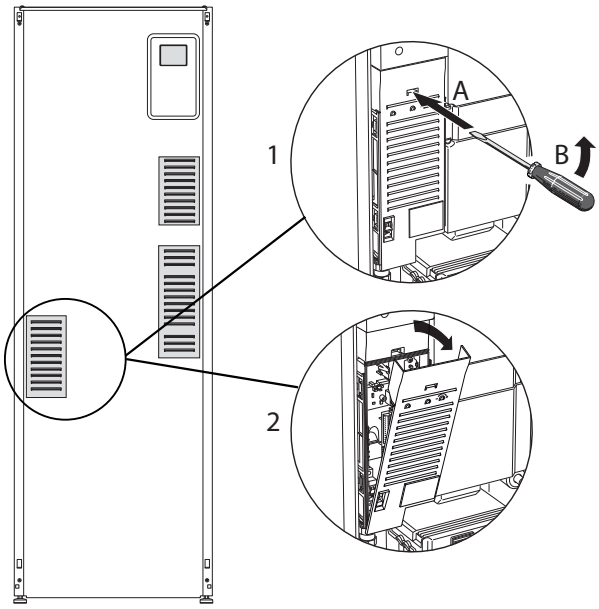
> **CAUTION!**
> The cover for the input card is opened without a tool.

Removing the cover, input circuit board



1. Push the catch down.
2. Angle out the cover and remove it.

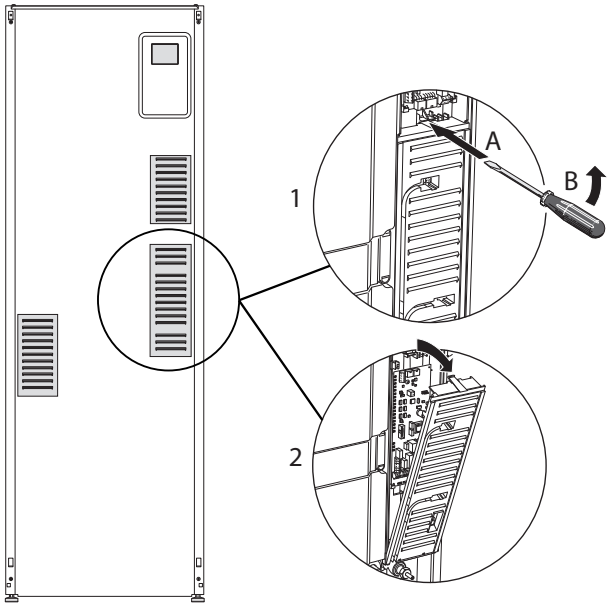
Removing the cover, immersion heater circuit board



1. Insert the screwdriver (A) and pry the catch carefully downwards (B).
2. Angle out the cover and remove it.

Removing the cover, base board

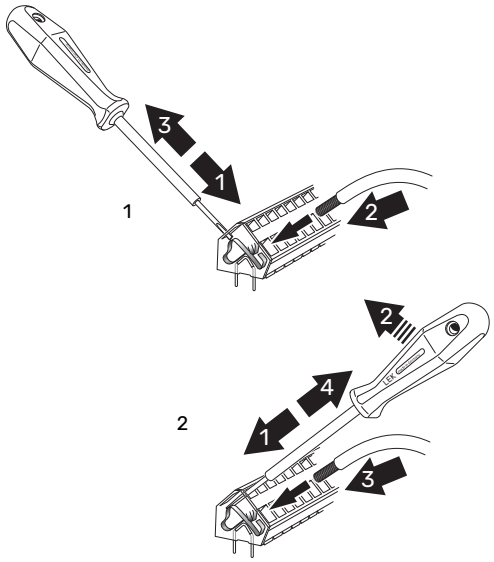
> **NOTE!**
> To remove the cover for the base board, the cover for the input circuit board must first be removed.



1. Insert the screwdriver (A) and pry the catch carefully downwards (B).
2. Angle out the cover and remove it.

CABLE LOCK

Use a suitable tool to release/lock cables in the indoor module terminal blocks.



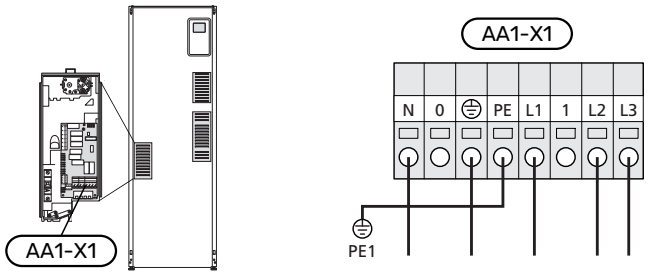
Connections

POWER CONNECTION

The enclosed cable (length approx. 2 m) for incoming electricity is connected to terminal block X1 on the electric addition PCB (AA1). The connection cable can be found on the reverse of VVM 310.

Connection

3x400V



EXTERNAL CONTROL VOLTAGE FOR THE CONTROL SYSTEM

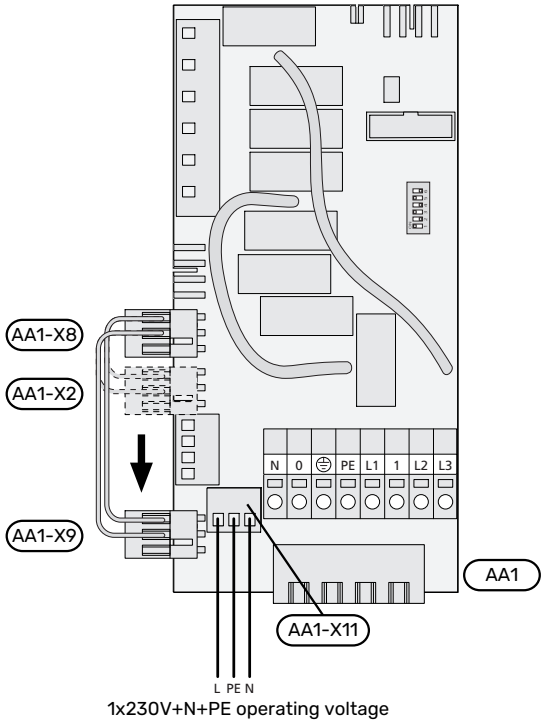
If the control system will be powered separately from other components in the indoor module (e.g. for tariff control), a separate operating cable must be connected.

> **CAUTION!**
> Mark up any junction boxes with warnings for external voltage.

> **CAUTION!**
> During service, all supply circuits must be disconnected.

If you wish to connect an external control voltage for the control system to VVM 310 on the electric addition PCB (AA1), the edge connector at AA1:X2 must be moved to AA1:X9.

Connect the control voltage (1x230 V ~ 50 Hz) to AA1:X11.

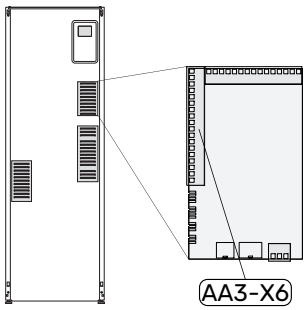


Tariff control

If the voltage to the immersion heater is lost for some time, "Tariff blocking" must be selected at the same time via the selectable inputs, see section "Selectable inputs".

CONNECTING SENSOR

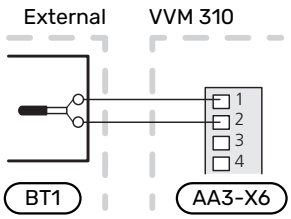
Outside sensor



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

Connect the outdoor temperature sensor to terminal block X6:1 and X6:2 on the input board (AA3).

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



Room sensor

VVM 310 is supplied with an enclosed room sensor (BT50). The room sensor has a number of functions:

1. Shows current room temperature in the display on VVM 310.
2. Option of changing the room temperature in °C.
3. Provides the option of fine-tuning the room temperature.

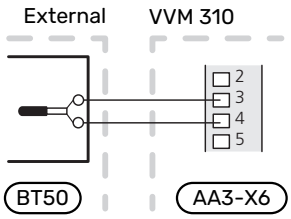
Install the sensor in a neutral position where the set temperature is wanted.

A suitable location is on a free inner wall in a hall approx. 1.5 m above the floor. It is important that the sensor is not prevented from measuring the correct room temperature, for example by being located in a recess, between shelves, behind a curtain, above or close to a heat source, in a draught from an external door or in direct sunlight. Closed radiator thermostats can also cause problems.

VVM 310 operates without the room sensor, but if you want to read the home's indoor temperature from the display on VVM 310, the sensor must be fitted. Connect the room sensor to X6:3 and X6:4 on the input board (AA3).

If the room temperature sensor is to have a controlling function, it is activated in menu 1.9.4 - "room sensor settings".

If the room sensor is used in a room with underfloor heating, it should only have an indicatory function, not control of the room temperature.

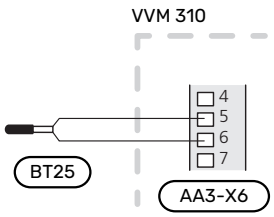


NOTE!

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

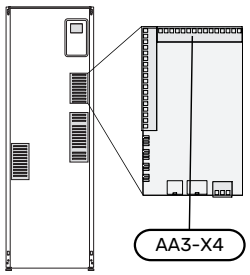
External supply temperature sensor

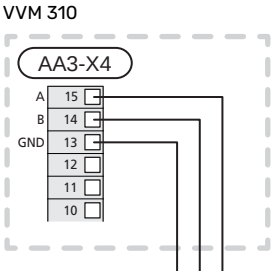
If an external supply temperature sensor (BT25) needs to be used, connect it to terminal block X6:5 and X6:6 on the input board (AA3).



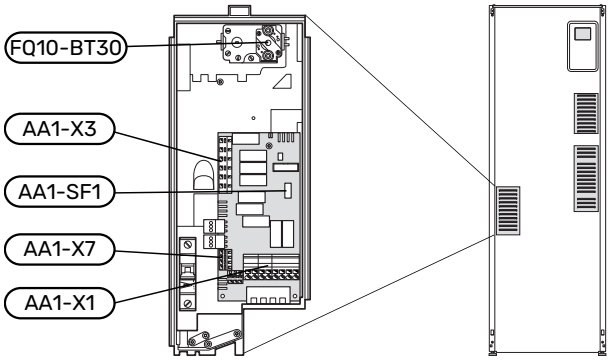
COMMUNICATION

If VVM 310 is to be connected to the heat pump, it is connected to terminal blocks X4:13, X4:14 and X4:15 on the input board (AA3).





Settings



ELECTRICAL ADDITION - MAXIMUM OUTPUT

The immersion heater output is divided into 9 steps, according to the table.

The immersion heater can be set to a maximum of 12 kW. The delivery setting is 8 kW.

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

Power steps of the immersion heater

Electrical addition (kW)	Max (A) L1	Max (A) L2	Max (A) L3
0	0.0	0.0	0.0
1.33	5.8	0.0	0.0
2.67	11.16	0.0	0.0
4	5.8	11.6	0.0
5.33	11.6	11.6	0.0
6.66	11.6	11.6	5.8
8	11.6	11.6	11.6
9.33	11.6	17.4	11.6
10.66	11.6	17.4	17.4
12	17.4	17.4	17.4

The table displays the maximum phase current for the relevant electrical step for the indoor module.

If the current sensors are connected, the indoor module monitors the phase currents.

> **CAUTION!**
>
> If the current sensors are not connected, the indoor module performs a calculation of how high the currents will be if the relevant power steps are added. If the currents are higher than the set fuse size, the power step is not allowed to cut in. See chapter Load monitor on page 19.

EMERGENCY MODE

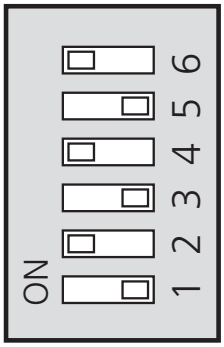
When the indoor module is set to emergency mode (SF1 is set to ⚠) only the most necessary functions are activated.

- No hot water is produced.
- The load monitor is not connected.
- Fixed temperature in the supply line, see section Emergency mode thermostat.

Power in emergency mode

The immersion heater's output in emergency mode is set with the DIP switch (SF1) on the immersion heater board (AA1), according to the table below. The factory setting is 8 kW.

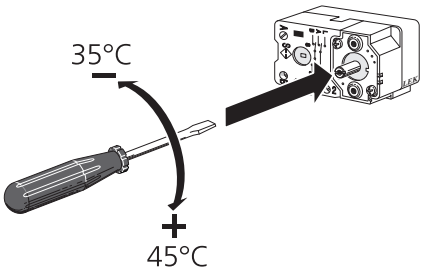
kW	1	2	3	4	5	6
1.33	**on**	off	off	off	off	off
2.67	off	**on**	off	off	off	off
4	**on**	off	off	**on**	off	off
5.33	off	**on**	off	**on**	off	off
6.66	**on**	off	off	**on**	off	**on**
8	off	**on**	off	**on**	off	**on**
9.33	**on**	**on**	off	**on**	off	**on**
10.66	**on**	**on**	**on**	**on**	off	**on**
12	**on**	**on**	**on**	**on**	**on**	**on**



The image shows the dip-switch (AA1-SF1) in the factory setting, that is 8 kW.

Emergency mode thermostat

The supply temperature in emergency mode is set using a thermostat (FQ10-BT30). It can be set to 35 (preset, e.g. underfloor heating) or 45 °C (e.g. radiators).



Optional connections

LOAD MONITOR

Integrated load monitor

VVM 310 is equipped with a simple form of integrated load monitor, which limits the power steps for the electric additional heat by calculating whether future power steps can be connected to the relevant phase without exceeding the current for the specified main fuse.

If the current would exceed the specified main fuse, the power step is not permitted. The size of the property's main fuse is specified in menu 5.1.12 - "internal electrical addition".

Load monitor with current sensor

When many power-consuming products are connected in the property at the same time as the compressor and/or the electric additional heat is operating, there is a risk of the property's main fuses tripping.

VVM 310 is equipped with a load monitor that, with the help of a current sensor, controls the power steps for the electric additional heat by redistributing the power between the different phases or, alternatively, disengages the electric additional heat step-by-step if there is an overload in a phase.

If the overload persists, even though the electric additional heat has been disconnected, the compressor is restricted if it is inverter controlled.

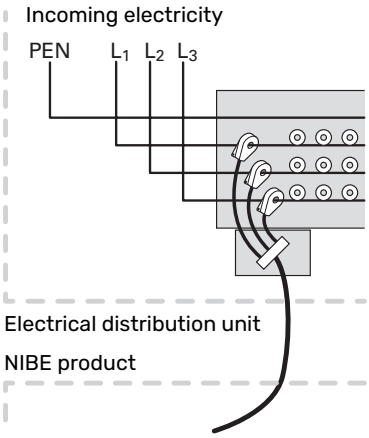
Reconnection occurs when the other current consumption is reduced.

The building's phases can have different loads. If the compressor has been connected to a heavily loaded phase, there is a risk that the compressor output will be restricted and the electric additional heat will operate longer than expected. This means that the savings will not be as expected.

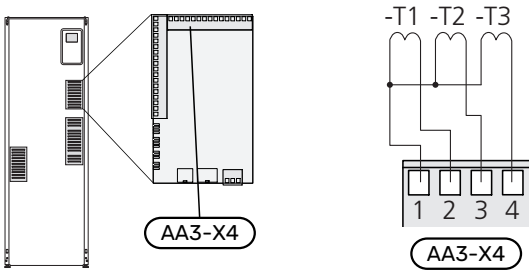
Connection and activation of current sensors

1. Install a current sensor on each incoming phase conductor into the electrical distribution unit. This is best done in the electrical distribution unit.

2. Connect the current sensors to a multi-core cable in an enclosure directly adjacent to the electrical distribution unit. The multi-core cable between the enclosure and VVM 310 must have a cable area of at least 0.5 mm².



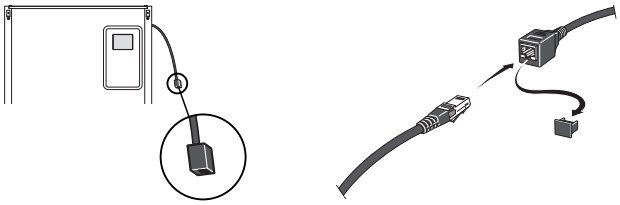
3. Connect the cable to the input board (AA3) on terminal block X4:1-4 where X4:1 is the common terminal block for the three current sensors.



4. Specify the size of the property's main fuse in menu 5.1.12 - "internal electrical addition".
5. Activate phase detection in menu 5.1.12 - "internal electrical addition". Read more about phase detection in section "Menu 5.1.12 - internal electrical addition".

MYUPLINK

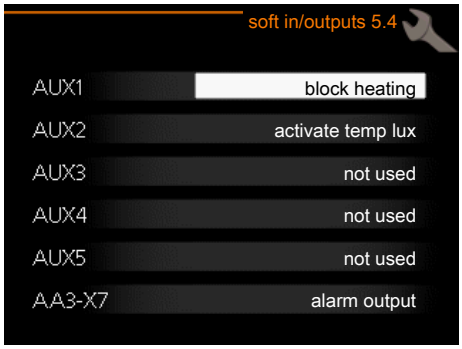
Connect the network connected cable (straight, Cat.5e UTP) with RJ45-contact (male) to RJ45 contact (female) on the rear of the indoor unit.



EXTERNAL CONNECTION OPTIONS (AUX)

VVM 310 has software-controlled AUX inputs and outputs for connecting the external switch function (contact has to be potential-free) or sensor.

In menu 5.4 - "soft in/outputs", you select the AUX connection to which each function has been connected.



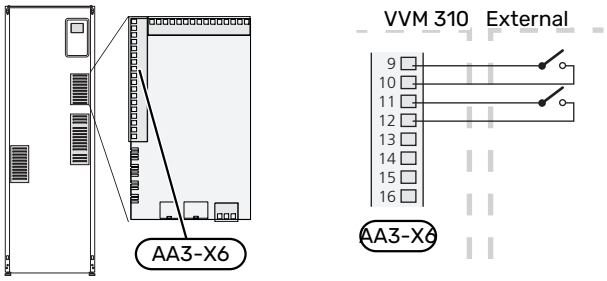
For certain functions, accessories may be required.

> **TIP!**
> Some of the following functions can also be activated and scheduled via menu settings.

Selectable inputs

Selectable inputs on the input board (AA3) for these functions are:

AUX1	AA3-X6:9-10
AUX2	AA3-X6:11-12
AUX3	AA3-X6:13-14
AUX4	AA3-X6:15-16
AUX5	AA3-X6:17-18



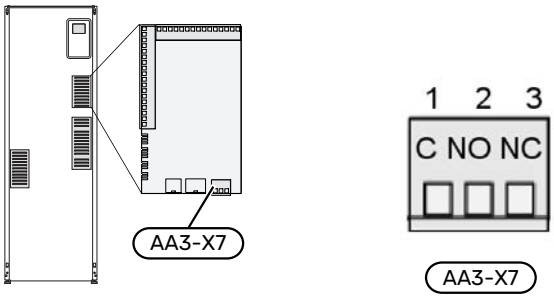
The example above uses the inputs AUX1 (X6:9-10) and AUX2 (X6:11-12) on the input board (AA3).

Selectable output

The output is a potential-free switching relay.

Alarm indication is connected to C-NC, other functions are connected to C-NO.

When switch (SF1) is in the "⏻" or "⚠" position, the relay is in the C-NC position.



> **NOTE!**
> The relay output may be subjected to a max load of 2 A at resistive load (230 V~).

> **TIP!**
> The AXC accessory is required if more than one function is to be connected to the AUX output.

Possible selection for AUX inputs

Temperature sensor

Available options are:

- Cool/ht sensor (BT74), determines when it is time to switch between cooling, heating and hot water mode.
- supply temperature sensor for cooling (BT64) (used when “active cooling in 4-pipe system” has been activated in the output AA3-X7)
- Ext. HW out temp. (BT70) (displayed hot water sensor for HWC. Placed on the supply line.)

  Can be selected when "HW circulation" is activated in menu 7.4 - "Selectable in/outputs".
- Ext. HW recirc. temp. (BT82) (displayed hot water sensor for HWC. Placed on the return line.)

  Can be selected when "HW circulation" is activated in menu 7.4 - "Selectable in/outputs".

Monitor

Available options are:

- External alarm (NO), External alarm (NC)
  The alarm is connected to the control, which means that the malfunction is presented as an information message in the display.
- Stove monitor. To the ERS HRV unit.

  A stove monitor is a thermostat that is connected to the chimney. If the negative pressure is too low, the fans in ERS (NC) are closed.
- Press. switch climate syst. (NC)

External activation of functions

An external switch function can be connected to VVM 310 to activate various functions. The function is activated during the time the switch is closed.

Possible functions that can be activated:

- hot water comfort mode “temporary lux”
- hot water comfort mode “economy”
- “external adjustment”

  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 not activated, the desired change of “temperature” (heating curve offset) is set with the number of steps selected. The value is adjustable between -10 and +10. External adjustment of climate systems 2 to 8 requires accessories.

  – *climate system 1 to 8*

    Setting the value for the change is performed in menu 1.9.2 - "external adjustment".
- SG Ready

> **NOTE!**
> "SG Ready" requires two AUX inputs.

"SG Ready" is a smart form of tariff control, through which your electricity supplier can affect the indoor, hot water and/or pool temperatures (if applicable) or simply block the additional heating and/or the compressor in the heat pump at certain times of the day (can be selected in menu 4.1.5 - "SG Ready" after the function has been activated). Activate the function by connecting potential free switch functions to two inputs as selected in menu 5.4 - "soft in/outputs" (SG Ready A and SG Ready B).

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.

– *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. B = SG Ready B)

- +Adjust

Using +Adjust, the system communicates with the under floor heating's control centre[1] and adjusts the heating curve and calculated supply temperature based on the under floor heating system's feedback.

Activate the climate system you want +Adjust to affect by highlighting the function and pressing the OK button.

> **NOTE!**
> This function may require a software update in your VVM 310. The version can be checked in the menu 3.1 - "Service info". Visit myuplink.com and click on the "Software" tab to download the latest software to your installation.

> **NOTE!**
> In systems with both underfloor heating and radiators, NIBE ECS 40/41 should be used for optimum operation.

External blocking of functions

An external switch function can be connected to VVM 310 for blocking various functions. The switch must be potential-free and a closed switch results in blocking.

> **CAUTION!**
> Blocking entails a risk of freezing.

Functions that can be blocked:

- Block hot water (any hot water circulation (HWC) remains in operation)
- Block heating
- Block cooling
- Block additional heat
- Block (EB101) (heat pump (EB101))
- Tariff blocking (NO), Tariff blocking (NC) (additional heat, compressor, heating, cooling and hot water are disconnected)

Possible selections for AUX output

> **NOTE!**
> The relay output may be subjected to a max load of 2 A at resistive load (230 V~).

> **TIP!**
> The AXC accessory is required if more than one function is to be connected to the AUX output.

Indications

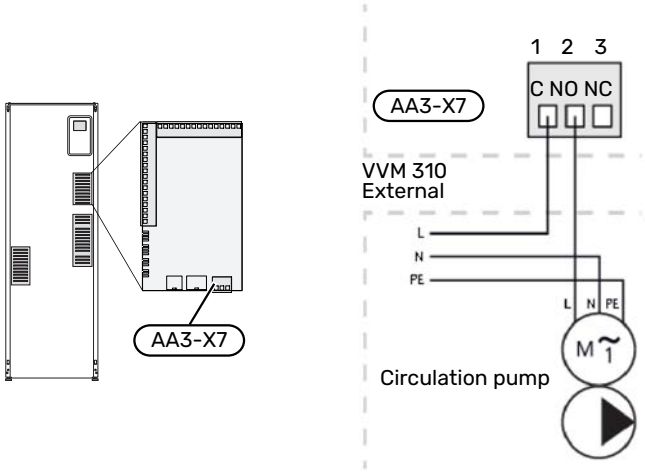
- Alarm outp.
- Group alarm
- Cooling mode indication (only applies if there are cooling accessories)
- Holiday
- away mode for "smart home" (complement to the functions in menu 4.1.7 - "smart home")

Control

- HW circulation (circulation pump for hot water circulation)
- Act. cool. 4-pipe (active cooling in 4-pipe installation)
- Ext. HM pump (external heating medium pump)
- Additional heat in charge circuit

> **CAUTION!**
> The relevant distribution box must be marked with a warning about external voltage.

An external circulation pump is connected to the AUX output, as illustrated below.



[1] Support for +Adjust is required

Integrated active cooling in 4-pipe system

Integrated active cooling in 4-pipe system with air/water heat pump is activated via soft output.

Active cooling is produced by the air/water heat pump's compressor.

When cooling in a 4-pipe system has been selected as soft output, menu group 1.9.5 is displayed and "cooling" must be activated for the air/water heat pump in menu 5.11.X.1, or with a DIP switch on the air/water heat pump in order to determine that it is to perform cooling.

Operating mode cooling is activated by the temperature of the outdoor temperature sensor (BT1) and any room sensor (BT50), room unit or separate room sensor for cooling (BT74) (if two different rooms are to be heated or cooled at the same time, for example.) When cooling is required, the cooling diverter valve (EQ1-QN12) and the cooling circulation pump (EQ1-GP12) in the indoor module (VVM) are activated.

Cooling production is regulated according to the cooling sensor (BT64) and a cooling set point value that is determined by the selected cooling curve. Cooling degree minutes are calculated based on the value on the external temperature sensor (BT64) for cooling out and the cooling set point value.

If the "active cooling 4-pipes" accessory has been activated, the function is switched off. Cooling is then operated from the accessory instead.

Connecting accessories

Instructions for connecting accessories are provided in the manual accompanying the accessory. See page 53 for the list of the accessories that can be used with VVM 310.

Connection for communication with the most common accessories is shown here.

ACCESSORIES WITH ACCESSORY BOARD AA5

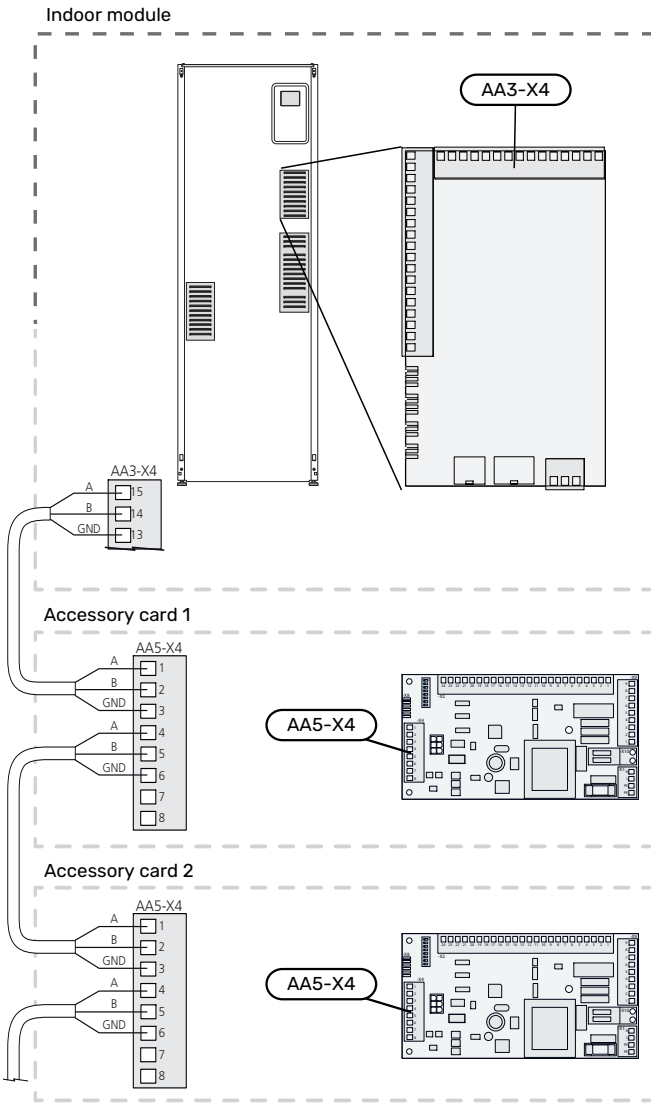
Accessories with accessory board AA5 connect to the indoor module terminal block X4:13-15 on the input board AA3.

If several accessories are to be connected or are already installed, the following instructions must be followed.

The first accessory board must be connected directly to the indoor module's terminal block AA3-X4. The following boards must be connected to the previous board in series.

Use cable type LiYY, EKKX or similar.

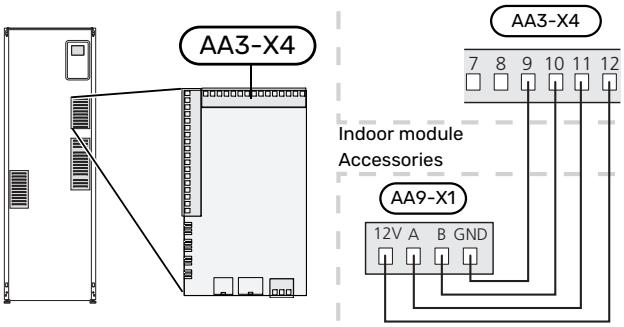
Refer to the accessory manual for further instructions.



ACCESSORIES WITH ACCESSORY BOARD AA9

Connect accessory board AA9 in Modbus 40/ SMS 40/ RMU 40 to the indoor module's terminal block X4:9-12 on the input board AA3. Use cable type LiYY, EKKX or equivalent.

Refer to the accessory manual for further instructions.



Commissioning and adjusting

Preparations

1. Check that the switch (SF1) is in position "⏻".
2. Check that the draining valve is fully closed.

Filling and venting

FILLING THE HOT WATER COIL

1. Open a hot water tap in the property.
2. Open the externally mounted shut-off valve. This valve should then be fully open during operations.
3. When water comes out of the hot water tap, the hot water coil is full and the tap can be closed.

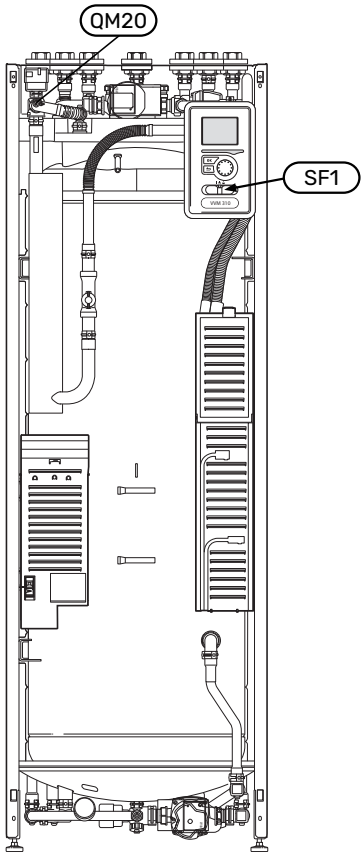
FILLING THE CLIMATE SYSTEM

1. Open the vent valve (QM20).
2. Open the externally mounted filler valve. The boiler section and the rest of the climate system are filled with water.
3. When the water exiting the vent valve (QM20) is not mixed with air, close the vent valves.
4. Reduce the pressure in the climate system to the normal working range (approx. 1 bar) by opening the vent valve (QM20) or the externally mounted safety valve.

VENTING THE CLIMATE SYSTEM

NOTE!
Insufficient venting can damage internal components in VVM 310.

1. Turn off the power supply to VVM 310.
2. Vent VVM 310 through the vent valve (QM20) and other climate systems through their relevant vent valves.
3. Keep topping up and venting until all air has been removed and the pressure is correct.



Start-up and inspection

START GUIDE

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

> **CAUTION!**
> Do not start VVM 310 if there is a risk that the water in the system has frozen.

1. Power the heat pump.
2. Check the miniature circuit-breaker (FC1). It may have tripped during transport.
3. Set switch (SF1) on VVM 310 to position "I".
4. Follow the instructions in the display's start guide. If the start guide does not start when you start the VVM 310, you can start it manually in menu 5.7.

> **TIP!**
> See the section "Control – Introduction" for a more detailed introduction to the installation's control system (operation, menus, etc.).

Commissioning

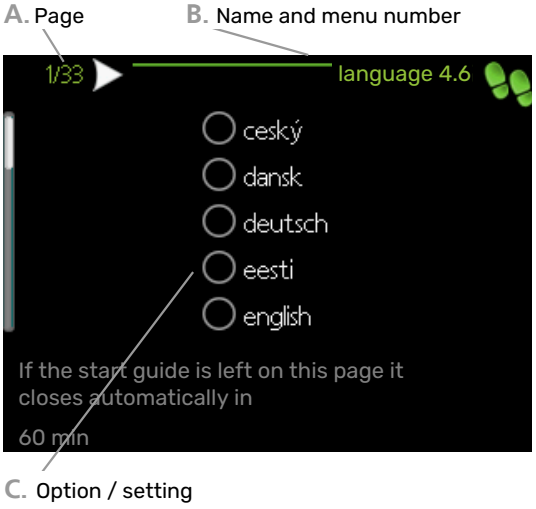
The first time the installation is started a start guide is started. The start guide instructions state what needs to carried out at the first start together with a run through of the installation's basic settings.

The start guide ensures that the start-up is carried out correctly and, for this reason, cannot be skipped.

During the start up guide the diverter valves and the shunt valve are run backward and forwards to help vent VVM 310.

> **NOTE!**
> As long as the start guide is active, no function in VVM 310 will start automatically.
>
> The start guide will appear at each restart of VVM 310, 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

Here, you can see which 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.

COMMISSIONING WITHOUT HEAT PUMP

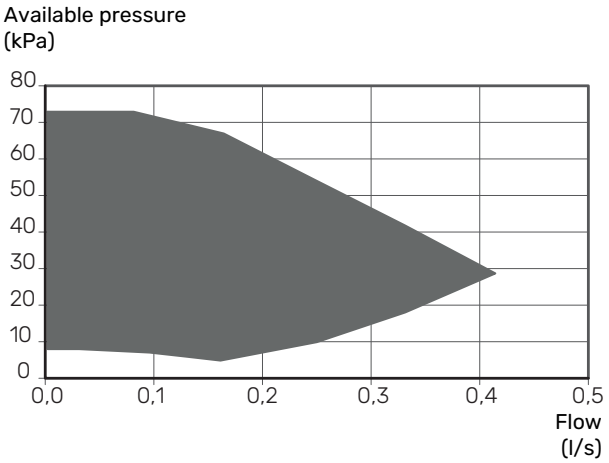
The indoor module can be used without a heat pump, i.e only as an electric boiler, to produce heat and hot water before the heat pump is installed, for example.

Go to menu 4.2 - "op. mode" and select "add. heat only".

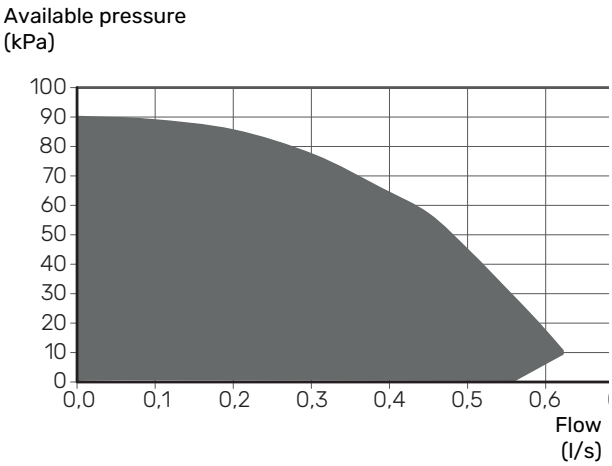
PUMP SPEED

Both the circulation pumps in VVM 310 are frequency controlled and set themselves using control and external heating requirement.

Available pressure circulation pump, GP1



Available pressure, charge pump, GP12



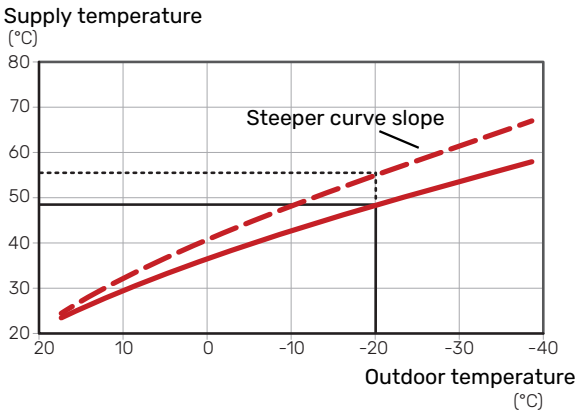
Setting the heating curve

In the menu "heating curve", you can see the heating curve for the property. The task of the curve is to provide an even indoor temperature, regardless of the outdoor temperature. Based on this curve, the VVM 310 determines the temperature of the water to the climate system (the supply temperature) and thus the indoor temperature.

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 lower the heating curve, the more energy efficient the operation, although an excessively low curve entails reduced comfort.



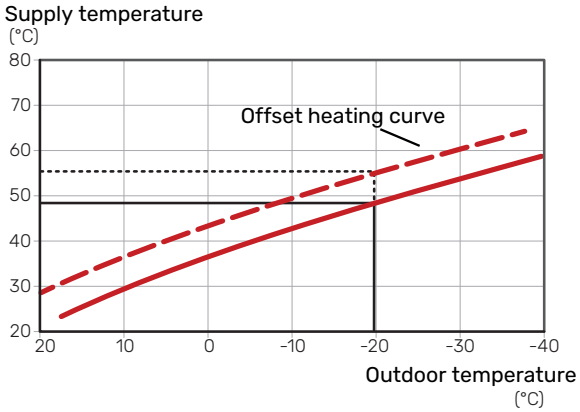
The optimum curve slope depends on the climate conditions in the area and the lowest dimensioned outdoor temperature (DOT), whether the property has radiators, fan coils or under floor heating and how well insulated the property is.

For properties with radiators or fan coils, a higher heating curve (e.g. curve 9) is suitable, for properties with under floor heating, a lower curve (e.g. curve 5) is suitable.

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

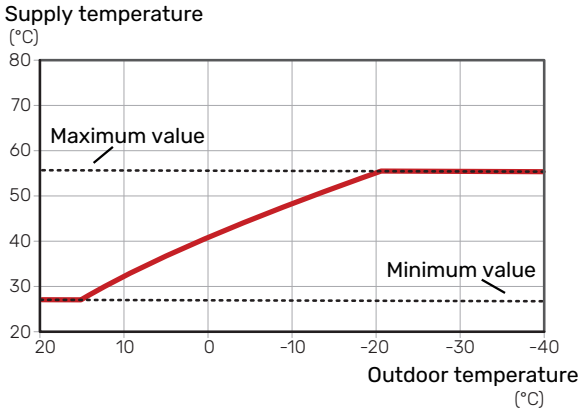
CURVE OFFSET

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



SUPPLY TEMPERATURE – MAXIMUM AND MINIMUM VALUES

Because the supply temperature cannot be calculated higher than the set maximum value or lower than the set minimum value, the curves flatten out at these temperatures.



NOTE!

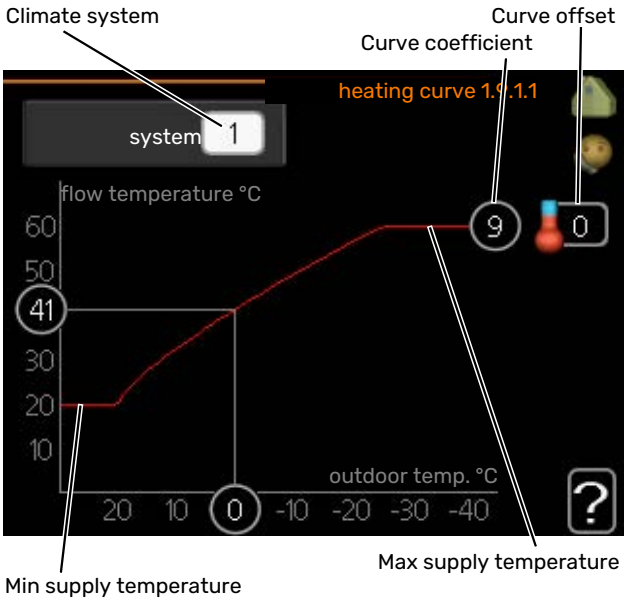
With underfloor heating systems, the maximum supply temperature is normally set between 35 and 45 °C.

NOTE!

With under floor cooling, the lowest supply temperature must be restricted to prevent condensation.

This is set in menu 1.9.3 - "min. flow line temp.".

ADJUSTMENT OF CURVE



1. Select the climate system (if more than one) for which the curve is to be changed.
2. Select curve slope and curve offset.

> **NOTE!**
>
> If you need to adjust "min. flow line temp." and/or "max flow line temperature", you do this in other menus.
>
> Settings for "min. flow line temp." in menu 1.9.3.
>
> Settings for "max flow line temperature" in menu 5.1.2.

> **NOTE!**
>
> Curve 0 means that "own curve" is used.
>
> Settings for "own curve" are made in menu 1.9.7.

TO READ OFF A HEATING CURVE

1. Turn the control knob so that the ring on the shaft with the outdoor temperature is marked.
2. Press the OK button.
3. Follow the grey line up to the 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.

Cooling in 2-pipe system

In VVM 310 there is a built-in function for operating cooling in a 2-pipe installation down to 17 °C, factory setting 18 °C. This needs the heat pump to be able to perform cooling. (See the Installer Manual for your air/water heat pump.) If the heat pump can perform cooling, the cooling menus are activated in the display on the indoor module (VVM).

In order for operating mode “cooling” to be permitted, the average temperature must be above the setting value for “start cooling” in menu 4.9.2

The cooling settings for the climate system are adjusted in the indoor climate menu, menu 1.

> **CAUTION!**
>
> Hot water performance may be adversely affected if "Cooling in 2-pipe systems" is activated.

Setting hot water circulation

operating time
Setting range: 1 – 60 min

Factory setting: 60 min

downtime
Setting range: 0 – 60 min

Factory setting: 0 min

Set the hot water circulation for up to three periods per day here. During the set periods the hot water circulation pump will run according to the settings above.

"operating time" decide how long the hot water circulation pump must run per operating instance.

"downtime" decide how long the hot water circulation pump must be stationary between operating instances.

> **CAUTION!**
>
> Hot water circulation is activated in menu 5.4 "soft inputs and outputs".

SG Ready

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

Make settings for the function "SG Ready" here.

Low price mode means that the electricity supplier has a low tariff and the system uses this to reduce costs.

Over capacity mode means that the electricity supplier has set the tariff very low and the system uses this to reduce the costs as much as possible.

affect room temperature

Here you set whether room temperature should be affected when activating "SG Ready".

With low price mode on "SG Ready", the parallel offset for the indoor temperature is increased by "+1". If a room sensor is installed and activated, the desired room temperature is increased instead by 1 °C.

With overcapacity mode on "SG Ready", the parallel offset for the indoor temperature is increased by "+2". If a room sensor is installed and activated, the desired room temperature is increased instead by 2 °C.

affect hot water

Here you set whether the temperature of the hot water should be affected when activating "SG Ready".

With low price mode on "SG Ready" the stop temperature of the hot water is set as high as possible at only compressor operation (immersion heater not permitted).

With over capacity mode of "SG Ready" the hot water is set to "activate temp lux" (immersion heater permitted).

affect cooling (accessory required)

Here you set whether room temperature during cooling operation should be affected when activating "SG Ready".

With low price mode of "SG Ready" and cooling operation the indoor temperature is not affected.

With overcapacity mode on "SG Ready" and cooling operation, the parallel offset for the indoor temperature is decreased by "-1". If a room sensor is installed and activated, the desired room temperature is decreased instead by 1 °C.

> **CAUTION!**
>
> The function must be connected to two AUX inputs and activated in menu 5.4.

myUplink

With myUplink you can control the installation – where and when you want. In the event of any malfunction, you receive an alarm directly to your e-mail or a push notification to the myUplink app, which allows you to take prompt action.

The possibility to view the history and to make changes depends on the myUplink subscription. You can always view and subscribe on the myUplink website.

Visit myuplink.com for more information.

Update the system to the latest software version.

Specification

You need the following in order for myUplink to be able to communicate with VVM 310:

- network cable
- Internet connection
- account on myuplink.com

We recommend our mobile apps for myUplink.

Connection

To connect your system to myUplink:

1. Go to menu 4.1.3 - "internet".
2. Mark “request new connection string" and press the OK button.
3. When a connection string has been produced, it is shown in this menu and is valid for 60 minutes.
4. If you do not already have an account, register in the mobile app or on myuplink.com/sign-up.
5. Use the connection string to connect your installation to your user account on myUplink.

Range of services

myUplink gives you access to various levels of service. The basic level is included and, in addition to that, you can opt for additional subscriptions for a fee. Visit https://myuplink.com/store for more information.

myUplink PRO

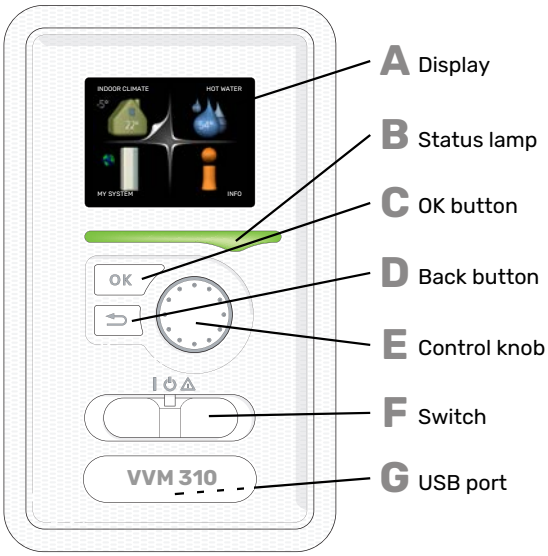
myUplink PRO is a complete tool for offering service agreements to the end customer and for always having the latest information about the installation, as well as the option to adjust settings remotely.

With myUplink PRO, you can provide your connected customers with rapid status and remote diagnostics.

Visit pro.myuplink.com for information about what else you can do using the mobile app and online.

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 indoor module. 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 indoor module. In this mode, the compressor switches off and the immersion heater engages. The indoor module display is not illuminated and the status lamp illuminates yellow.

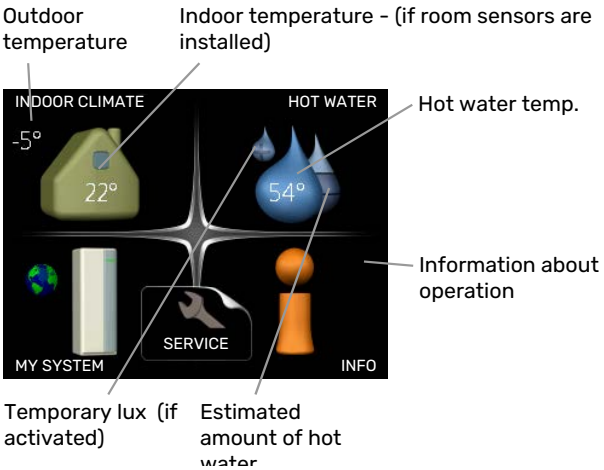
G **USB PORT**
The USB port is hidden beneath the plastic badge with the product name on it.

The USB port is used to update the software.

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

Menu system

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



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.

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 - MY SYSTEM
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 not available to the end user. The menu is visible when the Back button is pressed for 7 seconds, when you are in the start menu. See page 39.

SYMBOLS IN THE DISPLAY

The following symbols may appear on the display during operation.

Symbol	Description
	This symbol appears by the information sign if there is information in menu 3.1 that you should note.
	These two symbols indicate whether the compressor in the heat pump or additional heat is blocked in VVM 310. These can, for example, be blocked depending on which operating mode is selected in menu 4.2, if blocking is scheduled in menu 4.9.5 or if an alarm has occurred that blocks one of them. Blocking the compressor. Blocking additional heat.
	This symbol appears if periodic increase or lux mode for the hot water is activated.
	This symbol indicates whether "holiday setting" is active in 4.7.
	This symbol indicates whether VVM 310 has contact with myUplink.
	This symbol indicates the actual speed of the fan if the speed has changed from the normal setting. Accessory needed.
	This symbol is visible in installations with active solar accessories.
	This symbol indicates whether pool heating is active. Accessory needed.
	This symbol indicates whether cooling is active. Heat pump with cooling function required.

OPERATION

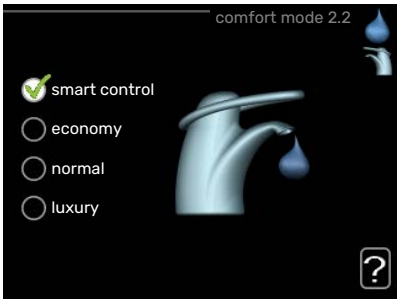
To move the cursor, turn the control knob to the left or the right. The marked position is white and/or has a turned up tab.

SELECTING MENU

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

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

SELECTING OPTIONS

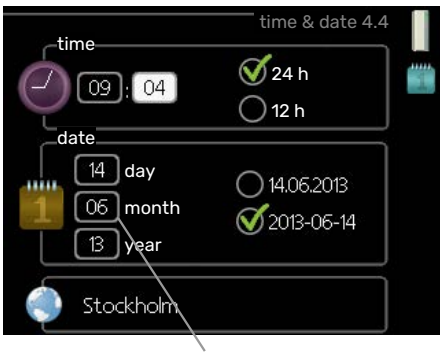


In an options menu the current selected option is indicated by a green tick.

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



Values to be changed

To set a value:

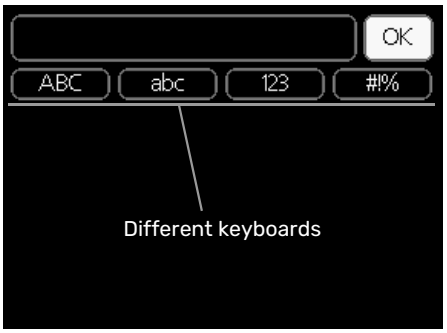
1. Mark the value you want to set using the control knob.

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.

USE THE VIRTUAL KEYBOARD



In some menus where text may require entering, a virtual keyboard is available.

Depending on the menu, you can gain access to different character sets which you can select using the control knob. To change character table, press the Back button. If a menu only has one character set the keyboard is displayed directly.

When you have finished writing, mark "OK" and press the OK 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.

Update the software

There are several ways to update the software for VVM 310. It is possible to do this via:

- myUplink and myUplink PRO
- menu 4.1.3 - "internet" with a myUplink PRO account
- The USB port

Control – Menus

Menu 1 - INDOOR CLIMATE

1 - INDOOR CLIMATE	1.1 - temperature	1.1.1 - heating	
		1.1.2 - cooling *	
		1.1.3 - rel. humidity *	
	1.2 - ventilation *		
	1.3 - scheduling	1.3.1 - heating	
		1.3.2 - cooling *	
		1.3.3 - ventilation *	
	1.9 - advanced	1.9.1 - curve	1.9.1.1 heating curve
			1.9.1.2 - cooling curve *
		1.9.2 - external adjustment	
		1.9.3 - min. flow line temp.	1.9.3.1 - heating
			1.9.3.2 - cooling *
		1.9.4 - room sensor settings	
		1.9.5 - cooling settings *	
		1.9.6 - fan return time *	
		1.9.7 - own curve	1.9.7.1 - heating
			1.9.7.2 - cooling *
		1.9.8 - point offset	
		1.9.9 - night cooling *	
		1.9.11 - +Adjust	

* Accessories are needed.

Menu 2 - HOT WATER

2 - HOT WATER	2.1 - temporary lux	
	2.2 - comfort mode	
	2.3 - scheduling	
	2.9 - advanced	2.9.2 - hot water recirc.

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
	3.6 - energy log

* Accessories are needed.

Menu 4 - MY SYSTEM

4 - MY SYSTEM	4.1 - plus functions	4.1.1 - pool *	
		4.1.3 - internet	4.1.3.1 - myUplink
			4.1.3.8 - tcp/ip settings
			4.1.3.9 - proxy settings
		4.1.4 - sms *	
		4.1.5 - SG Ready	
		4.1.6 - smart price adaption™	
		4.1.7 - smart home	
		4.1.8 - smart energy source™	4.1.8.1 - settings
			4.1.8.2 - set. price
			4.1.8.3 - CO2 impact
			4.1.8.4 - tariff periods, electricity
			4.1.8.6 - tariff per, ext. shunt add
			4.1.8.7 - tariff per, ext. step add
			4.1.8.8 - tariff periods, OPT10
		Menu 4.1.10 – solar electricity *	
	4.2 - op. mode		
	4.3 - my icons		
	4.4 - time & date		
	4.6 - language		
	4.7 - holiday setting		
	4.9 - advanced	4.9.1 - op. prioritisation	
		4.9.2 - auto mode setting	
		4.9.3 - degree minute setting	
		4.9.4 - factory setting user	
		4.9.5 - schedule blocking	
		4.9.6 - schedule silent mode	
		4.9.7 – tools	

* Accessory needed.

Descriptions of menu 1–4 can be found in the user handbook.

Menu 5 - SERVICE

OVERVIEW

5 - SERVICE	5.1 - operating settings	5.1.1 - hot water settings	
		5.1.2 - max flow line temperature	
		5.1.3 - max diff flow line temp.	
		5.1.4 - alarm actions	
		5.1.5 - fan sp. exhaust air *	
		5.1.10 - op. mod heat med pump	
		5.1.11 - pump speed heating medium	
		5.1.12 - internal electrical addition	
		5.1.14 - flow set. climate system	
		5.1.18 - flow setting charge pump	
		5.1.22 - heat pump testing	
		5.1.23 - compressor curve	
		5.1.25 - time filter alarm*	
	5.2 - system settings	5.2.2 - installed heat pump	
		5.2.4 - accessories	
	5.3 - accessory settings	5.3.2 - shunt controlled add. heat *	
		5.3.3 - extra climate system *	
		5.3.4 - solar heating *	
		5.3.7 - external addition *	
		5.3.11 - modbus *	
		5.3.12 - exhaust/supply air module *	
		5.3.14 - F135 *	
		5.3.16 - humidity sensor *	
		5.3.18 - pool*	
		5.3.19 - active cooling 4 pipe*	
		5.3.21 - flow sensor / energy meter*	
	5.4 - soft in/outputs		
	5.5 - factory setting service		
	5.6 - forced control		
	5.7 - start guide		
	5.8 - quick start		
	5.9 - floor drying function		
	5.10 - change log		
	5.11 -heat pump settings	5.11.1 - EB101	5.11.1.1 - heat pump
			5.11.1.2 - charge pump (GP12)
	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 indoor module.

system settings System settings for the indoor module, activating accessories etc.

accessory settings Operational settings for different accessories.

soft in/outputs Setting software-controlled inputs and outputs on input board (AA3).

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

forced control Forced control of the different components in the indoor module.

start guide Manual start of the start guide which is run the first time when the indoor module is started.

quick start Quick starting the compressor.

> **CAUTION!**
> Incorrect settings in the service menus can damage the installation.

MENU 5.1 - OPERATING SETTINGS

Operating settings can be made for the indoor module in the sub menus.

MENU 5.1.1 - HOT WATER SETTINGS

> **CAUTION!**
> The factory set tap water temperatures specified in the manual can vary due to the directives in force in different countries. From this menu, you can check the relevant settings for the system.

economy
Setting range start temp. economy: 5 – 55 °C

Factory setting start temp. economy: 46 °C

Setting range stop temp. economy: 5 – 60 °C

Factory setting stop temp. economy: 49 °C

normal
Setting range start temp. normal: 5 – 55 °C

Factory setting start temp. normal: 49 °C

Setting range stop temp. normal: 5 – 60 °C

Factory setting stop temp. normal: 52 °C

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

Factory setting start temp. lux: 55 °C

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

Factory setting stop temp. lux: 58 °C

Here you set the start and stop temperature of the hot water for the different comfort options in menu 2.2.

MENU 5.1.2 - MAX FLOW LINE TEMPERATURE

climate system
Setting range: 5-80 °C

Default value: 60 °C

Here, you set the maximum supply temperature for the climate system. If the installation has more than one climate system, individual maximum supply temperatures can be set for each system. Climate system 2 - 8 cannot be set to a higher max supply temperature than climate system 1.

> **NOTE!**
> For underfloor heating systems, max flow line temperature should normally be set to 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 in the event of compressor or additional heat mode respectively. Max diff. additional heat can never exceed max diff. compressor

max diff compressor

If the current supply temperature *exceeds* the calculated supply by set value, the degree minute value is set to +2. The compressor in the heat pump stops if there is only a heating demand.

max diff addition

If “addition” is selected and activated in menu 4.2 and the current supply temperature *exceeds* the calculated temperature by the set value, the additional heat is forced to stop.

MENU 5.1.4 - ALARM ACTIONS

Select if you want the indoor module to alert you that there is an alarm in the display here.

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

MENU 5.1.5 - FAN SP. EXHAUST AIR (ACCESSORY IS REQUIRED)

normal and speed 1-4

Setting range: 0 – 100 %

Factory setting normal: 65 %

Factory setting speed 1: 0 %

Factory setting speed 2: 30 %

Factory setting speed 3: 80 %

Factory setting speed 4: 100 %

Set the speed for the four different selectable modes for the fan here.

> NOTE!
>
> An incorrectly set ventilation flow can damage the property and may also increase energy consumption.

MENU 5.1.10 - OP. MOD HEAT MED PUMP

op. mode

Setting range: auto,

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 VVM 310.

MENU 5.1.11 - PUMP SPEED HEATING MEDIUM

speed in wait mode

Setting range: 1 - 100 %

Default values: 30 %

min. allowed speed

Setting range: 1 - 50%

Default values: 1 %

max. allowed speed

Setting range: 50 - 100 %

Default values: 100 %

speed active cooling (accessory is required)

Setting range: 1 - 100 %

Default values: 70 %

speed passive cooling (accessory is required)

Setting range: 1 - 100 %

Default values: 70 %

op. mode

Setting range: auto / manual

Default value: auto

auto: The heating medium pump’s speed is regulated for optimum operation.

manual: The speed of the heating medium pump can be set between 0 and 100 %.

If there are accessories for cooling present or if the heat pump has a built-in function for cooling you can also set the heating medium pump speed during active respectively cooling operating modes (the heating medium pump then runs in manual operation).

MENU 5.1.12 - INTERNAL ELECTRICAL ADDITION

max connected el. add.

Setting range: 0–12 kW

Default values: 8 kW

fuse size

Setting range: 1 - 400 A

Factory setting: 16 A

transformation ratio

Setting range: 300 - 3000

Factory setting: 300

Here you set the max. electrical output of the internal electrical addition in VVM 310 and the fuse size for the installation.

"detect phase order": Here, you check which current sensor is installed on which incoming phase to the property (this requires current sensors to be installed, see page 19). Check by selecting "detect phase order" and pressing the OK button.

The results of these checks appear just below the menu selection "detect phase order".

> **TIP!**
> Search again if the phase detection fails. The detection process is very sensitive and is easily affected by other appliances in the accommodation.

"transformation ratio": The transformer ratio can be changed to match different types of current sensor. The factory setting is adjusted according to the enclosed current sensors.

MENU 5.1.14 - FLOW SET. CLIMATE SYSTEM

presettings
Setting range: radiator, floor heat., rad. + floor heat., DOT °C

Default value: radiator

Setting range DOT: -40.0 – 20.0 °C

Factory setting DOT: -18.0 °C

own setting
Setting range dT at DOT: 2.0 – 20.0

Factory setting dT at DOT: 10.0

Setting range DOT: -40.0 – 20.0 °C

Factory setting DOT: -18.0 °C

The type of heating distribution system the heating medium pump (GP1) works towards is set here.

dT at DOT is the difference in degrees between flow and return temperatures at dimensioned outdoor temperature.

MENU 5.1.18 - FLOW SETTING CHARGE PUMP

Set the flow for the charge pump here. Activate the flow test to measure delta (the difference between the flow and return line temperatures from the heat pump). The test is OK if delta lies between the two parameters shown in the display.

If temperature difference lies outside the parameters, adjust the flow for the charge pump by reducing/increasing the pressure, until the test is OK.

MENU 5.1.22 - HEAT PUMP TESTING

> **CAUTION!**
> This menu is intended for testing VVM 310 according to different standards.
>
> Use of this menu for other reasons may result in your installation not functioning as intended.

This menu contains several sub-menus, one for each standard.

MENU 5.1.23 - COMPRESSOR CURVE

> **NOTE!**
> This menu is only displayed if VVM 310 is connected to a heat pump with inverter controlled compressor.

Set whether the compressor in the heat pump should work to a particular curve under specific requirements or if it should work to predefined curves.

You set a curve for a demand (heat, hot water etc.) by unticking "auto", turning the control knob until a temperature is marked and pressing OK. You can now set at what temperatures the max. and min. frequencies, respectively will occur.

This menu can consist of several windows (one for each available demand), use the navigation arrows in the top left corner to change between the windows.

MENU 5.1.25 - TIME FILTER ALARM

months btwn filter alarms
Setting range: 1 – 24

Factory setting: 3

Here you set the number of months between alarms for a reminder to clean the filter in a connected accessory.

MENU 5.2 - SYSTEM SETTINGS

Make different system settings for your installation here, e.g. activate the connected heat pump and which accessories are installed.

MENU 5.2.2 - INSTALLED HEAT PUMP

If an air/water heat pump is connected to the indoor module, activate it here.

MENU 5.2.4 - ACCESSORIES

Set which accessories are installed on the installation here.

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

search installed acc.

Mark “search installed acc." and press the OK button to automatically find connected accessories for VVM 310.

MENU 5.3 - ACCESSORY SETTINGS

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

MENU 5.3.2 - SHUNT CONTROLLED ADD. HEAT

prioritised additional heat
Setting range: on/off

Factory setting: off

start diff additional heat
Setting range: 0 – 2000 DM

Default values: 400 DM

minimum running time
Setting range: 0 – 48 h

Default value: 12 h

min temp.
Setting range: 5 – 90 °C

Default value: 55 °C

mixing valve amplifier
Setting range: 0.1 –10.0

Default value: 1.0

mixing valve step delay
Setting range: 10 – 300 s

Default values: 30 s

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

You can set shunt valve amplification and shunt valve waiting time.

Selecting "prioritised additional heat" uses the heat from the external additional heat instead of the heat pump. The shunt valve is regulated as long as heat is available, otherwise the shunt valve is closed.

TIP!

See the accessory installation instructions for function description.

MENU 5.3.3 - EXTRA CLIMATE SYSTEM

use in heating mode
Setting range: on/off

Factory setting: on

use in cooling mode
Setting range: on/off

Factory setting: off

mixing valve amplifier
Setting range: 0.1 – 10.0

Default value: 1.0

mixing valve step delay
Setting range: 10 – 300 s

Default values: 30 s

Contr. pump GP10
Setting range: on/off

Factory setting: off

Here, you select which climate system (2 - 8) you wish to set.

use in heating mode: If the heat pump is connected to a climate system(s) for cooling, any condensation can take place in this/these. Check that "use in heating mode" has been selected for the climate system(s) that is/are not adapted for cooling. This setting means that the sub-shunt for the extra climate system closes when cooling operation is activated.

use in cooling mode: Select "use in cooling mode" for climate systems that are adapted to handle cooling. For 2-pipe cooling you can select both "use in cooling mode" and "use in heating mode", while for 4-pipe cooling you can only select one option.

NOTE!

This setting option only appears if the heat pump is activated for cooling operation.

mixing valve amplifier, mixing valve step delay: Here, you set the shunt amplification and shunt waiting time for the various extra climate systems that are installed.

Contr. pump GP10: Here, you can set the speed of the circulation pump manually.

See the accessory installation instructions for function description.

MENU 5.3.4 - SOLAR HEATING

start delta-T
Setting range: 1 – 40 °C

Default value: 8 °C

stop delta-T
Setting range: 0 – 40 °C

Default value: 4 °C

max. tank temperature
Setting range: 70 – 85 °C

Default value: 85 °C

max. solar collector temp.
Setting range: 80 – 200 °C

Default value: 125 °C

max solar pool temperature
Setting range: 10 – 80 °C

Default value: 30 °C

anti-freeze temperature
Setting range: -20 – +20 °C

Default value: 2 °C

start solar collector cooling
Setting range: 80 – 200 °C

Default value: 110 °C

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

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

max solar pool temperature: Here, you can set the maximum temperature at which the solar panel stops pool heating (if the installation is structured in this way). Pool heating can only occur if there is a heat surplus once the heating and/or hot water demand is met.

If the unit has an anti-freeze function and/or solar panel cooling you can activate them here. When the function has been activated, you can make settings for them.

freeze protection

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

solar panel cooling

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

See the accessory installation instructions for function description.

MENU 5.3.7 - EXTERNAL ADDITION

Make settings for external addition here. External addition is for example external oil, gas or electric boiler.

If the external addition is not step controlled, in addition to selecting when this should start also set the run time for the addition.

If the external addition is step controlled you can select when the addition is to start, set the maximum number of permitted steps and whether binary stepping is to be used.

If you select "prioritised additional heat" the heat is used from the external addition instead of the heat pump.

See the accessory installation instructions for function description.

MENU 5.3.11 - MODBUS

address
Factory setting: address 1

word swap
Factory setting: not activated

As from Modbus 40 version 10, the address can be set between 1 - 247. Earlier versions have a fixed address (address 1).

Here, you can select if you want to have "word swap" instead of the preset standard "big endian".

See the accessory installation instructions for function description.

MENY 5.3.12 - EXHAUST/SUPPLY AIR MODULE

months btwn filter alarms
Setting range: 1 – 24

Default value: 3

lowest extract air temp.
Setting range: 0 – 10 °C

Default value: 5 °C

bypass at excess temperature
Setting range: 2 – 10 °C

Default value: 4 °C

bypass during heating
Setting range: on/off

Factory setting: off

cut-out val. exh. air temp.
Setting range: 5 – 30 °C

Default value: 25 °C

product
Setting range: ERS S10, ERS 20/ERS 30

Factory setting: ERS 20 / ERS 30

action level monitor
Setting range: off, blocked, level monitor

Default value: level monitor

months btwn filter alarms: Set how often the filter alarm is to be displayed.

lowest extract air temp.: Set the minimum extract air temperature to prevent the build-up of ice on the heat exchanger. The supply air fan speed reduces, if the extract air temperature (BT21) is lower than the set value.

bypass at excess temperature: If a room sensor is installed, you set the over-temperature at which the bypass damper (QN37) will open here.

bypass during heating: Activate whether the bypass damper (QN37) will also be allowed to open during heat production.

cut-out val. exh. air temp.: If no room sensor is installed, you set the exhaust air temperature at which the bypass damper (QN37) will open here.

product: Here, you set which ERS model is installed.

action level monitor: If "level monitor" is selected, the product issues an alert and the fans stop when the input closes. If "blocked" is selected, text in operating info shows that the input is closed. The fans stop until the input is open.

TIP!

See the installation instructions for ERS and HTS for a function description.

MENU 5.3.14 - F135

charge pump speed
Setting range: 1 – 100 %

Factory setting: 70 %

hot water at cooling
Setting range: on/off

Factory setting: off

Here you can set the charge pump speed for F135. You can also choose to charge hot water with F135 at the same time as the heat pump is producing cooling.

NOTE!

It is necessary for “active cooling 4 pipe” to be selected in either “accessories” or “soft in/outputs” to enable activation of “hot water during cooling”. The heat pump must also be activated for cooling operation.

MENU 5.3.16 - HUMIDITY SENSOR

climate system 1 HTS
Setting range: 1–4

Default value: 1

limit RH in the room, syst.
Setting range: on/off

Factory setting: off

prevent condensation, syst.
Setting range: on/off

Factory setting: off

limit RH in the room, syst.
Setting range: on/off

Factory setting: off

Up to four humidity sensors (HTS 40) can be installed.

Here you select whether your system(s) is/are to limit the relative humidity level (RH) during heating or cooling operation.

You can also choose to limit min. cooling supply and calculated cooling supply to prevent condensation on pipes and components in the cooling system.

See the Installer Manual for HTS 40 for function description.

MENU 5.3.18 - POOL

Here you select which pump to use in the system.

MENU 5.3.19 - ACTIVE COOLING 4 PIPE

Here you select which pump to use in the system.

MENU 5.3.21 - FLOW SENSOR / ENERGY METER

Flow sensor

set mode
Setting range: EMK150 / EMK300 / EMK500

Factory setting: EMK150

energy per pulse
Setting range: 0 – 10000 Wh

Factory setting: 1000 Wh

pulses per kWh
Setting range: 1 – 10000

Factory setting: 500

Energy meter

set mode
Setting range: energy per pulse / pulses per kWh

Default value: energy per pulse

energy per pulse
Setting range: 0 – 10000 Wh

Factory setting: 1000 Wh

pulses per kWh
Setting range: 1 – 10000

Factory setting: 500

Up to two flow sensors (EMK) / energy meters can be connected on the input board AA3, terminal block X22 and X23. Select these in menu 5.2.4 - accessories.

Flow sensor (Energy measurement kit EMK)

A flow sensor (EMK) is used to measure the amount of energy produced and supplied by the heating installation for hot water and heating in the property.

The function of the flow sensor is to measure flow and temperature differences in the charge circuit. The value is presented in the display on a compatible product.

Starting from software version 9085 , you can select the flow sensor (EMK) you have connected in the system.

energy per pulse: Here you set the amount of energy to which each pulse will correspond.

pulses per kWh: Here you set the number of pulses per kWh that are sent to VVM 310.

Energy meter (Electricity meter)

The energy meter(s) is used to send pulse signals every time a certain amount of energy has been consumed.

energy per pulse: Here you set the amount of energy to which each pulse will correspond.

pulses per kWh: Here you set the number of pulses per kWh that are sent to VVM 310.

MENU 5.4 - SOFT IN/OUTPUTS

Here, you can select which input/output on the input board (AA3) the external contact function (page 20) will be connected to.

Selectable inputs on terminal block AUX 1-5 (AA3-X6:9-18) and output AA3-X7 on the input board.

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 indoor module is restarted.

MENU 5.6 - FORCED CONTROL

You can force control the different components in the indoor module and any connected accessories here.

CAUTION!

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 indoor module is started for the first time the start guide starts automatically. Start it manually here.

See page 26 for more information about the start guide.

MENU 5.8 - QUICK START

It is possible to start the compressor from here.

NOTE!

There must be a heating, cooling 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 could damage the compressor and its surrounding equipment.

MENU 5.9 - FLOOR DRYING FUNCTION

length of period 1 – 7
Setting range: 0 – 30 days

Factory setting, period 1 – 3, 5 – 7: 2 days

Factory setting, period 4: 3 days

temp. period 1 – 7
Setting range: 15 – 70 °C

Default value:

temp. period 1	20 °C
temp. period 2	30 °C
temp. period 3	40 °C
temp. period 4	45 C
temp. period 5	40 °C
temp. period 6	30 °C
temp. period 7	20 °C

Set the function for under floor drying here.

You can set up to seven time periods with different calculated supply temperatures. If fewer than seven periods are to be used, set the remaining periods to 0 days.

Mark the active window to activate the underfloor drying function. A counter at the bottom shows the number of days the function has been active.

CAUTION!

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

TIP!

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

TIP!

It is possible to save a floor drying log that shows when the concrete slab has reached the correct temperature. See section "Logging floor drying" on page 50.

MENU 5.10 - CHANGE LOG

Read off any previous changes to the control system here.

The date, time, ID no. (unique to particular setting) and the new set value are shown for every change.

NOTE!

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

MENU 5.11 - HEAT PUMP SETTINGS

Settings for installed heat pump can be made in the sub-menus.

MENU 5.11.1 - EB101

Make settings specifically for the installed heat pump and charge pump here.

MENU 5.11.1.1 - HEAT PUMP

Make settings for the installed heat pump here. To see what settings you can make, see the installation manual for the heat pump.

MENU 5.11.1.2 - CHARGE PUMP (GP12)

op. mode
Setting range: auto / intermittent

Default value: auto

Set the operating mode for the charge pump here.

auto: The charge pump runs according to the current operating mode for VVM 310.

intermittent: The charge pump starts and stops 20 seconds before, and after, the compressor in the heat pump.

speed during operation
heating, hot water, pool, cooling

Setting range: auto / manual

Default value: auto

Manual setting

Setting range: 1–100 %

Default values: 70 %

min. allowed speed
Setting range: 1–100 %

Default values: 1 %

speed in wait mode
Setting range: 1–100 %

Default values: 30 %

max. allowed speed
Setting range: 80–100 %

Default values: 100 %

Set the speed at which the charge pump is to operate in the present operating mode. Select "auto" if the speed of the charge pump is to be regulated automatically (factory setting) for optimal operation.

If "auto" is activated for heating operation, you can also make the setting "min. allowed speed" and "max. allowed speed", which restricts the charge pump and prevents it from running at a lower or higher speed than the set value.

For manual operation of the charge pump, deactivate "auto" for the current operating mode and set the value to between 1 and 100% (the previously set value for "max. allowed speed" and "min. allowed speed" no longer applies).

Speed in wait mode (only used if "auto" has been selected for "Operating mode") means the charge pump operates at the set speed during the time when neither compressor operation nor additional heat are required.

5.12 - COUNTRY

Select here the country in which 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, after restarting the display and during program updating.

Service

Service actions

> **CAUTION!**
> Servicing should only be carried out by persons with the necessary expertise.
>
> When replacing components on VVM 310 only replacement parts from NIBE may be used.

EMERGENCY MODE

Emergency mode is used in event of operational interference and in conjunction with service. Hot water capacity is reduced in this 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 by the immersion heater is controlled by the thermostat (FQ10-BT30). It can be set to 35 or 45 °C.
- Only the circulation pumps and electric additional heat are active. The electrical additional heat power in emergency mode is set in the immersion heater board (AA1). See page 19 for instructions.

EMPTYING THE HOT WATER COIL

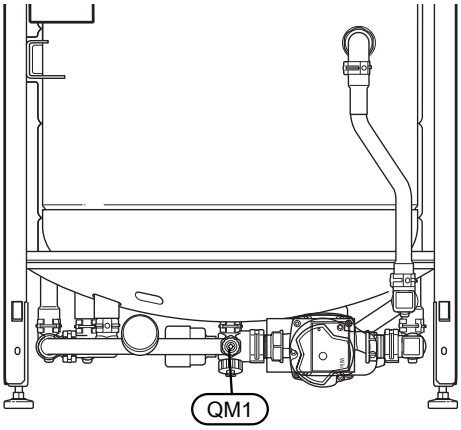
The hot water coil is drained by loosening the cold water connection.

> **CAUTION!**
> There may be some hot water, risk of scalding.

DRAINING THE CLIMATE SYSTEM

In order to carry out service on the climate system, it may be easier to drain the system first. This is performed through the draining valve (QM1).

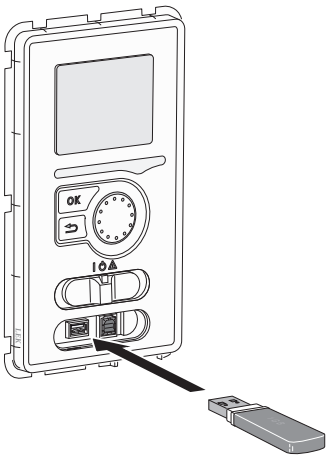
> **CAUTION!**
> There may be some hot water when draining the heating medium side/climate system. There is a risk of scalding.



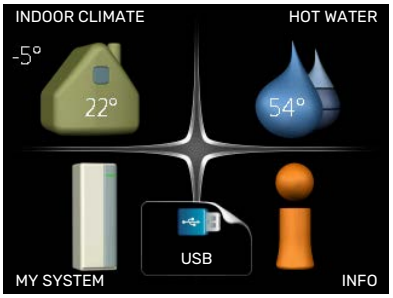
TEMPERATURE SENSOR DATA

Temperature (°C)	Resistance (kOhm)	Voltage (VDC)
-10	56.20	3.047
0	33.02	2.889
10	20.02	2.673
20	12.51	2.399
30	8.045	2.083
40	5.306	1.752
50	3.583	1.426
60	2.467	1.136
70	1.739	0.891
80	1.246	0.691

USB SERVICE OUTLET

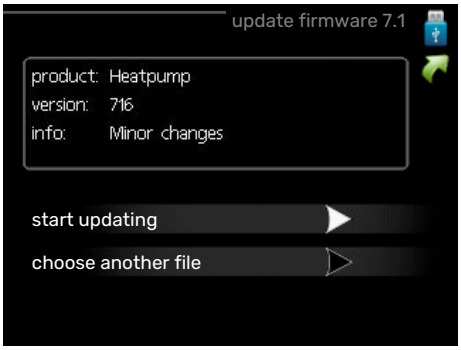


The display unit is equipped with a USB socket that can be used to update the software and save logged information in VVM 310.



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

Menu 7.1 - update firmware



Here, you can update the software in VVM 310.

> **CAUTION!**
> For the following functions to work the USB memory must contain files with software for VVM 310 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 the product for which the software is intended, the software version and general information about it. If you want a file other than the one selected, the correct file can be selected through "choose another file".

start updating

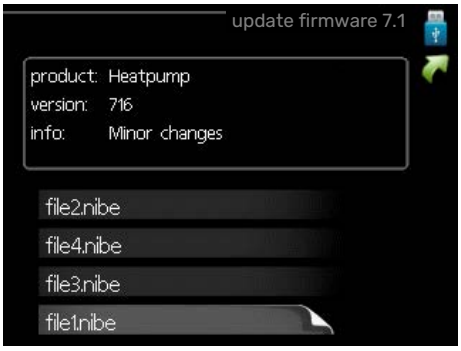
Select “start updating" if you want to start the update. You are asked whether you really want to update the software. Respond "yes" to continue or "no" to undo.

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 VVM 310 restarts.

> **TIP!**
> A software update does not reset the menu settings in VVM 310.

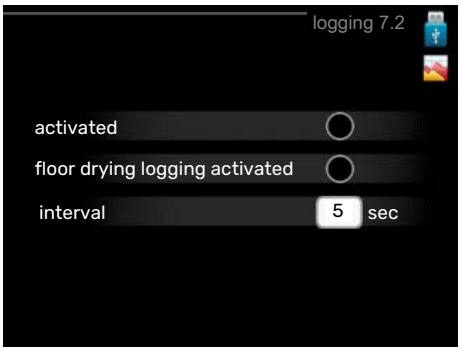
> **NOTE!**
> If the update is interrupted before it is complete (for example, by a power cut), the software can be reset to the previous version if the OK button is held in during start-up until the green lamp comes on (takes about 10 seconds).

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 VVM 310 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 VVM 310 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.

Logging floor drying

Here you can save a floor drying log on the USB memory and in this way see when the concrete slab reached the correct temperature.

- Make sure that "floor drying function" is activated in menu 5.9.
- Select "logging floor drying activated".
- A log file is now created, where the temperature and the immersion heater output can be read off. Logging continues until "logging floor drying activated" is deselected or until "floor drying function" is stopped.

NOTE!

Deselect "logging floor drying activated" before you remove the USB memory.

Menu 7.3 - manage settings

save settings
Setting option: on/off

recover settings
Setting option: on/off

In this menu, you save/upload menu settings to/from a USB memory stick.

save settings: Here, you save menu settings in order to restore them later or to copy the settings to another VVM 310.

NOTE!

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

recover settings: Here, you upload all menu settings from the USB memory stick.

NOTE!

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

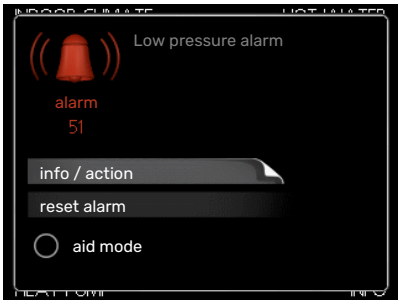
Disturbances in comfort

In most cases, the VVM 310 notes a malfunction and indicates this with alarms and presents action instructions in the display.

Info-menu

All the installation's measurement values are gathered under menu 3.1 in the indoor module's menu system. Examining the values in this menu can often make it easier to identify the source of the fault.

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 indoor module cannot remedy itself. By turning the control knob and pressing the OK button, you can see in the display what type of alarm it is and reset it. You can also choose to set the indoor module 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 many cases, it is sufficient to select "reset alarm" for the product to revert to normal operation. If a green light comes on after selecting "reset alarm", the alarm has been remedied. If the red light is still on, and a menu called "alarm" is visible in the display, the problem causing the alarm still remains.

aid mode "aid mode" is a type of emergency mode. This means that the indoor module produces heat and/or hot water, even though there is some kind of problem. This could mean that the heat pump's compressor is not in operation. 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.

> NOTE!
> 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 building.
- The building's earth circuit breaker.
- Miniature circuit-breaker for VVM 310 (FC1).
- Temperature limiter for VVM 310 (FQ10).
- Correctly set load monitor.

Low hot water temperature or a lack of hot water

- Closed or throttled externally mounted filling valve for the hot water.
  - Open the valve.
- Mixing valve (if there is one installed) set too low.
  - Adjust the mixer valve.
- VVM 310 in incorrect operating mode.
  - Enter menu 4.2. If mode "auto" is selected, select a higher value on "stop additional heat" in menu 4.9.2.
  - If mode "manual" is selected, select "addition".
  - Hot water is produced with VVM 310 in "manual" mode. If there is no air/water heat pump, "addition" must be activated.
- 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 high domestic water flow.
  - Reduce the domestic water flow, see technical specifications for the hot water capacity in the "Technical specifications" section.
- Too low hot water setting.
  - Enter menu 2.2 - "comfort mode" and select a higher comfort mode.
- Low hot water availability with "Smart control" activated.

- If the hot water usage has been low, less hot water than normal will be produced. Restart the product.

- 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. Note that if the time for hot water is increased, the time for heating production is reduced, which can give lower/uneven room temperatures.
- "Holiday mode" activated in menu 4.7.
  - Enter menu 4.7 and select "Off".

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.

    See the "Saving tips" section in the User manual for more detailed information about how to best set the thermostats.
- VVM 310 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" may need to be adjusted upwards.
- Too low or no operating prioritisation of heat.
  - Enter menu 4.9.1 and increase the time for when heating is to be prioritised. Note that if the time for heating is increased the time for hot water production is reduced, which can give smaller amounts of hot water.
- "Holiday mode" activated in menu 4.7.
  - Enter menu 4.7 and select "Off".
- External switch for changing room temperature activated.
  - Check any external switches.
- Air in the climate system.
  - Vent the climate system (see page 25).
- Closed valves to the climate system.
  - Open the valves.

High room temperature

- Too high set value on the automatic heating control.
  - Enter menu 1.1 - "temperature" and 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" may need to be adjusted downwards.
- External switch for changing room temperature activated.
  - Check any external switches.

Low system pressure

- Not enough water in the climate system.
  - Fill the climate system with water and check for leaks (see page 25).

The air/water heat pump's compressor does not start

- There is no heating or hot water demand, nor cooling demand (accessory is required for cooling).
  - VVM 310 does not call on heating, hot water or cooling.
- Compressor blocked due to the temperature conditions.
  - Wait until the temperature is within the product's working range.
- Minimum time between compressor starts has not been reached.
  - Wait for at least 30 minutes and then check if the compressor has started.
- Alarm tripped.
  - Follow the display instructions.

Electrical addition only

If you are unsuccessful in rectifying the fault and are unable to heat the property, you can, whilst waiting for assistance, continue running the installation in "add. heat only". This means that additional heat only is used to heat the property.

SET THE INSTALLATION TO ADDITIONAL HEAT MODE

1. Go to menu 4.2 op. mode.
2. Mark "add. heat only" using the control knob and then press the OK button.
3. Return to the main menus by pressing the Back button.

Accessories

Detailed information about the accessories and complete accessories list available at nibe.eu.

Not all accessories are available on all markets.

ACTIVE COOLING ACS 310[1]

ACS 310 is an accessory that enables VVM 310 to control the production of cooling in a 4-pipe system.

Part no. 067 248

[1] The accessory requires that a NIBE air/water heat pump is installed.

DOCKING KIT DEH

DEH 310

Docking kit, oil/electricity/gas.

Part no. 067 249

DOCKING KIT SCA 35

SCA 35 means that VVM 310 can be connected to thermal solar heating.

Part no. 067 245

ENERGY MEASUREMENT KIT EMK 300

This accessory is installed externally and used to measure the amount of energy that is supplied for the pool/hot water/heating/cooling for the property.

Part no. 067 314

EXTERNAL ELECTRIC ADDITIONAL HEAT ELK

This accessory requires accessory board AXC 40 (step controlled additional heat) or accessory DEH 310 (step controlled additional heat).

ELK 15

15 kW, 3 x 400 V
Part no. 069 022

ELK 213

7–13 kW, 3 x 400 V
Part no. 069 500

EXTRA SHUNT GROUP ECS

This accessory is used when VVM 310 is installed in a property with two or more climate systems that require different supply temperatures.

ECS 40

Max 80 m²

Part no 067 287

ECS 41

Approx. 80-250 m²

Part no 067 288

HUMIDITY AND TEMPERATURE SENSOR HTS 40

This accessory is used to show and regulate humidity and temperatures during both heating and cooling operation.

Part no. 067 538

HRV UNIT ERS

This accessory is used to supply the dwelling with energy that has been recovered from the ventilation air. The unit ventilates the property and heats the supply air as necessary.

ERS S10-400[1]

Part no. 066 163

ERS 30-400[1]

Part no. 066 165

[1] A preheater may be required.

POOL HEATING POOL 310[1]

POOL 310 is an accessory that enables pool heating with VVM 310.

Part no. 067 247

[1] The accessory requires that a NIBE air/water heat pump is installed.

ROOM UNIT RMU 40

The room unit is an accessory with a built-in room temperature sensor, which allows the control and monitoring of VVM 310 to be carried out in a different part of the property to where it is located.

Part no 067 064

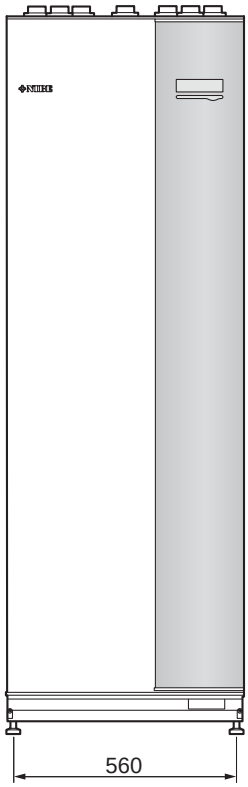
ACCESSORY CARD AXC 40

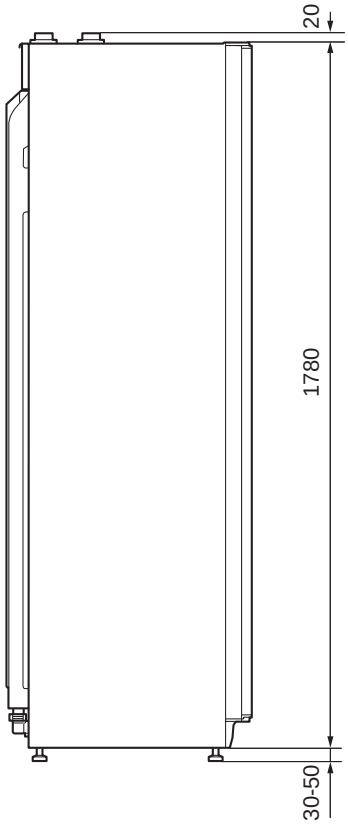
This accessory is used to enable connection and control of shunt-controlled additional heat, step-controlled additional heat or external circulation pump.

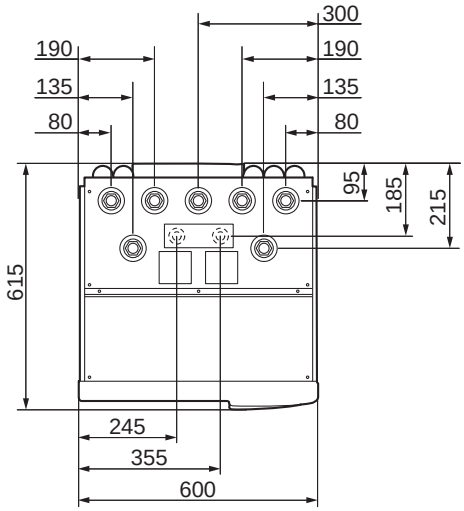
Part no. 067 060

Technical data

Dimensions







Technical specifications

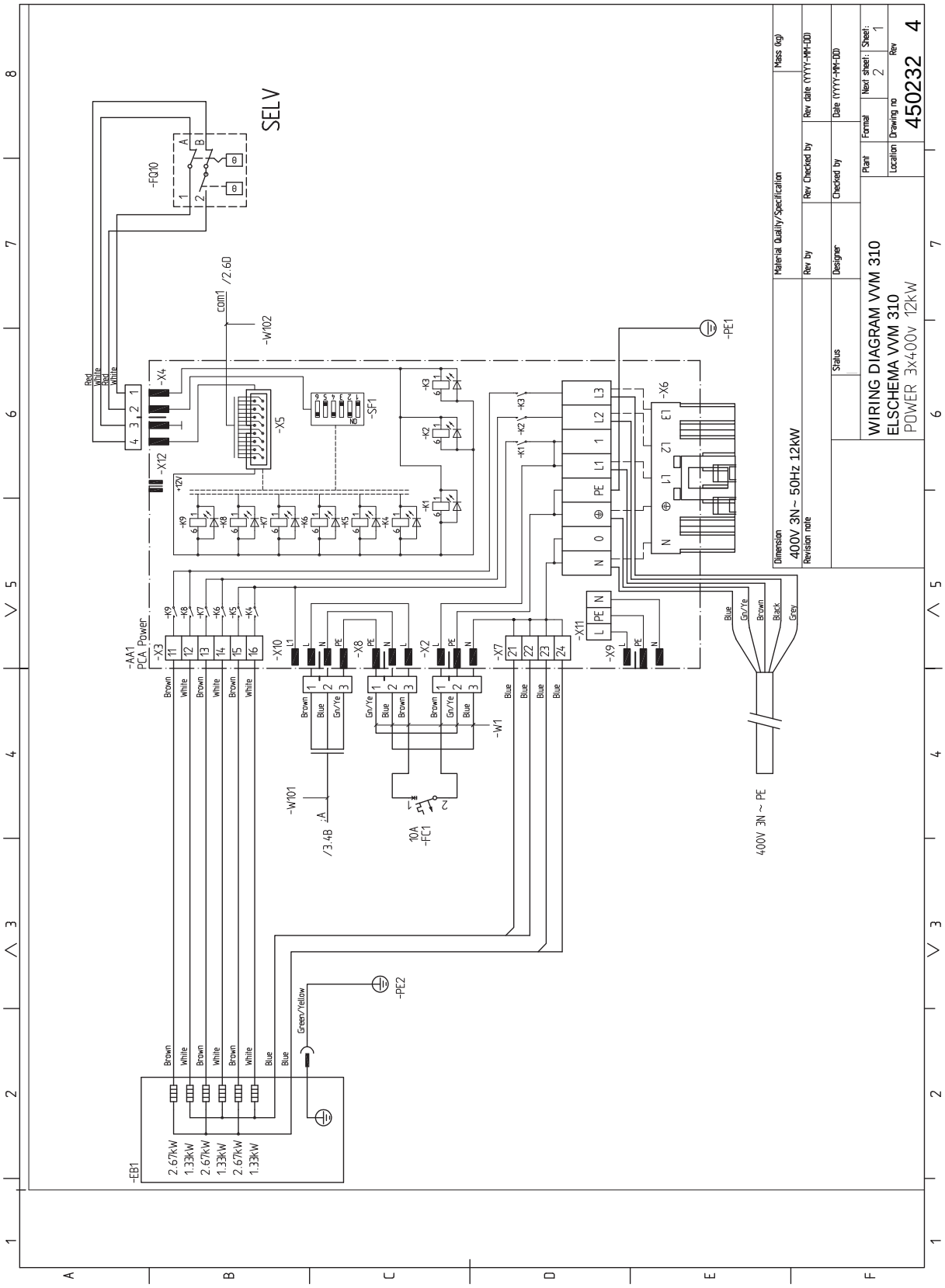
3 x 400 V		
Electrical data		
Maximum additional power (internal)	kW	12
Max available heating output from VVM 310 with extra additional heat (for example ELK 15)	kW	27
Maximum connectable external additional heat	kW	15
Rated voltage		400V 3N~50Hz
Maximum operating current	A	19.4
Fuse	A	20
Output, Heating medium pump	W	3 – 45
Output, charge pump	W	1 – 93
Enclosure class		IPX1B
Residual current device (RCD), type		A
Heating medium circuit		
Energy class circ-pump		low energy
Energy class charge pump		low energy
Maximum system pressure heating medium	MPa	0.3 (3 bar)
Max HM temp	°C	70
Pipe connections		
Heating medium		G20 int.
Hot water connection		G20 int.
Cold water connection		G20 int.
Heat pump connections		G20 int.
Connection for expansion vessel		G20 int.

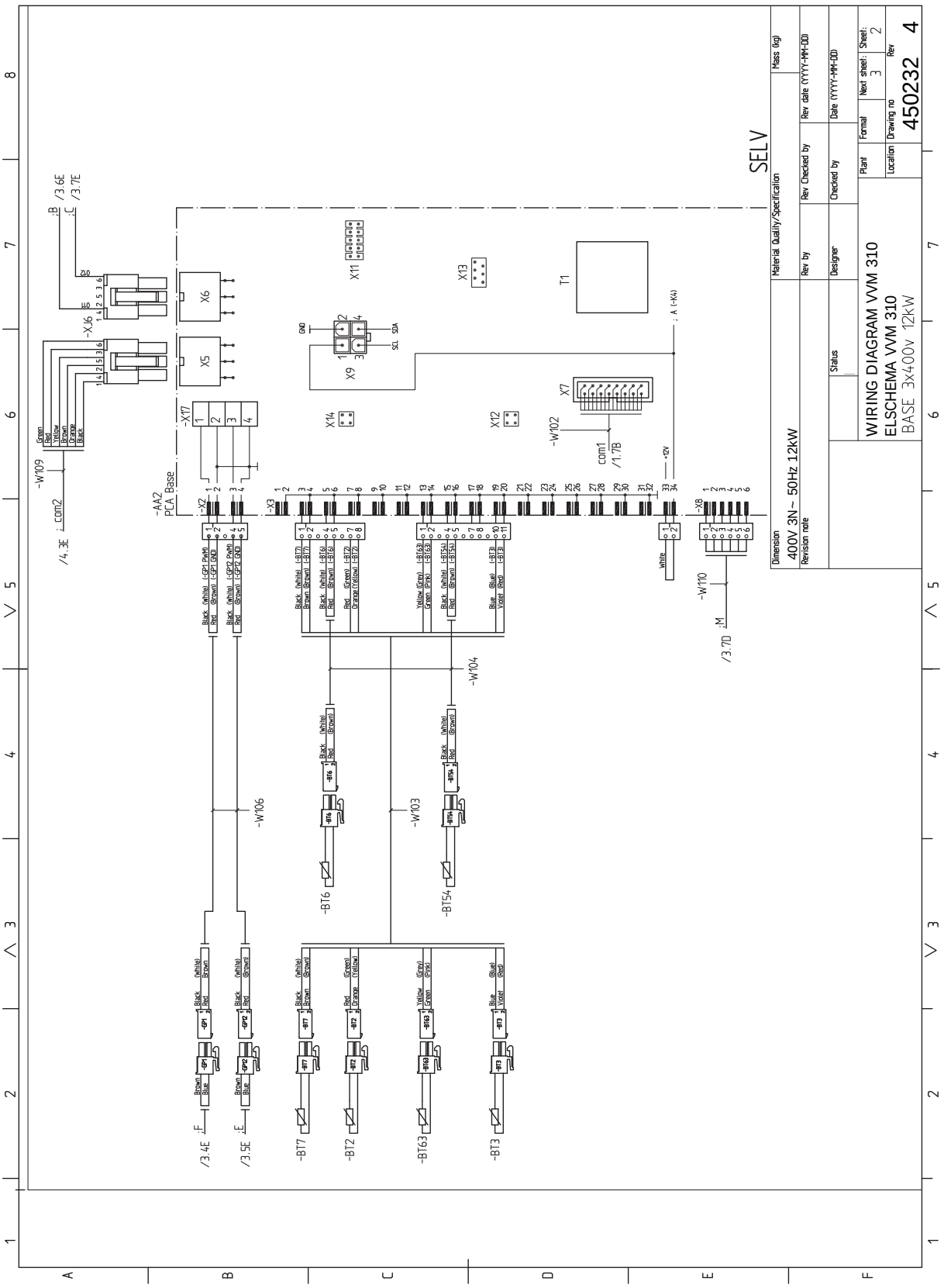
Miscellaneous		
Indoor module		
Volume hot water coil	litre	17
Volume, total indoor module	litre	270
Volume buffer vessel	litre	50
Cut-off pressure, hot water coil	MPa (bar)	1.0 (10 bar)
Max permitted pressure in indoor module	MPa (bar)	0.3 (3 bar)
Capacity hot water heating According to EN 16147		
Amount of hot water (40 °C)*	litre	270
Dimensions and weight		
Width	mm	600
Depth	mm	615
Height (without base)	mm	1,800
Height (with base)	mm	1,830 – 1,850
Required ceiling height	mm	1,910
Weight (excl. packaging and without water)	kg	144
Part no.		
Part number, EMK 310 included (only for Germany, Switzerland and Austria)		069 084
Part no.		069 430

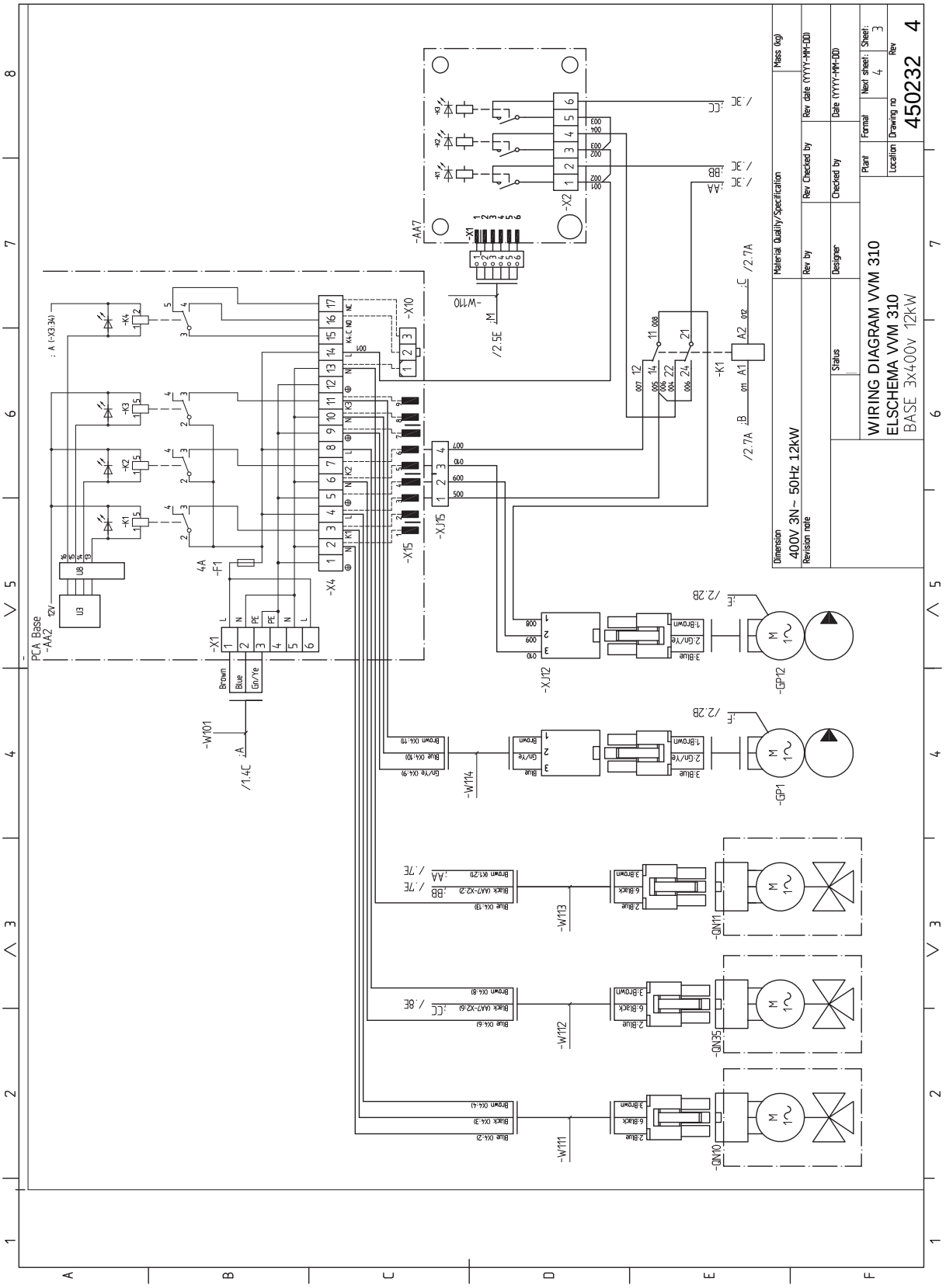
*Applies in the case of Lux comfort mode, tap flow 8 litres/minute and incoming cold water 10° C. Increased hot water comfort can be obtained at lower tap flow.

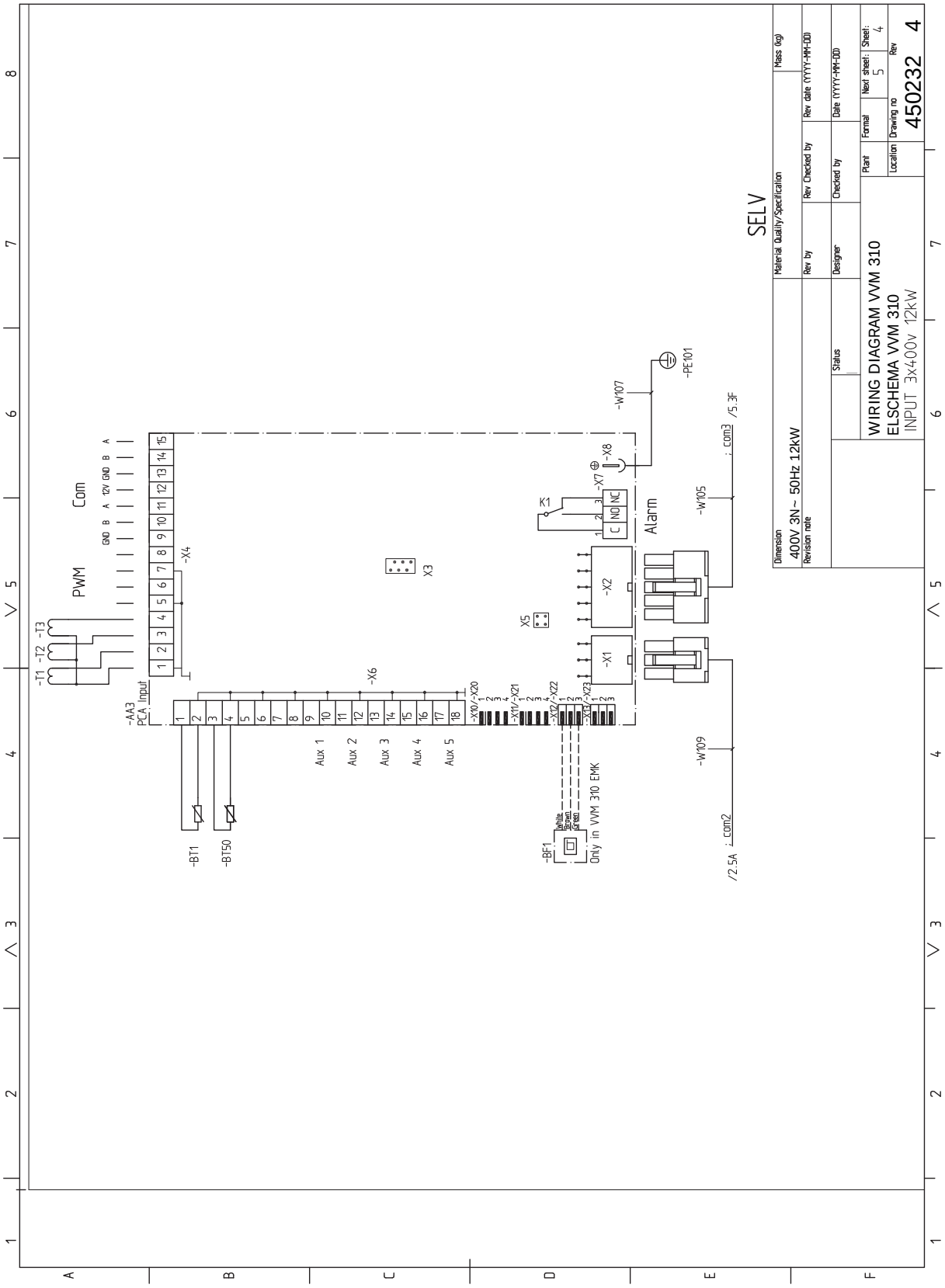
Electrical circuit diagram

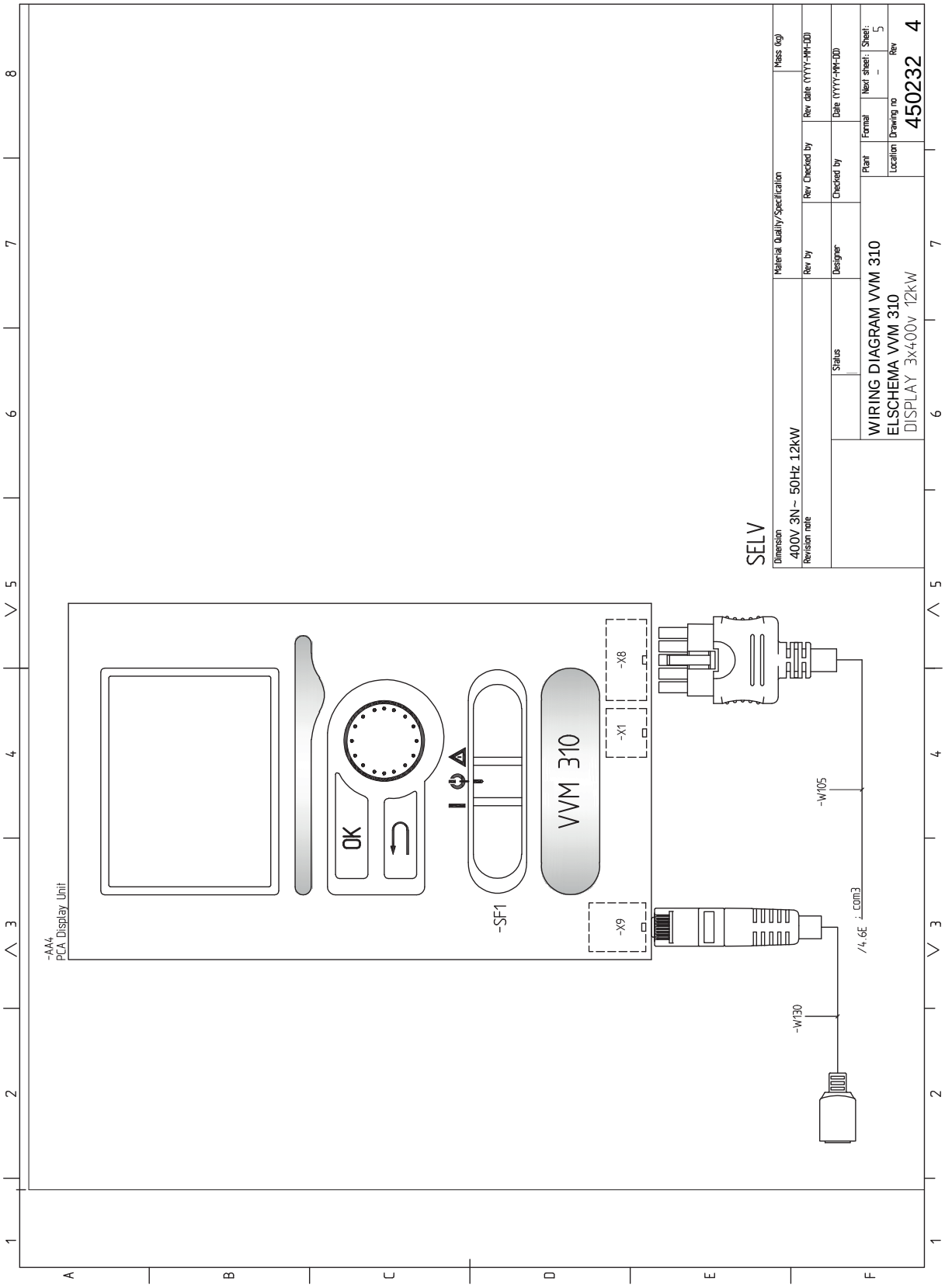
3 X 400 V




WIRING DIAGRAM VVM 310
ELSCHEMA VVM 310
BASE 3x400v 12kW
SELV
400V 3N~ 50Hz 12kW
450232 4
-AA2
PCA Base
-X1
-X2
-X3
-X6
-X7
-X8
-X9
-X11
-X12
-X13
-X14
-X17
-XJ6
-W102
-W103
-W104
-W106
-W109
-W110
-BT6
-BT54
-BT7
-BT2
-BT63
-BT3
T1


WIRING DIAGRAM VVM 310
ELSCHEMA VVM 310
BASE 3x400v 12kW
450232 4
400V 3N~ 50Hz 12kW
PCA Base
-AA2
-AA7
-X1
-X2
-X4
-X10
-X12
-X15
-X15
-K1
-K2
-K3
-K4
-F1
-GP1
-GP12
-QN10
-QN11
-QN35
-W101
-W110
-W111
-W112
-W113
-W114


SELV
WIRING DIAGRAM VVM 310
ELSCHEMA VVM 310
INPUT 3x400v 12kW
450232 4
Dimension
400V 3N~ 50Hz 12kW
Material Quality/Specification
Revision note
Rev by
Rev Checked by
Rev date (YYYY-MM-DD)
Mass (kg)
Status
Designer
Checked by
Date (YYYY-MM-DD)
Plant
Format
Next sheet:
Sheet:
Location
Drawing no
Rev
PWM
Com
Alarm
Aux 1
Aux 2
Aux 3
Aux 4
Aux 5
Only in VVM 310 EMK
-AA3
PCA Input
-BT1
-BT50
-BF1
-X1
-X2
-X3
-X4
-X5
-X6
-X7
-X8
K1
-W107
-W105
-W109
-PE101
/5.3F
/2.5A
; com3
; com2


-AA4
PCA Display Unit
OK
-SF1
VVM 310
-X8
-X1
-X9
-W105
-W130
/4.6E ; com3
SELV
Dimension
400V 3N~ 50Hz 12kW
Revision note
Material Quality/Specification
Rev by
Rev Checked by
Rev date (YYYY-MM-DD)
Mass (kg)
Status
Designer
Checked by
Date (YYYY-MM-DD)
WIRING DIAGRAM VVM 310
ELSCHEMA VVM 310
DISPLAY 3x400v 12kW
Plant
Format
Next sheet:
Sheet:
5
Location
Drawing no
450232 4
Rev

Item register

A

Accessibility, electrical connection, 16
Accessories, 53
Alarm, 51
Assembly, 6

B

Back button, 32

C

Cable lock, 17
Climate system, 13
Cold and hot water, 14
  Connecting cold and hot water, 14
Commissioning and adjusting, 25
  Commissioning without heat pump, 27
  Filling and venting, 25
  Preparations, 25
  Setting hot water circulation, 29
  SG Ready, 29
  Start guide, 26
  Start-up and inspection, 26
Commissioning without heat pump, 27
Connecting accessories, 24
Connecting current sensors, 19
Connecting external operating voltage for the control system, 17
Connecting hot water circulation, 14
Connecting the climate system, 13
Connecting to air/water heat pump, 13
Connections, 17
Control, 32, 36
  Control - Introduction, 32
  Control - Menus, 36
Control - Introduction, 32
  Display unit, 32
  Menu system, 32
Control knob, 32
Control - Menus, 36
  Menu 5 - SERVICE, 39
Cooling mode indication, 22

D

Delivery and handling, 6
  Assembly, 6
  Installation area, 6
  Removing panels, 7
  Supplied components, 6
  Transport, 6
Dimensions and pipe connections, 12
Dimensions and setting-out coordinates, 54
Display, 32
Display unit, 32
  Back button, 32
  Control knob, 32
  Display, 32
  OK button, 32
  Status lamp, 32
  Switch, 32
Disturbances in comfort, 51
  Alarm, 51
  Manage alarm, 51
  Only additional heat, 52
  Troubleshooting, 51
Docking alternatives
  Two or more climate systems, 14
Draining the climate system, 48
Draining the hot water heater, 48

E

Electrical addition - maximum output, 18
  Power steps of the immersion heater, 18
Electrical circuit diagram, 56
Electrical connections, 15, 18
  Accessibility, electrical connection, 16
  Cable lock, 17
  Communication, 18
  Connecting accessories, 24
  Connecting external operating voltage for the control system, 17
  Connections, 17
  Electrical addition - maximum output, 18
  External connection options (AUX), 20
  External supply temperature sensor, 18
  Load monitor, 19
  myUplink, 20
  Optional connections, 19
  Outdoor sensor, 17
  Power connection, 17
  Removing the cover, base board, 16
  Removing the cover, immersion heater circuit board, 16
  Removing the hatch, input circuit board, 16
  Room sensor, 18
  Settings, 18
  Tariff control, 17
  Temperature limiter, 16
External connection options (AUX), 20
  Cooling mode indication, 22
  Extra circulation pump, 22
  Hot water circulation, 22
  Optional selection for AUX output (potential-free variable relay), 22
External supply temperature sensor, 18
Extra circulation pump, 22

F

Filling and venting, 25
  Filling the climate system, 25
  Filling the hot water coil, 25
  Venting the climate system, 25
Filling the climate system, 25
Filling the hot water coil, 25

H

Help menu, 35
Hot water circulation, 22

I

Important information, 4
  Inspection of the installation, 5
  Marking, 4
  Recovery, 5
  Safety information, 4
  Symbols, 4
  System solutions, 5
Indoor module's design, 8
  Component locations, 8
Initial pressure, 10
Inspection of the installation, 5

Installation alternative, 14
Connecting hot water circulation, 14
Water heater with immersion heater, 14
Installation area, 6

M

Manage alarm, 51
Marking, 4
Menu 5 - SERVICE, 39
Menu system, 32
Help menu, 35
Operation, 34
Scroll through the windows, 35
Selecting menu, 34
Selecting options, 34
Setting a value, 34
Use the virtual keyboard, 35
myUplink, 20

O

OK button, 32
Only additional heat, 52
Operation, 34
Optional connections, 19
Possible selections for AUX inputs, 21
Outdoor sensor, 17

P

Pipe and ventilation connections
Climate system, 13
Connecting the climate system, 13
Pipe connections, 10
Cold and hot water
Connecting cold and hot water, 14
Connecting to air/water heat pump, 13
Dimensions and pipe connections, 12
General pipe connections, 10
Installation alternative, 14
Symbol key, 11
System diagram, 11
System volume, 10
Use without heat pump, 13
Possible selection for AUX inputs, 21
Possible selection for AUX output (potential free variable relay), 22
Power connection, 17
Preparations, 25
Pump speed, 27

R

Recovery, 5
Removing panels, 7
Removing the cover, base board, 16
Removing the cover, immersion heater circuit board, 16
Removing the hatch, input circuit board, 16
Room sensor, 18

S

Safety information, 4
Marking, 4
Serial number, 4
Symbols, 4
Scroll through the windows, 35
Selecting menu, 34
Selecting options, 34
Serial number, 4
Service, 48
Service actions, 48
Service actions, 48
Draining the climate system, 48
Draining the hot water heater, 48
Standby mode, 48
USB service outlet, 49
Setting a value, 34
Setting hot water circulation, 29
Settings, 18
Emergency mode, 19
SG Ready, 29
Standby mode, 19, 48
Power in emergency mode, 19
Start guide, 26
Start-up and inspection, 26
Pump speed, 27
Status lamp, 32
Supplied components, 6
Switch, 32
Symbol key, 11
Symbols, 4
System diagram, 11
System solutions, 5

T

Tariff control, 17
Technical data, 54
Dimensions and setting-out coordinates, 54
Electrical circuit diagram, 56
Technical Data, 55
Technical Data, 55
Temperature limiter, 16
Resetting, 16
Transport, 6
Troubleshooting, 51

U

USB service outlet, 49
Use the virtual keyboard, 35
Use without heat pump, 13

V

Venting the climate system, 25

Contact information

AUSTRIA
NIBE GmbH
Gahberggasse 11
4861 Schörfling am Attersee
Tel: +43 (0)7662 8963-0
kontakt@nibe.at
nibe.at

CZECH REPUBLIC
Družstevní závody Dražice - strojírna s.r.o.
Dražice 69, 29471 Benátky n. Jiz.
Tel: +420 326 373 801
nibe@nibe.cz
nibe.cz

DENMARK
Vølund Varmeteknik A/S
Industrivej Nord 7B, 7400 Herning
Tel: +45 97 17 20 33
info@volundvt.dk
volundvt.dk

FINLAND
NIBE Energy Systems Oy
Juurakkotie 3, 01510 Vantaa
Tel: +358 (0)9 274 6970
info@nibe.fi
nibe.fi

FRANCE
NIBE Energy Systems France SAS
Zone industrielle RD 28
Rue du Pou du Ciel, 01600 Reyrieux
Tél: 04 74 00 92 92
info@nibe.fr
nibe.fr

GERMANY
NIBE Systemtechnik GmbH
Am Reiherpfahl 3, 29223 Celle
Tel: +49 (0)5141 75 46 -0
info@nibe.de
nibe.de

GREAT BRITAIN
NIBE Energy Systems Ltd
3C Broom Business Park,
Bridge Way, S41 9QG Chesterfield
Tel: +44 (0)330 311 2201
info@nibe.co.uk
nibe.co.uk

NETHERLANDS
NIBE Energietechniek B.V.
Bagven Park 11, 4838 EH Breda
Tel: +31 (0)168 47 77 22
info@nibenl.nl
nibenl.nl

NORWAY
ABK-Qviller AS
Brynsengfaret 6, 0667 Oslo
Tel: (+47) 23 17 05 20
post@abkqviller.no
nibe.no

POLAND
NIBE-BIAWAR Sp. z o.o.
Ul. Prof. Andrzeja Kalicinskiego 1
15-569 Bialystok
Tel: +48 (0)85 66 28 490
biawar.com.pl

SWEDEN
NIBE Energy Systems
Box 14
Hannabadsvägen 5, 285 21 Markaryd
Tel: +46 (0)433-27 30 00
info@nibe.se
nibe.se

SWITZERLAND
NIBE Wärmetechnik c/o ait Schweiz AG
Industriepark, CH-6246 Altishofen
Tel. +41 (0)58 252 21 00
info@nibe.ch
nibe.ch

For countries not mentioned in this list, contact NIBE Sweden or check nibe.eu for more information.

NIBE Energy Systems
Hannabadsvägen 5
Box 14
SE-285 21 Markaryd
info@nibe.se
nibe.eu

IHB EN 2627-1 931385

This is a publication from NIBE Energy Systems. All product illustrations, facts and data are based on the available information at the time of the publication's approval.

NIBE Energy Systems makes reservations for any factual or printing errors in this publication.

©2026 NIBE ENERGY SYSTEMS

931385