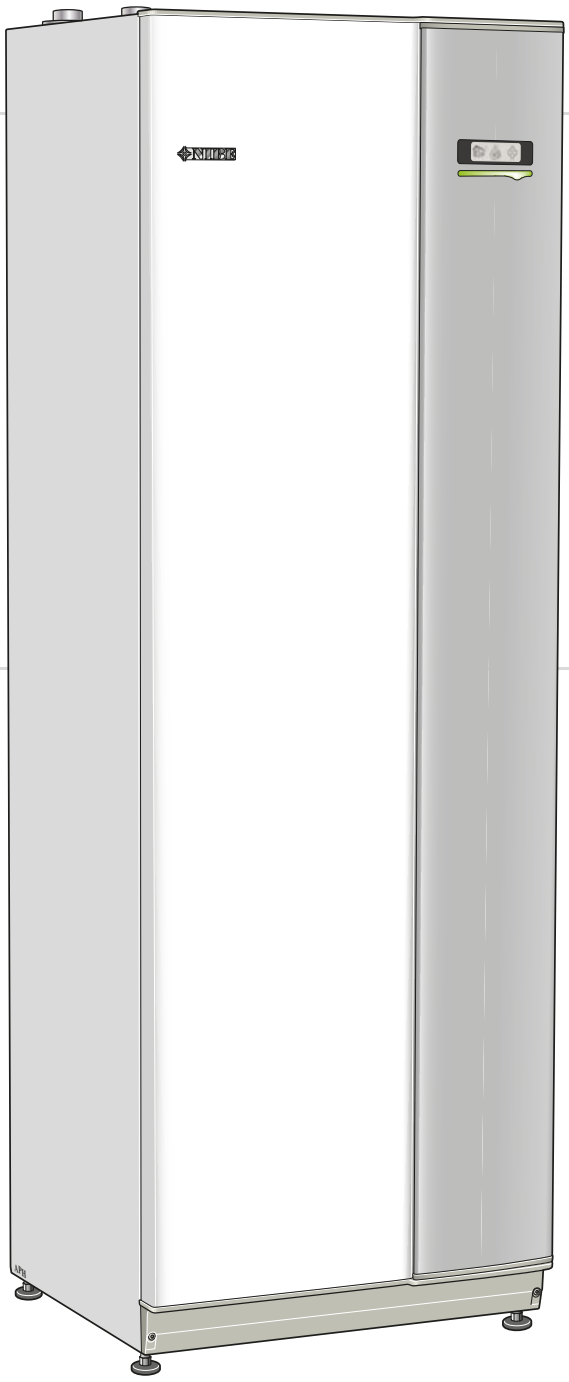


Installer manual

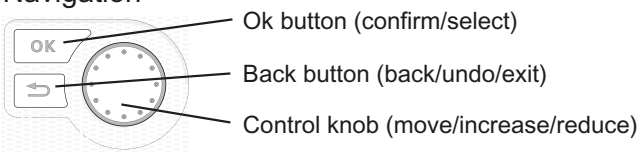
NIBE™ VVM 310

Indoor module

IHB GB 1308-2
231175

Quick guide

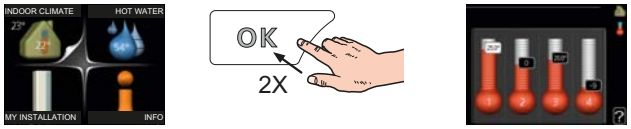
Navigation



A detailed explanation of the button functions can be found on page 33.

How to scroll through menus and make different settings is described on page 35.

Set the indoor climate



The mode for setting the indoor temperature is reached, when in the start mode in the main menu, by pressing the OK button twice. Read more about the settings on page 37.

Increase hot water volume

To temporarily increase the amount of hot water, first turn the control knob to mark menu 2 (water droplet) and then press the OK button twice. Read more about the settings on page 42.

In event of disturbances in comfort

If a disturbance in comfort of any type occurs there are some measures that can be taken before you need to contact your installer. See page 57 for instructions.

Table of Contents

1 Important information

Safety information

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

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.

Rights to make any design or technical modifications are reserved.

Symbols

NOTE

This symbol indicates danger to machine or person.

Caution

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

TIP

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

Marking

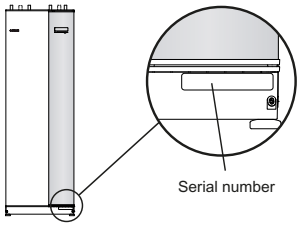
VVM 310 is CE marked and fulfils IP21.

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

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

Serial number

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



Caution

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

Country specific information

Installer manual

This installer manual must be left with the customer.

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. Fill in the page for information about installation data in the User manual.

✔	Description	Notes	Signature	Date
Heating medium (page 15)				
	System flushed			
	System vented			
	Expansion vessel			
	Particle filter			
	Safety valve			
	Shut off valves			
	Boiler pressure			
	Connected according to outline diagram			
	Setting trim valve, number of turns from closed position			
Hot water (page 15)				
	Shut off valves			
	Mixing valve			
	Safety valve			
Electricity (page 19)				
	Connected communication			
	Circuit fuses			
	Fuses, indoor module			
	Fuses property			
	Outside sensor			
	Room sensor			
	Current sensor			
	Safety breaker			
	Earth circuit-breaker			
	Setting of emergency mode thermostat			
Miscellaneous				
	Docked to			

Contact information

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Tel: (52) 647 00 30 Fax: (52) 647 00 31 E-mail: info@nibe.ch www.nibe.ch

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DE **NIBE Systemtechnik GmbH**, Am Reiherpfahl 3, 29223 Celle

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Puh: 09-274 697 0 Fax: 09-274 697 40 E-mail: info@nibe.fi www.nibe.fi

FR **AIT France,** 10 rue des Moines, 67000 Haguenau

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GB **NIBE Energy Systems Ltd**, 3C Broom Business Park, Bridge Way, Chesterfield S41 9QG

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Tel. sentralbord: +47 23 17 05 20 E-mail: post@abkklima.no www.nibeenergysystems.no

PL **NIBE-BIAWAR Sp. z o. o.** Aleja Jana Pawła II 57, 15-703 BIAŁYSTOK

Tel: 085 662 84 90 Fax: 085 662 84 14 E-mail: sekretariat@biawar.com.pl www.biawar.com.pl

RU **© "EVAN"** 17, per. Boynovskiy, Nizhny Novgorod

Tel./fax +7 831 419 57 06 E-mail: info@evan.ru www.nibe-evan.ru

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

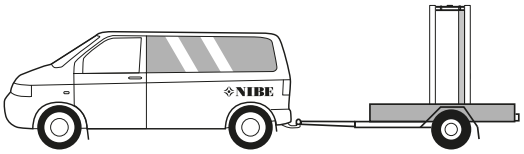
Tel: +46-(0)433-73 000 Fax: +46-(0)433-73 190 E-mail: info@nibe.se www.nibe.se

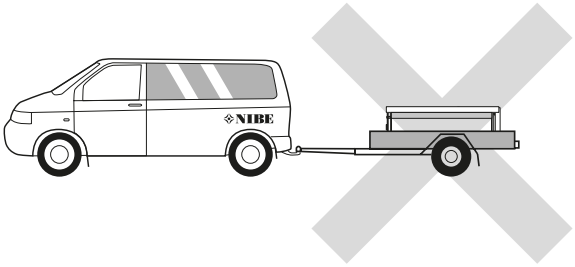
For countries not mention in this list, please contact Nibe Sweden or check www.nibe.eu for more information.

2 Delivery and handling

Transport

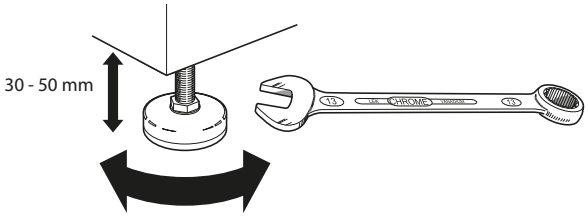
VVM 310 should be transported and stored vertically in a dry place. The VVM 310 may, however, be carefully laid on its back when being moved into a building.





Assembly

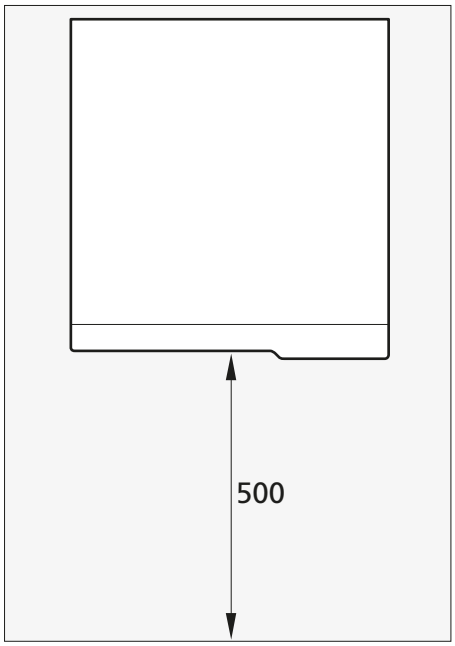
- Position VVM 310 on a firm base that can take the weight, preferably on a concrete floor or foundation. Use the product's adjustable feet to obtain a horizontal and stable set-up.



- The area where VVM 310 is located must be equipped with floor drainage.

Installation area

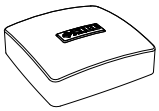
Leave a space of 500 mm in front of the product. All service on VVM 310 can be carried out from the front.



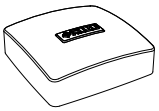
NOTE

Leave 10-25 mm free space between the indoor module and the wall behind for routing of cables and pipes.

Supplied components



Outside sensor



Room sensor

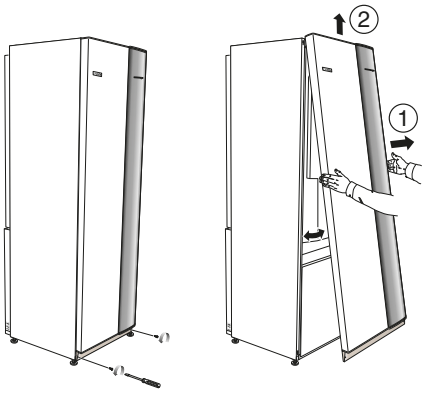
Current sensor

Location

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

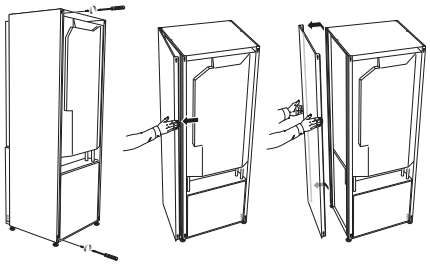
Removing the covers

Front cover



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

Side covers

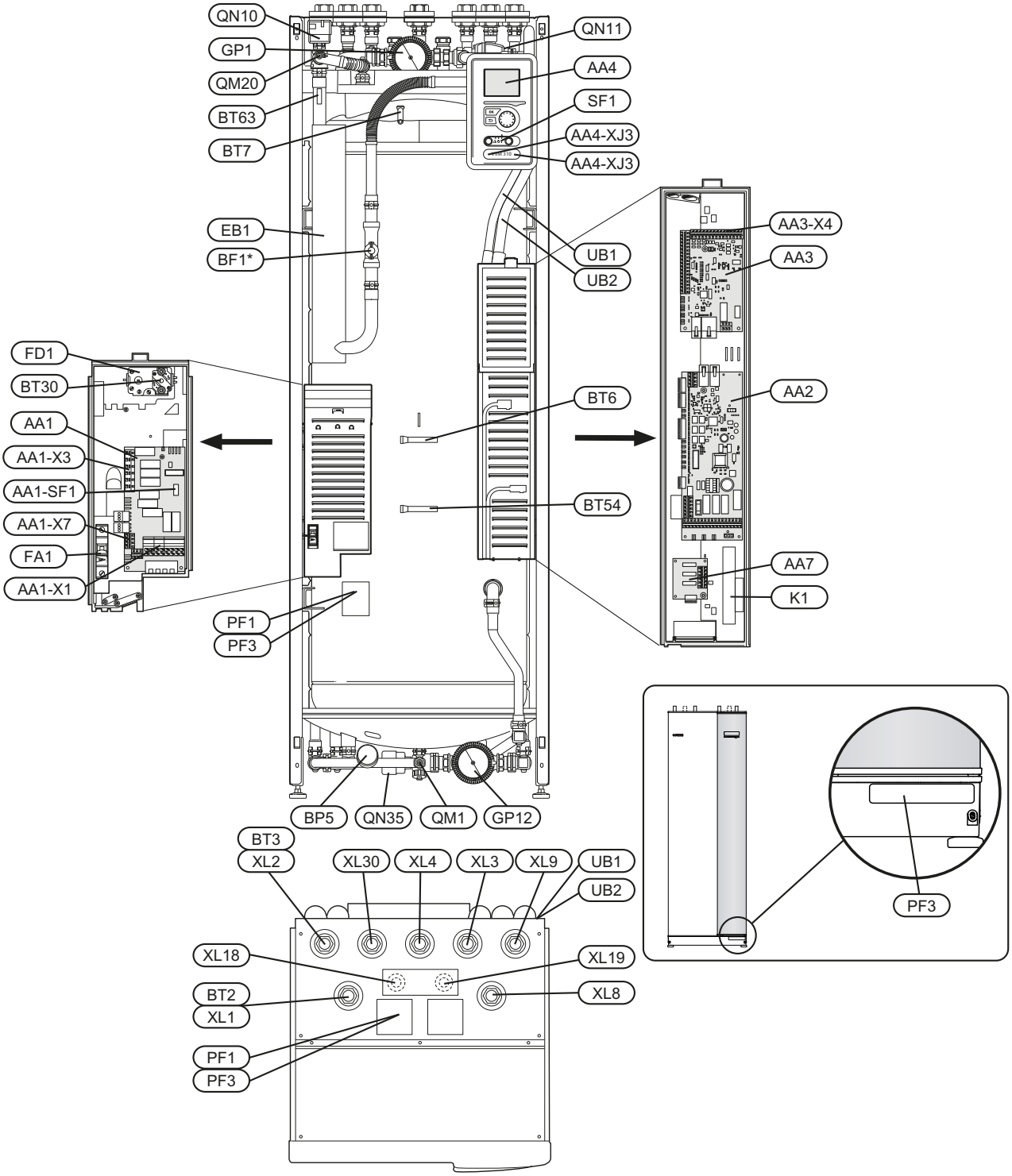


The side covers can be removed to facilitate the installation.

1. Remove the screws from the upper and lower edges.
2. Twist the cover slightly outward.
3. Move the cover backwards and slightly to the side.
4. Pull the cover to one side.
5. Pull the cover forwards.

3 Indoor module's design

VVM 310



*Applies to Germany, Switzerland and Austria Available as accessory EMK 310 in other markets.

Pipe connections

XL1 Connection, heating medium flow line G20 int.
XL2 Connection, heating medium return line G20 int.
XL3 Connection, cold water G20 int.
XL4 Connection, hot water G20 int.
XL8 Connection, docking in heating medium G20 int.
XL9 Connection, docking out heating medium G20 int.
XL18 Connection, docking in high temp Ø22 mm
XL19 Connection, docking out high temp Ø22 mm
XL30 Connection, expansion vessel G20 int.

HVAC components

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

Sensors etc.

BP5 Manometer, heating system
BT2 Temperature sensor, heating medium flow (not visible in image)
BT3 Temperature sensor, heating medium return (not visible in image)
BT6 Temperature sensor, hot water, charging
BT7 Temperature sensor, hot water, top
BT30 Thermostat, standby mode
BT54 Temperature sensor, external docking
BT63 Temperature sensor, heating medium supply after immersion heater

Electrical components

AA1 Immersion heater card
AA1-SF1 Dipswitch
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-XJ3 USB socket
AA4-XJ4 Service socket
AA7 Extra relay circuit board
BF1* Energy meter
EB1 Immersion heater
FA1 Miniature circuit-breaker
FD1 Temperature limiter
K1 Auxiliary relay, emergency mode.
SF1 Switch

Miscellaneous

PF1 Rating plate
PF3 Serial number plate
UB1 Cable gland
UB2 Cable gland

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

*Applies to Germany, Switzerland and Austria Available as accessory EMK 310 in other markets.

4 Pipe connections

General pipe connections

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

The system requires a low-temperature design of the radiator circuit. At lowest dimensioned outdoor temperature the highest recommended temperatures are 55 °C on the flow line and 45 °C on the return line, but VVM 310 can handle up to 65 °C.

NOTE

Equip the product with a safety valve on both the boiler side and domestic coil.

Overflow water from the safety valve goes via overflow cups to a drain so that hot water splashes cannot cause injury. The entire length of the overflow water pipe must be inclined to prevent water pockets and must also be frost proof.

NIBE recommends installing VVM 310 as close to the heat pump as possible for optimum comfort. For further information about the location of different components, see section "Installation alternatives" in this manual.

NOTE

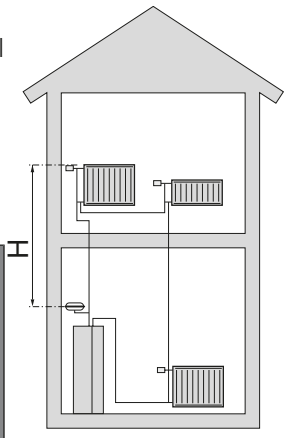
The pipe systems need to be flushed out before the indoor module is connected so that any debris cannot damage component parts.

NOTE

Switch (SF1) must not be moved to "I" or "⚠" until VVM 310 has been filled with water. Otherwise the temperature limiter, thermostat and the immersion heater etc can be damaged.

Maximum boiler and radiator volumes

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
1000	50

NOTE

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

The initial 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. An initial pressure of 0.5 bar (5 mvp) means a maximum permitted height difference of 5 m.

If the standard initial 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 standard initial pressure must be entered in the check list on page 3.

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

System diagram

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

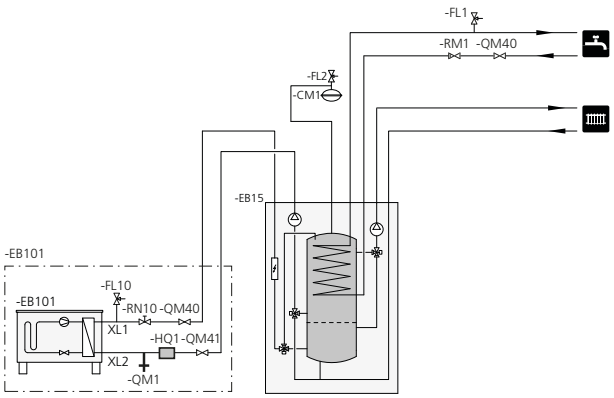
VVM 310 is designed for connection and communication with F2025/F2026/F2030/F2040/F2300. F2025/F2026/F2030/F2040/F2300 and VVM 310 together make up a complete heating installation.

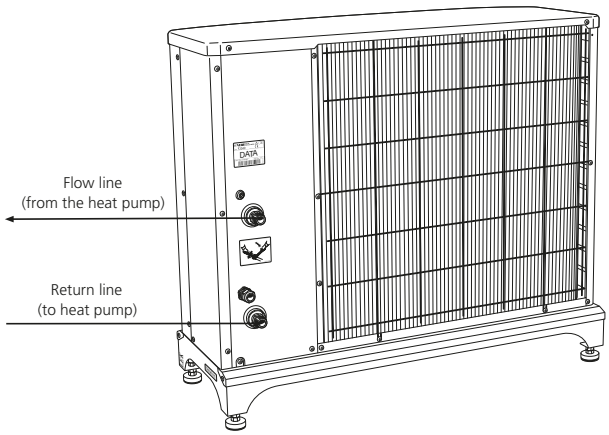
covers most of the heating and hot water requirement down to the heat pump stop temperature.

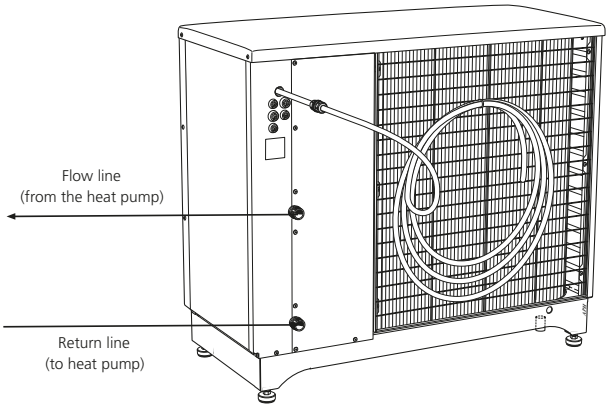
When it is cold outdoors F2025/F2026/F2030/F2040/F2300 works with VVM 310 and if the outdoor air temperature falls below the heat pump stop temperature, all heating is carried out by VVM 310.

NOTE

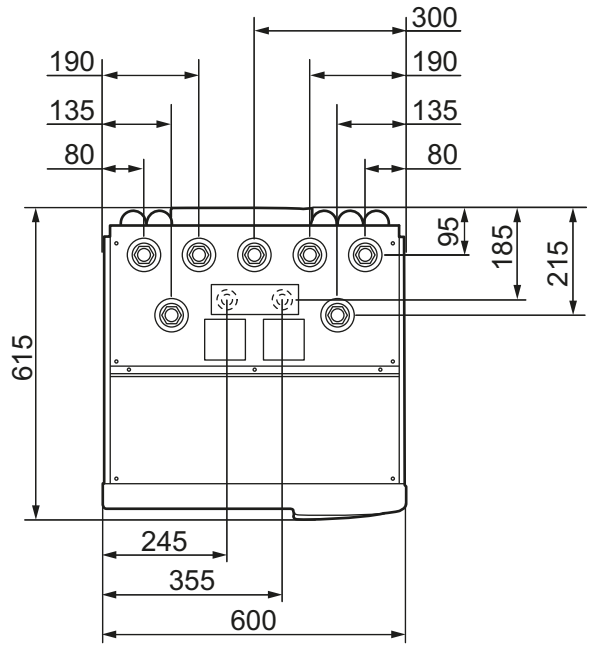
Applies to NIBE F2025 and later models or program version 51 and later versions.

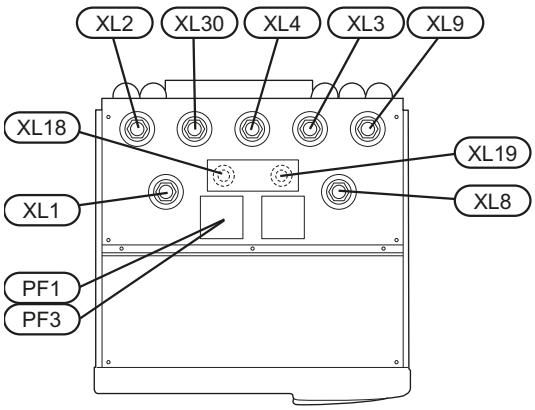


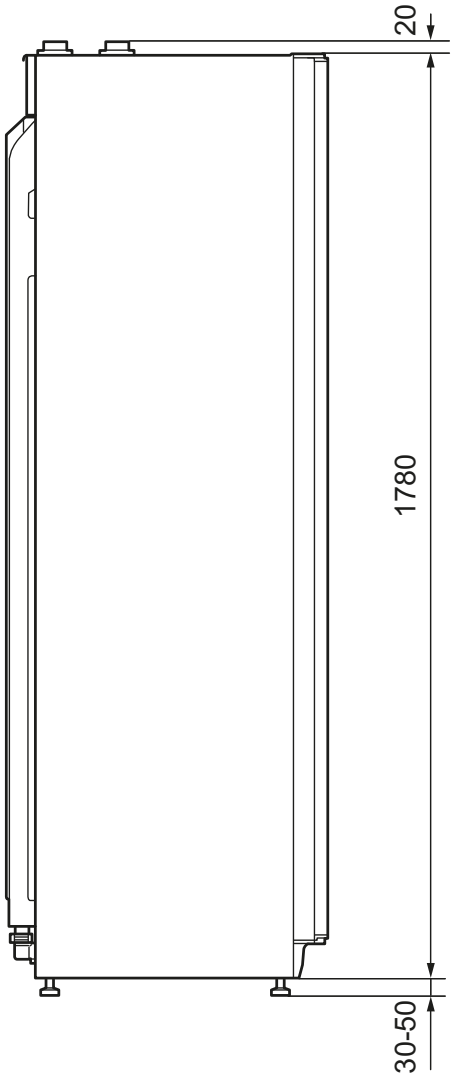




Dimensions and pipe connections







Pipe connections

XL1	Connection, heating medium flow line G20 int.
XL2	Connection, heating medium return line G20 int.
XL3	Connection, cold water G20 int.
XL4	Connection, hot water G20 int.
XL8	Connection, docking in heating medium G20 int.
XL9	Connection, docking out heating medium G20 int.
XL18	Connection, docking in high temp Ø22 mm
XL19	Connection, docking out high temp Ø22 mm
XL30	Connection, expansion vessel G20 int.

Symbol key

Symbol	Meaning
	Shut-off valve
	Tapping valve
	Non-return valve
	Shunt / shuttle valve
	Safety valve
	Thermometer
	Trim valve
	Temperature sensor
	Expansion vessel
	Pressure gauge
	Circulation pump
	Particle filter
	Flow meter EMK 310
	Heat exchanger

Installation alternative

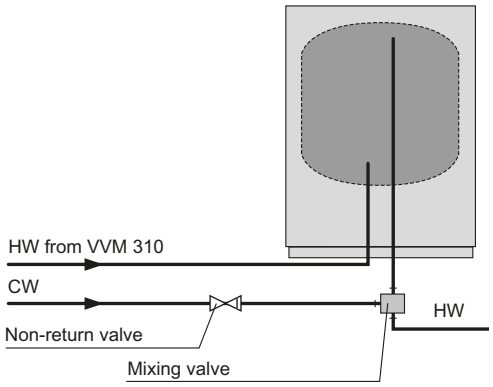
VVM 310 can be connected to extra water heater, see below.

Further option information is available at www.nibe.eu and in the respective assembly instructions for the accessories used. See page 59 for a list of the accessories that can be used with VVM 310.

Water heater with immersion heater

If it is possible to use a water heater with an immersion heater, NIBE COMPACT or EMINENT type water heaters can be used.

If the heater is equipped with a valve connector Ø 15 mm this should be replaced with a corresponding Ø 22 mm.



Explanation

CL11 Pool kit
AA5 Accessory card
BT51 Temperature sensor, pool
EP5 Exchanger, pool
GP9 Pool, pump
HQ4 Particle filter
QN19 Three way valve, pool

EB15 VVM 310
BF1* Energy meter
XL1 Connection, heating medium, flow 1
XL2 Connection, heating medium, return 1
XL3 Connection, cold water
XL4 Connection, hot water
XL8 Connection, docking, in heating medium
XL9 Connection, docking, out heating medium
XL13 Connection, solar system, flow
XL14 Connection, solar system, return
XL39 Connection, accessory, out

EB101 Heat pump
FL10 Safety valve
HQ1 Particle filter
RN10 Trim valve
QM1 Tapping valve
QM40 Shut-off valve
QM41 Shut-off valve
EM1 Wood burning stove with back boiler
AA5 Accessory card
BT52 Temperature sensor, boiler
EM1 Wood burning stove with back boiler
GP15 Charge pump, external heat source

EP21 Climate system 2
AA5 Accessory card
BT2 Temperature sensor, heating medium, flow
BT3 Temperature sensor, heating medium, return
GP20 Circulation pump, heating medium, lower shunt
QN11 Mixing valve, addition

EP30 Solar kit
AA5 Accessory card
BT53 Temperature sensor, solar panel
CM5 Expansion vessel
EP8 Solar panel
GP30 Pump station SPS 10, SPS20

GP30 Pump station SPS 10, SPS 20
FL4 Safety valve, solar
GP4 Pump, solar
QM43 Shut-off valve
QM44 Shut-off valve
QM45 Shut-off valve
RM3 Non-return valve
RM4 Non-return valve

Miscellaneous
CM1 Expansion vessel closed, heating medium
EB1 Immersion heater
FL1 Safety valve, hot water
FL2 Safety valve, heating medium
QM40 Shut-off valve
RM1 Non-return valve

*Energy meter (BF1) is included in Germany, Switzerland and Austria.

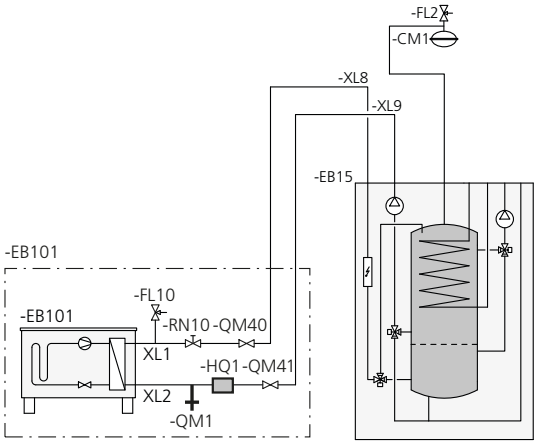
Connecting to heat pump

All outdoor pipes must be thermally insulated with at least 20mm thick pipe insulation.

VVM 310 is not equipped with shut off valves; these must be installed outside the indoor module to facilitate any future servicing.

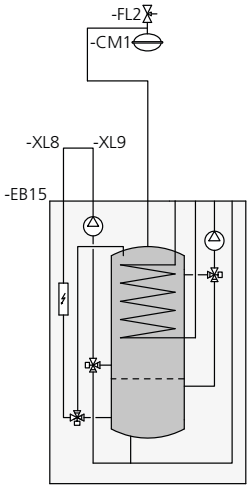
NOTE

The charge circuit is supplied with trim valve for basic setting of the charge flow.



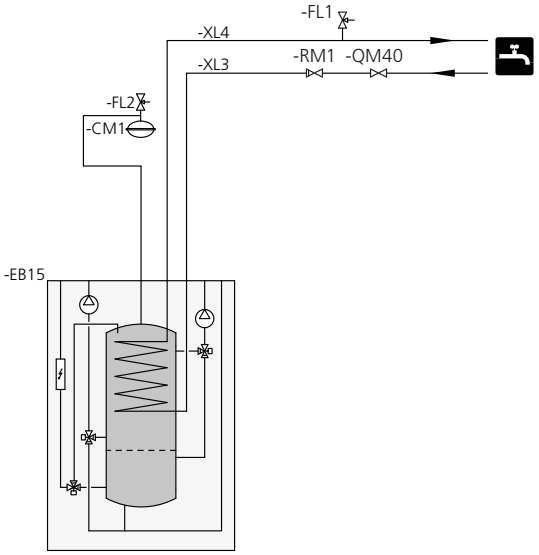
Connection as electric boiler

Connect the pipe for docking in from the heat pump (XL8) with the pipe out to the heat pump (XL9).



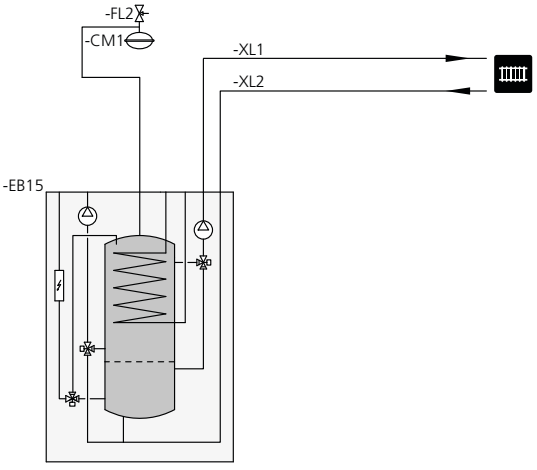
Connecting cold and hot water

The mixing valve must be installed if the factory setting is changed so that the temperature can exceed 60 °C. If the factory setting is changed, national regulations must be observed. The setting is made in menu 5.1.1 (See page 50).



Connecting the climate system

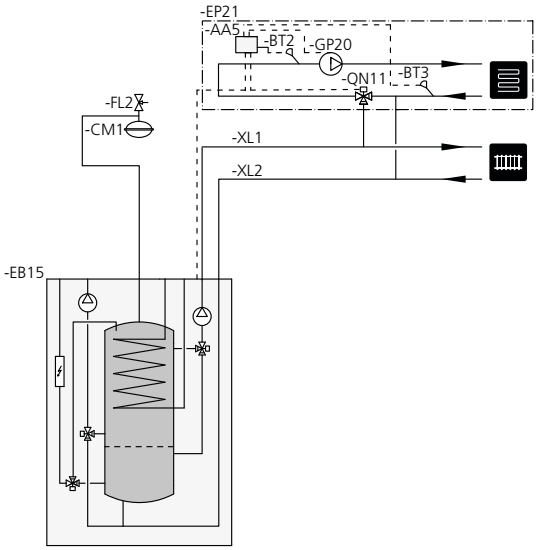
When connecting to a system with thermostats on all radiators/underfloor heating coils, a relief valve must be fitted, or a thermostat must be removed to ensure sufficient flow.



Two or more climate systems

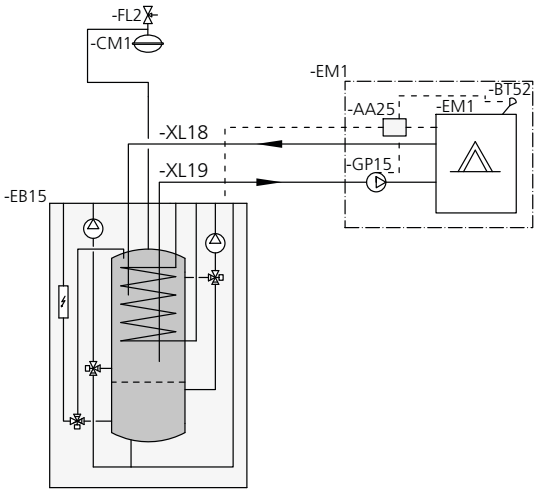
When more than one climate system is to be heated, the following connection can be used.

The ECS 40/ECS 41. accessory is required for this connection.



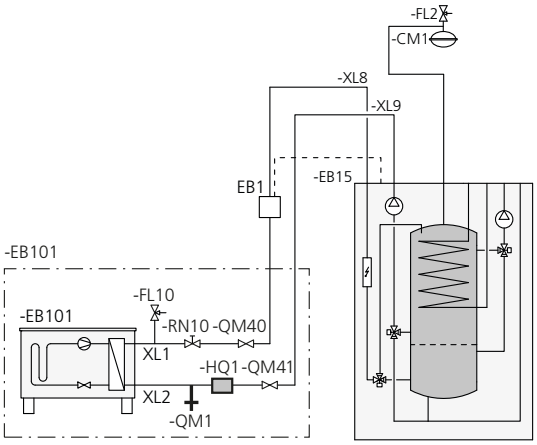
Connection of external heat source

For connection to a gas/electric/oil boiler, the DEH 310 accessory is required, see "Accessories" on page 59.



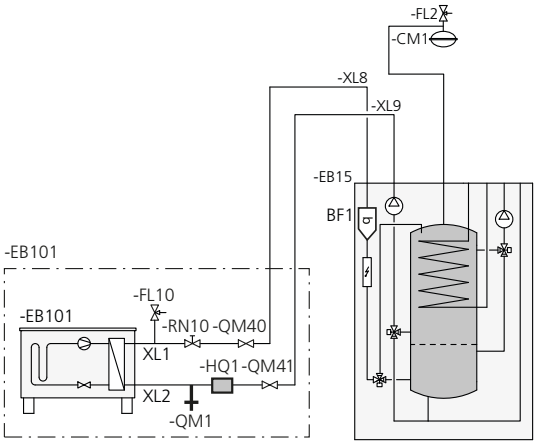
Connecting ELK

For connection of external electrical addition, in one step, in event of a stoppage because of cold outdoor air.



Connecting EMK 310

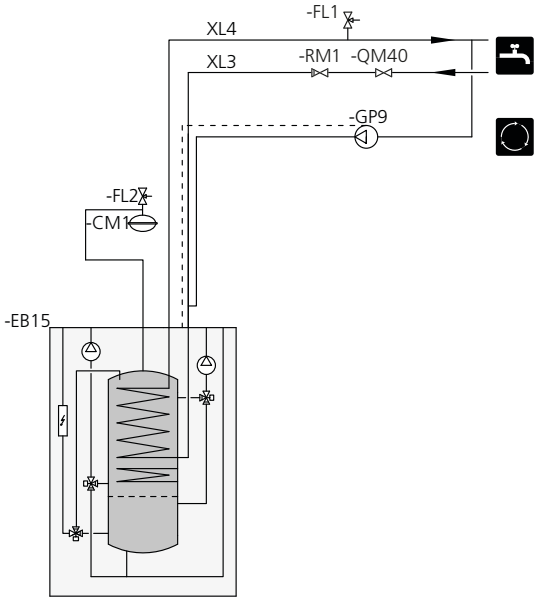
Installing energy measurement kit EMK 310* (BF1) to VVM 310.



*EMK 310 is included in VVM 310 for Germany, Switzerland and Austria. Available as accessory in other markets.

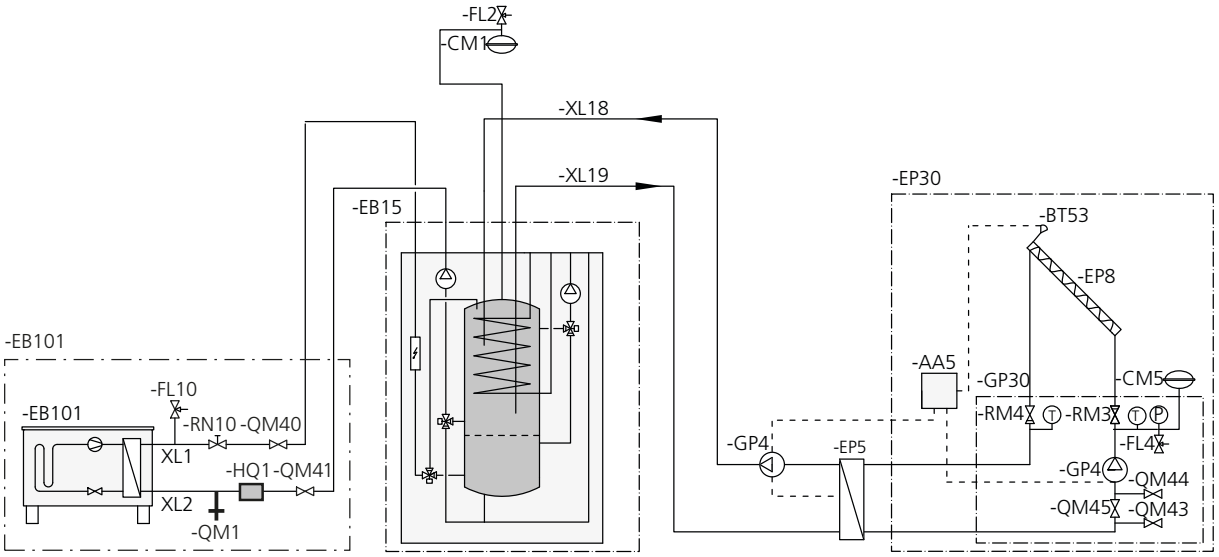
Connecting hot water circulation

To reduce the risk of bacterial growth in systems with hot water circulation, the temperature of the circulating water should not fall below 50 °C. There should not be any non-circulatory hot water pipes. Adjust the hot water system so that the temperature does not fall below 50 °C at the ends of the system.



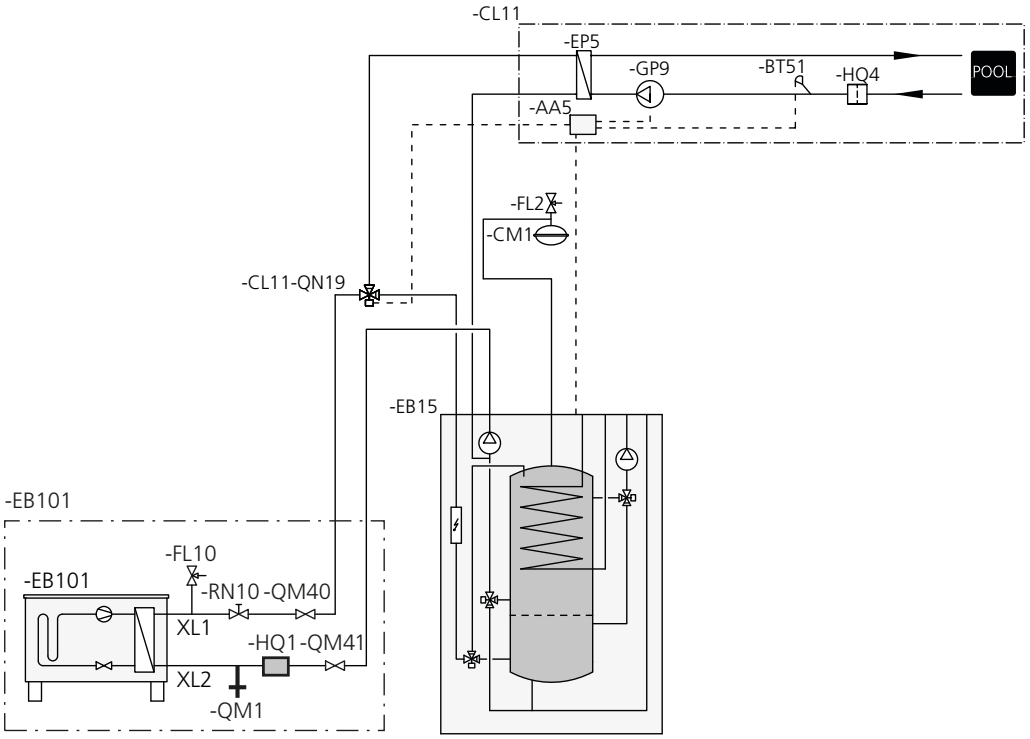
Connecting to solar installation

For connection to solar installation, the SCA 35 accessory is required, see "Accessories" on page 59.



Connecting pool

Charging of the pool is controlled by the pool sensor. In the case of low pool temperatures, the reversing valve reverses direction and opens towards the pool exchanger. The POOL 310 accessory is required for this connection.

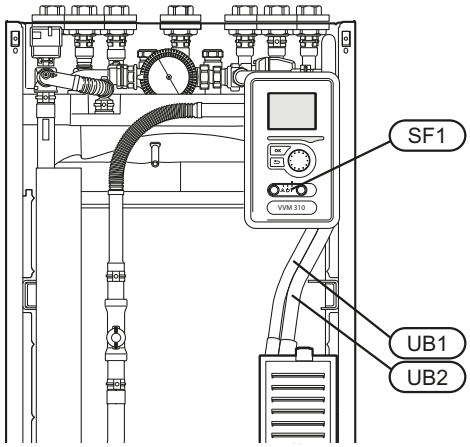


5 Electrical connections

General

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

- Disconnect the indoor module before insulation testing the house wiring.
- If the building is equipped with an earth-fault breaker, VVM 310 should be equipped with a separate one.
- For the indoor module wiring diagram, see page 64.
- Communication and sensor cables to external connections must not be laid close to high current cables.
- The minimum area of communication and sensor cables to external connections must be 0.5 mm² up to 50 m, for example EKKX or LiYY or equivalent.
- When cable routing in VVM 310, cable grommets UB1and UB2, (marked in image) must be used. In UB1 and UB2 the cables are inserted through the indoor module from the back to the front.



NOTE

The switch (SF1) must not be moved to "I" or "⚠" until the boiler has been filled with water and the radiator system vented. Otherwise the temperature limiter, thermostat and the immersion heater can be damaged.

NOTE

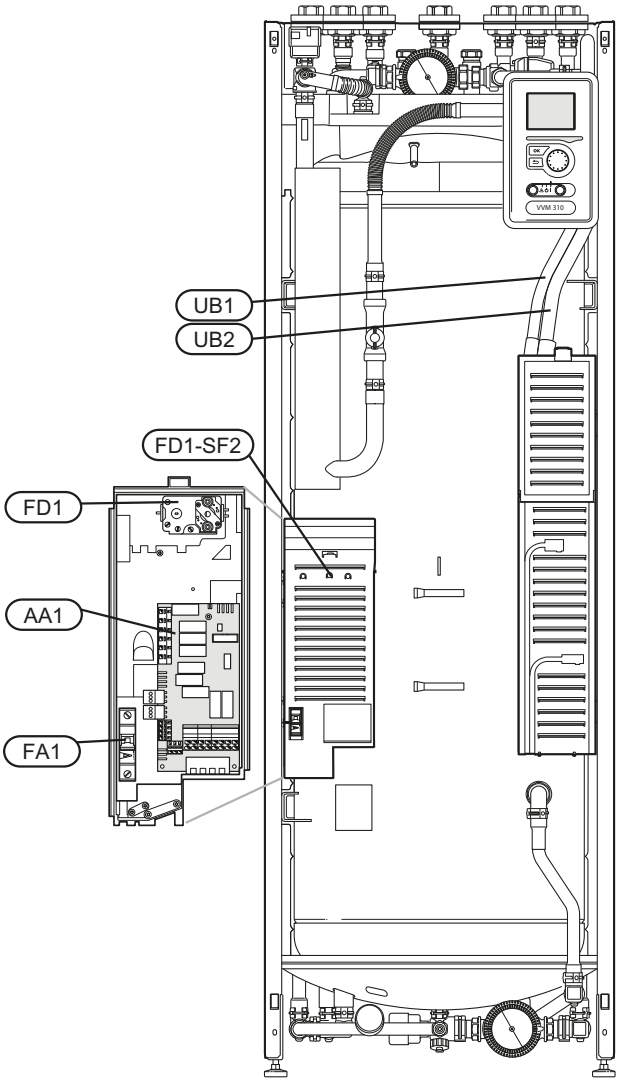
If the supply cable is damaged, only NIBE, its service representative or similar authorised person may replace it to prevent any danger and damage.

NOTE

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

Caution

When VVM 310 must be run with an older outdoor section, the program version in the outdoor section must be V51 or later.



Miniature circuit-breaker

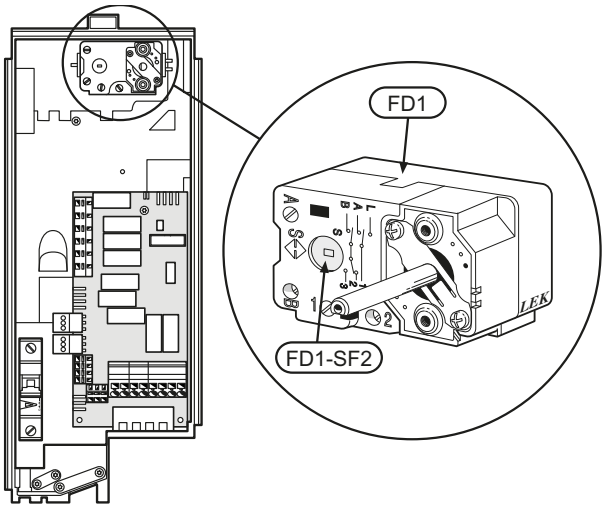
The indoor module and a large proportion of its internal components are internally fused by a miniature circuit breaker ((FA1)).

Temperature limiter

The temperature limiter (FD1) cuts the current supply to the electrical addition if the temperature rises between 90 and 100°C and can be manually reset.

Resetting

The temperature limiter (FD1) is accessible behind the front cover. Reset the temperature limiter by pressing the button (FD1-SF2) using a small screwdriver. Press the button lightly, max 15 N (approx. 1.5 kg).



Caution

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

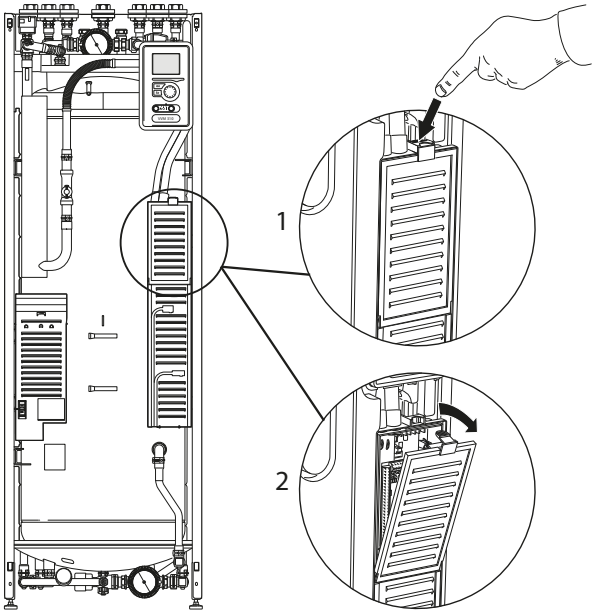
Accessibility, electrical connection

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

NOTE

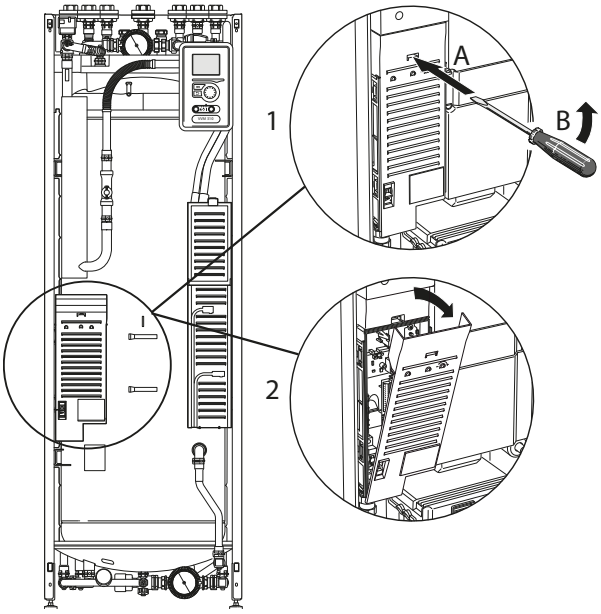
The cover for the input card is opened without a tool.

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

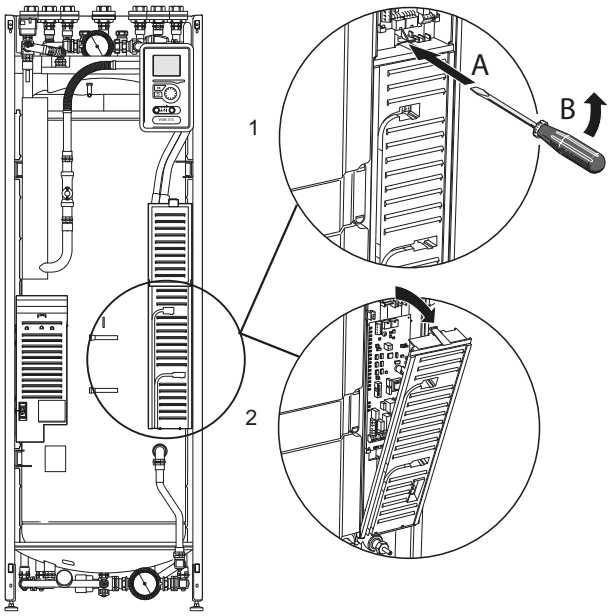


1. Insert the screwdriver (A) and pry the catch carefully downwards (B).
2. Angle out the cover and remove it.

Removing the cover, base board

Caution

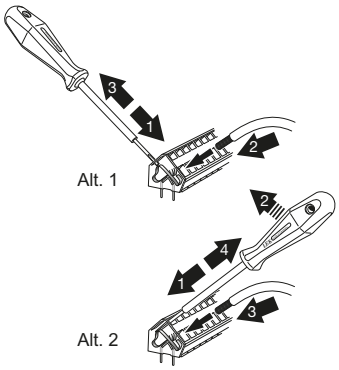
To remove the cover for the base board, the cover for the input circuit board must first be removed.



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

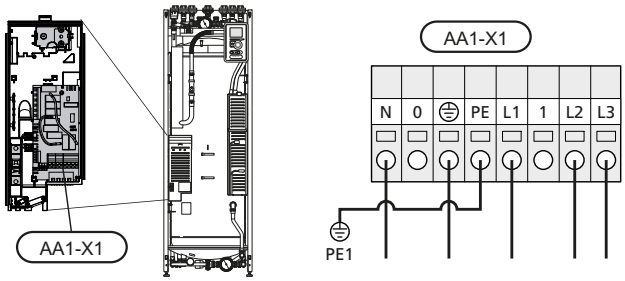
NOTE

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

Power connection

VVM 310 must be installed via an isolator switch with a minimum breaking gap of 3 mm. Minimum cable area must be dimensioned according to the fuse rating used. Supplied cable (length approx. 2 m) for incoming electricity is connected to terminal block X1 on the immersion heater card (AA1). The connection cable can be found on the reverse of VVM 310.

Connection



Tariff control

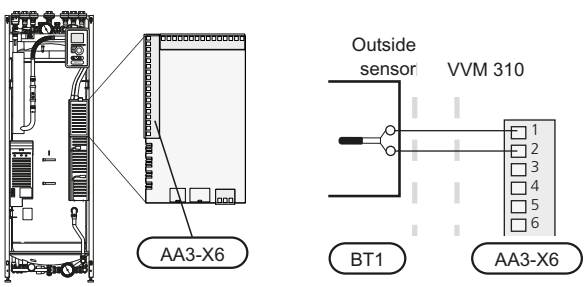
If the voltage to the immersion heater disappears during a certain period, there must also be blocking via the AU-input, see "Connection options- Possible selection for AU inputs".

Outside sensor

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

Connect the sensor to terminal block X6:1 and X6:2 on the input card (AA3). Use a twin core cable of at least 0.5 mm² cable area.

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



Room sensor

VVM 310 is delivered with a room sensor supplied (BT50). The room temperature sensor has up to three functions:

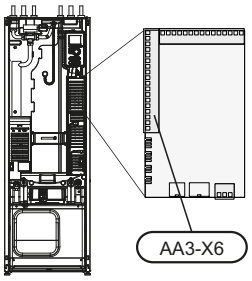
1. Show current room temperature in VVM 310's display.
2. Option of changing the room temperature in °C.
3. Makes it possible to change/stabilise the room temperature.

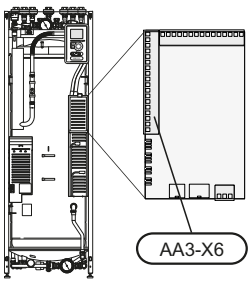
Install the sensor in a neutral position where the set temperature is required. A suitable location is on a free inner wall in a hall approx. 1.5 m above the floor. It is important that the sensor is not obstructed from measuring the correct room temperature by being located, for example, in a recess,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

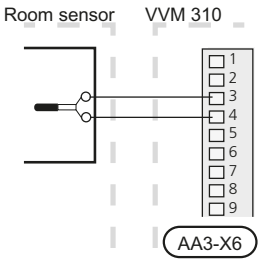
The indoor module operates without the sensor, but if one wishes to read off the accommodation's indoor temperature in VVM 310's display the sensor must be installed. Connect the room sensor to X6:3 and X6:4 on the input circuit board (AA3).

If the sensor is to be used to change the room temperature in °C and/or to stabilise the room temperature, the sensor must be activated in menu 1.9.4.

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





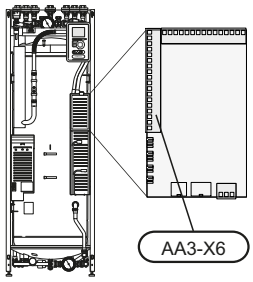


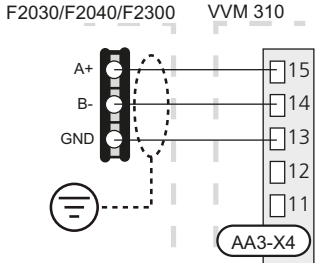
Caution

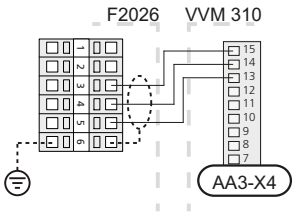
Changes of temperature in accommodation take time. For example, short time periods in combination with underfloor heating will not give a noticeable difference in room temperature.

Communication

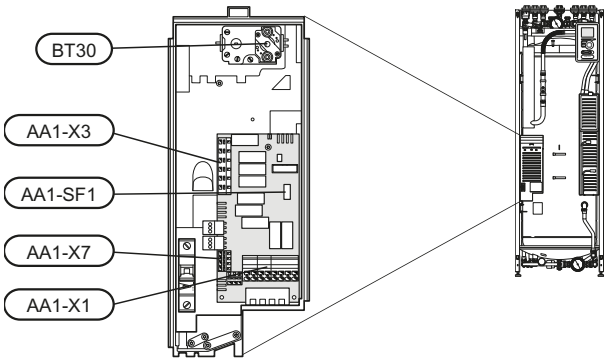
If VVM 310 is to be connected to the heat pump, it is connected to terminals X4:13, X4:14 and X4:15 on the input card (AA3).







Settings



Electrical addition - maximum output

The immersion heater can be set up to a maximum of 8 kW. Delivery setting is 8 kW.

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

Setting maximum output in the electrical addition 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. In the event of a phase overload, the power is reconnected to another/other phases.

Emergency mode

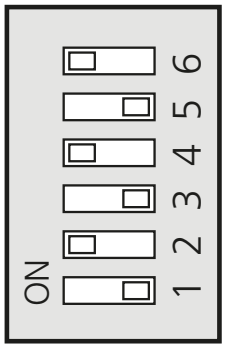
When the indoor module is set to emergency mode (SF1 is set to ⚠) only the most necessary functions are activated.

- The hot water capacity is reduced.
- The load monitor is not connected.
- Fixed temperature in the flow line, see chapter Emergency mode thermostat on page 25.

Power in emergency mode

The immersion heater's output in emergency mode is set with the dipswitch (SF1) on the immersion heater circuit board (AA1) according to the table below. Factory setting is 8 kW.

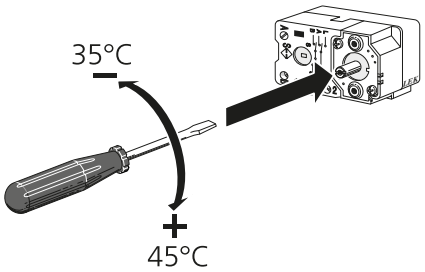
kW	1	2	3	4	5	6
1.33	**on**	off	off	off	off	off
2.67	off	**on**	off	off	off	off
4	**on**	off	off	**on**	off	off
5.33	off	**on**	off	**on**	off	off
6.66	**on**	off	off	**on**	off	**on**
8	off	**on**	off	**on**	off	**on**
9.33	**on**	**on**	off	**on**	off	**on**
10.66	**on**	**on**	**on**	**on**	off	**on**
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 is set in emergency mode using a thermostat (FD1-BT30). It can be set to 35 (pre-set, for example underfloor heating) or 45 °C (for example radiators).



Output locking

VVM 310 follows applicable building regulations (BBR). This means that the maximum power output (maximum installed electrical output for heating) can be locked in menu 5.1.13. To then change the maximum power output, parts of the product must be replaced.

Optional connections

Load monitor

When many power consumers are connected in the property at the same time as the electric addition is operating, there is a risk of the property's main fuse tripping. The electric boiler has integrated load monitors that control the electrical steps for the electrical addition by redistributing the power between the different phases or disengaging in event of overload in a phase. Reconnection occurs when other current consumption is reduced.

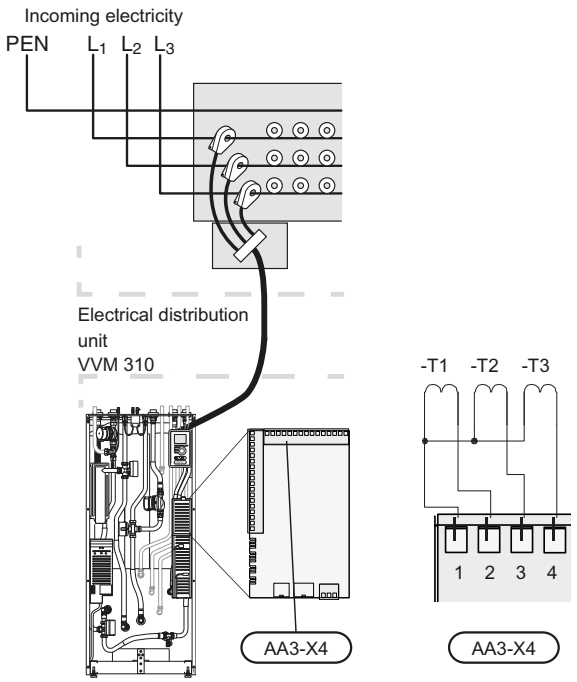
Connecting current sensors

A current sensor should be installed on each incoming phase conductor in to the distribution box to measure the current. The distribution box is an appropriate installation point.

Connect the current sensors to a multi-core cable in an enclosure next to the distribution box. Use a multi-core cable of at least 0.5 mm2 from the enclosure to the indoor module.

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

The size of the property's main fuse is set in menu 5.1.12.



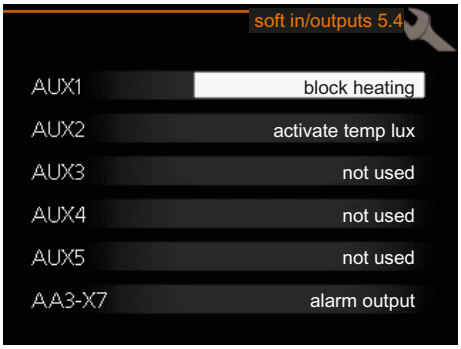
External connection options

VVM 310 has software controlled inputs and outputs on the input card (AA3), for connecting the extern switch function or sensor. This means that when an external switch function or sensor is connected to one of six special connections, the correct function must be selected to the correct connection in the software in VVM 310.

Caution

If an external switch function or sensor is connected to VVM 310, the function to use input or output must be selected in menu 5.4, see page 52.

Selectable inputs on the input card for these functions are AUX1 (X6:9-10), AUX2 (X6:11-12), AUX3 (X6:13-14), AUX4 (X6:15-16) and AUX5 (X6:17-18). Selectable outputs are AA3:X7.



The example above uses the inputs AUX1 (X6:9-10) andAUX2 (X6:11-12) on the input circuit board (AA3).

Caution

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

Possible selection for AUX inputs

Switch for external blocking of additional heat

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

The additional heat is disconnected by connecting a potential free switch function to the input selected in menu 5.4, see page 52.

A closed contact results in the electrical output being disconnected.

Switch for external blocking of heating

In those cases external blocking of heat is used, this can be connected to terminal block X6 on the input card (AA3), which is positioned behind the front cover.

Heating operation is disconnected by connecting a potential free switch function to the input selected in menu 5.4, see page 52.

A closed switch results in blocked heating operation.

Contact for activation of "temporary lux"

An external contact function can be connected to VVM 310 for activation of the hot water function"temporary lux". The switch must be potential free and connected to the selected input (menu 5.4, see page 52) on terminal block X6 on the input circuit board (AA3).

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

Contact for activation of "external adjustment"

An external contact function can be connected to VVM 310 to change the supply temperature and the room temperature.

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

- *climate system 1*

  The switch must be potential free and connected to the selected input (menu 5.4, see page 52) on terminal block X6 on the input circuit board (AA3).

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

- *climate system 2 to 4*

  External adjustment for climate systems 2 to 4 require accessories (ECS 40).

  See the accessory's installer handbook for installation instructions.

Possible selection for AUX output (potential free variable relay)

It is possible to have an external connection through the relay function via a potential free variable relay (max 2 A) on the input circuit board (AA3), terminal block X7.

Optional functions for external connection:

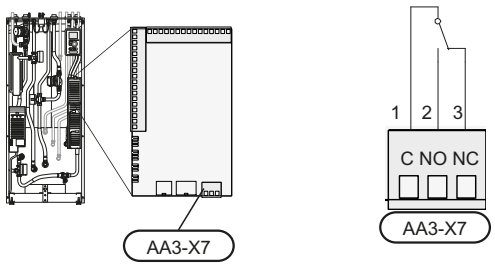
- Indication of buzzer alarm.
- Cooling mode indication (only applies if accessories for cooling are present or if the heat pump has the integrated cooling function).
- Control of circulation pump for hot water circulation.
- External circulation pump (for heating medium).
- External, reversing valve for hot water.
- External circulation pump, for example external pump and shunt group.
- Addition in series on the charge circuit.

If any of the above is installed to terminal block X7 it must be selected in menu 5.4, see page 52.

The common alarm is preselected at the factory.

NOTE

An accessory card is required if several functions are connected to terminal block X7 at the same time that the buzzer alarm is activated (see page 59).



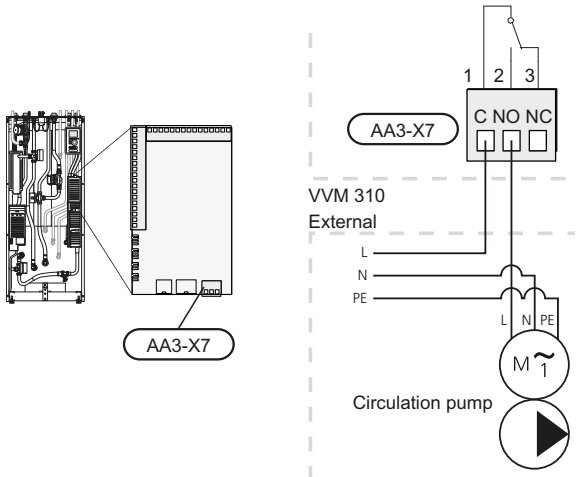
The picture shows the relay in the alarm position.

When switch (SF1) is in the "⏻" or "⚠" position the relay is in the alarm position.

External circulation pump, ground water pump or hot water circulation pump connected to the buzzer alarm relay as illustrated below.

NOTE

Mark up any junction boxes with warnings for external voltage.



Caution

The relay outputs can have a max load of 2 A (230 V AC) in total.

Connecting accessories

Instructions for connecting accessories are provided in the manual accompanying the accessory. See page 59 for the list of the accessories that can be used with VVM 310.

6 Commissioning and adjusting

Preparations

1. Check that the switch (SF1) is in position " ⏻ ".
2. Check that the drain valve is fully closed and that the temperature limiter (FD1) has not deployed.

Filling and venting

Filling the hot water coil

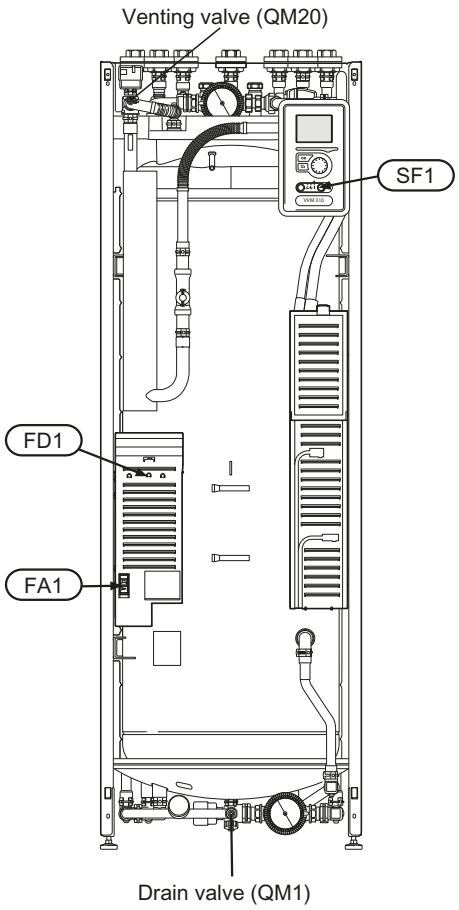
1. Open a hot water tap in the house.
2. Open the externally mounted shut-off valve. This valve should then be fully open during operations.
3. When water comes out of the hot water tap, the hot water coil is full and the tap can be closed.

Filling the climate system

1. Open the venting 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 that exits the vent valve (QM20) is not mixed with air, close the vent valves. After a while the pressure rises on the externally mounted pressure gauge. When the pressure for the externally mounted safety valve has been reached, it starts to release water. Close the filler valve.
4. Open the externally mounted safety valve until the pressure in VVM 310 falls to the normal working range (approx. 1 bar) and check that there is not air in the system by turning the vent valves (QM20).

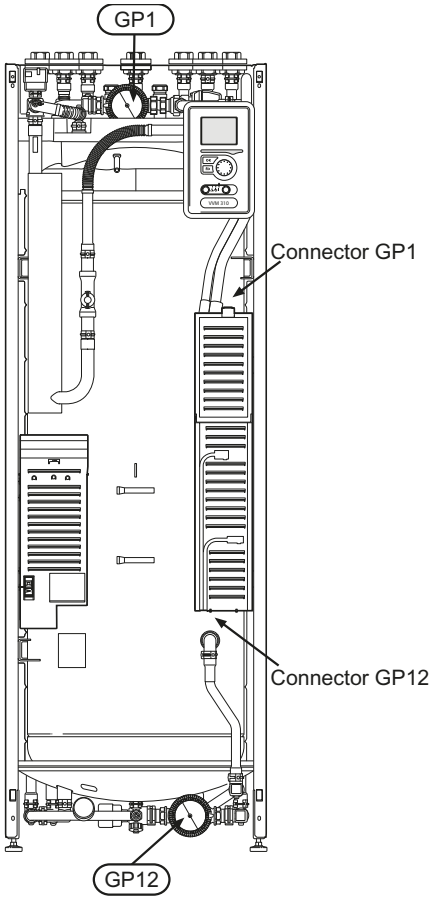
Venting the climate system

1. Turn off the power supply to VVM 310.
2. Vent VVM 310 through the vent valve (QM20) and the 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.



Connecting the circulation pumps

After the system has been filled with water and vented, connect the circulation pumps' switches.



Start-up and inspection

Start guide

NOTE

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

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

TIP

See page 33 for a more in-depth 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 cannot be bypassed. The start guide can be started later in menu 5.7.

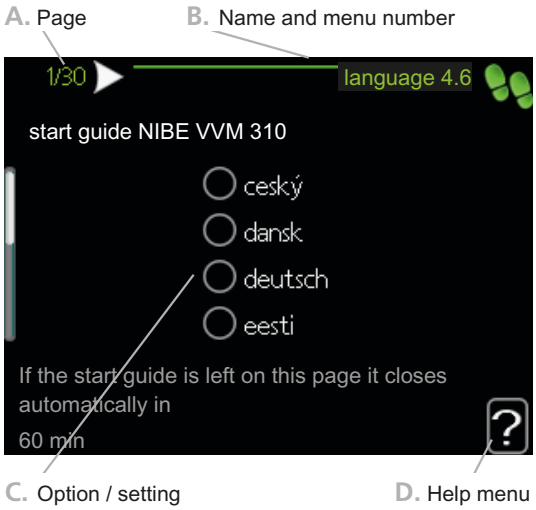
During the start up guide the reversing valves and the shunt valve are run backward and forwards to help vent VVM 310.

Caution

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

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

Operation in the start guide



A. Page

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

Scroll between the pages of the start guide as follows:

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

B. Name and menu number

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

If you want to read more about affected menus either read off in the sub-menu or in the installation manual from page 37.

C. Option / setting

Make settings for the system here.

D. Help menu

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

To access the help text:

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

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

Commissioning without heat pump

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

Connect the pipe for docking in from the heat pump (XL8) with the pipe out from the heat pump (XL9).

Enter menu 5.2.4 System settings and deactivate the heat pump.

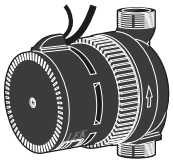
NOTE

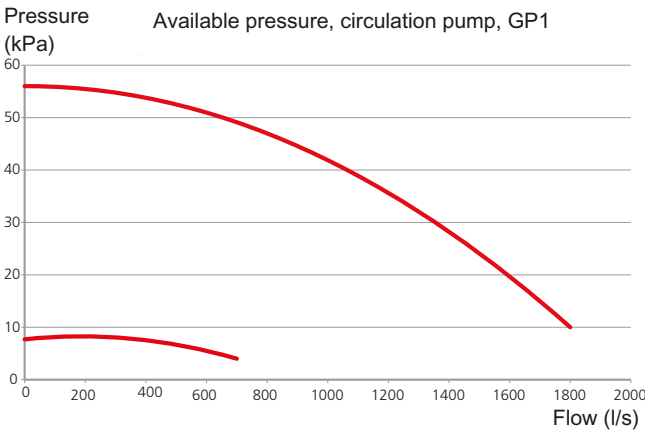
Select operating mode auto or manual when the indoor module is to run with the heat pump.

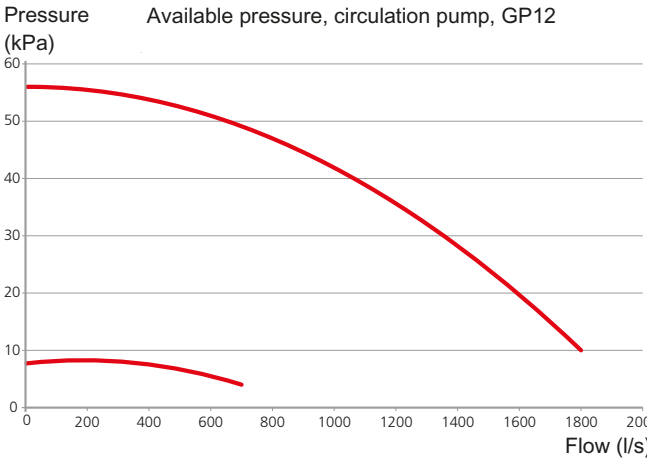
Pump speed

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

In the menu there are two operating modes for the circulation pumps, "manual" and "auto". If "auto" is selected, the circulation pumps are controlled automatically by heating and hot water demands.





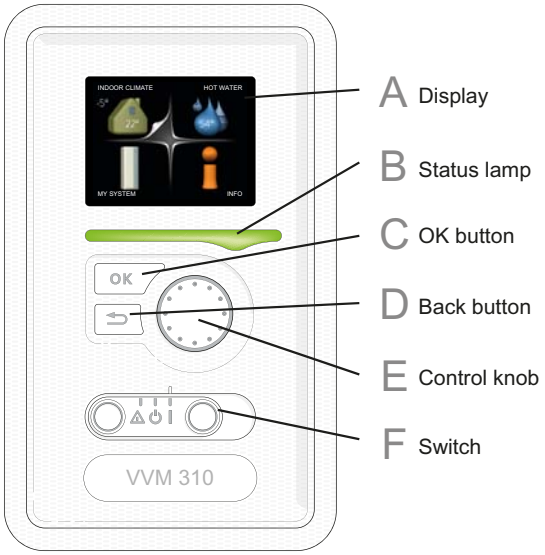


Post-adjustment, venting

Air is initially released from the hot water and venting may be necessary. If gurgling sounds can be heard from the climate system, the entire system will require additional venting. Vent the installation through the venting valves (QM20). When venting, VVM 310 must be off.

7 Control - Introduction

Display unit



A Display

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

B Status lamp

The status lamp indicates the status of the 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)

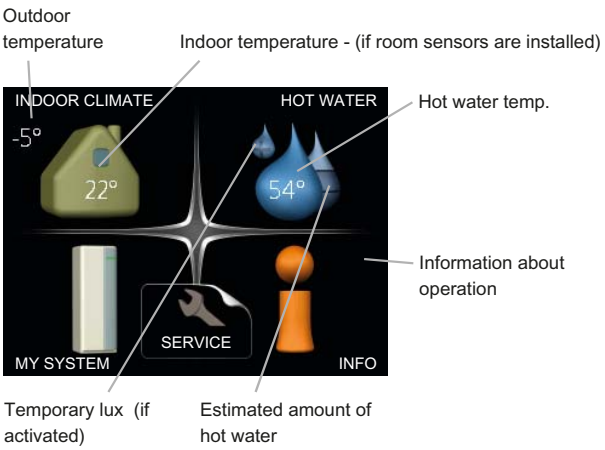
The switch assumes three positions:

- 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.

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 page 37.

Menu 2 - HOT WATER

Setting and scheduling hot water production. See page 42.

Menu 3 - INFO

Display of temperature and other operating information and access to the alarm log. See page 44.

Menu 4 - MY SYSTEM

Setting time, date, language, display, operating mode etc. See page 45.

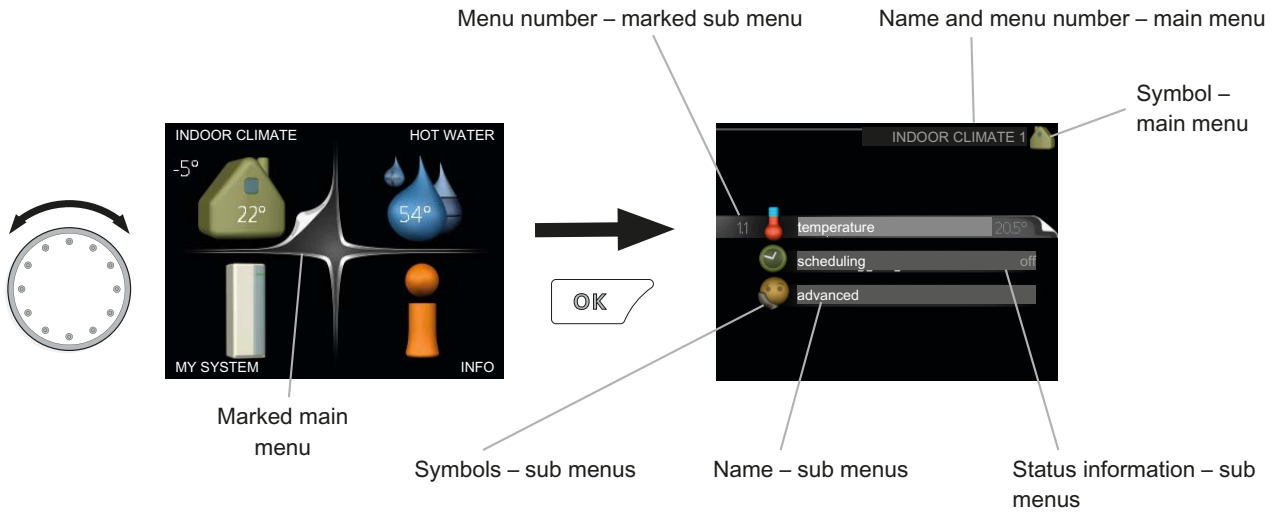
Menu 5 - SERVICE

Advanced settings. These settings are not available to the end user. The menu is visible by pressing the Back button for 7 seconds. See page 49.

Symbols in the display

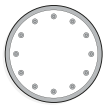
The following symbols can appear in the display during operation.

Symbol	Description
	This symbol appears by the information sign if there is information in menu 3.1 that you should note.
	These two symbols indicate whether the compressor in the outdoor unit 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 lux mode for the hot water is activated.
	This symbol indicates whether solar heating is active. Accessory needed.
	This symbol indicates whether "holiday setting" is activated in menu 4.7.



Operation

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



Selecting menu

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

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

Selecting options

Alternative

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

To select another option:

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

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

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.

Scroll through the windows

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

Current menu window

Number of windows in the menu

Scroll through the windows in the start guide

Arrows to scroll through window in start guide

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

Help menu

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

To access the help text:

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

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

8 Control - Menus

Menu 1 - INDOOR CLIMATE

Overview

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

Sub-menus

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

temperature Setting the temperature for the climate system. The status information shows the set values for the climate system.

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

advanced Setting of heat curve, adjusting with external contact, minimum value for supply temperature, own curve and point offset.

Menu 1.1 - temperature

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

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

Setting range: 5 - 30 °C

Default value: 20

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

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

Setting the temperature (without room sensors activated):

Setting range: -10 to +10

Default value: 0

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

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

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

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

Caution

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

TIP

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

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

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

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

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

Menu 1.3 - scheduling

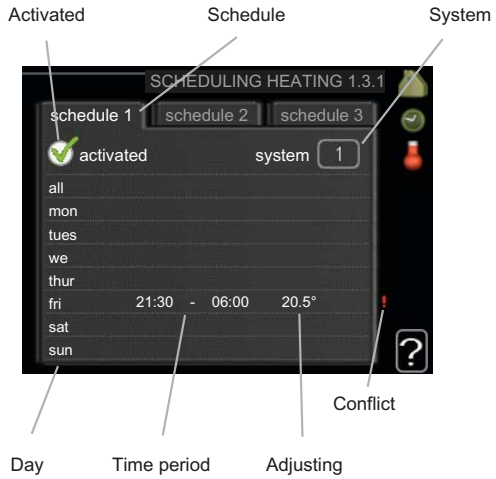
In the menu scheduling indoor climate (heating) is scheduled for each weekday.

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

Menu 1.3.1 - heating

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

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



Schedule: The schedule to be changed is selected here.

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

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

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

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

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

TIP

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

Caution

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

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

Menu 1.9 - advanced

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

heating curve Setting the heating curve slope.

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

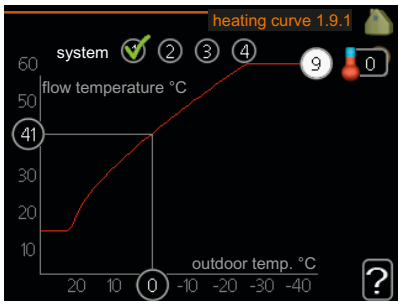
min. flow line temp. Setting minimum permitted flow line temperature.

room sensor settings Settings regarding the room sensor.

own curve Setting own heat curve.

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

Menu 1.9.1 - heating curve



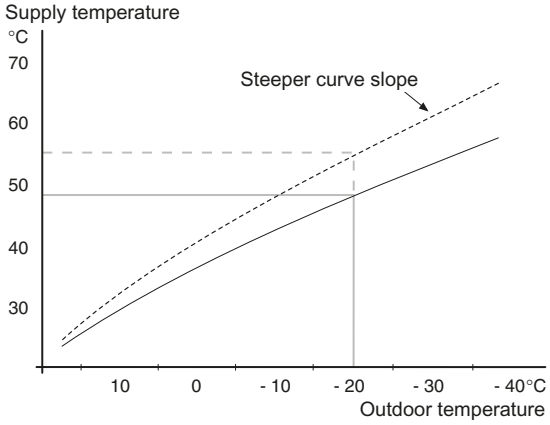
heating curve

Setting range: 0 - 15

Default value: 9

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

Curve coefficient



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

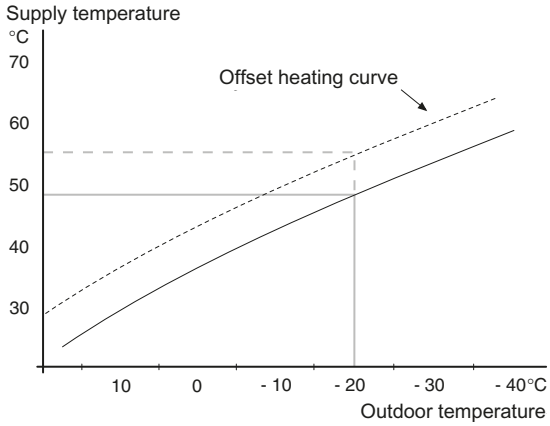
The optimum slope depends on the climate conditions in your location, if the house has radiators or under floor heating and how well insulated the house is.

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

Caution

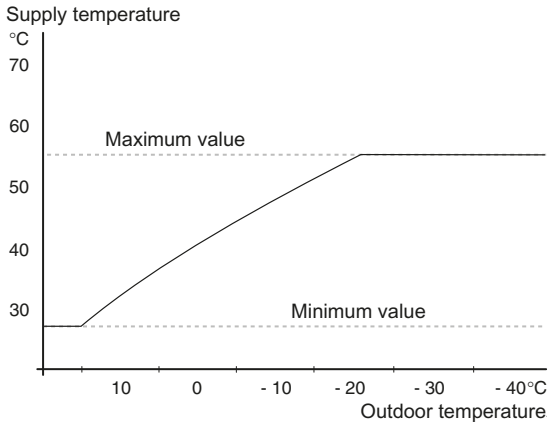
In the event of making fine adjustments for the indoor temperature, the heat curve must be offset up or down instead, this is done in menu 1.1 temperature.

Curve offset



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

Flow line temperature– maximum and minimum values



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

Caution

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

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

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

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

To select another heat curve (slope):

NOTE

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

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

To read off a heating curve:

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

TIP

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

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

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

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

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

Menu 1.9.2 - external adjustment

climate system

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

Default value: 0

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

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

Menu 1.9.3 - min. flow line temp.

climate system

Setting range: 5-70 °C

Default value: 20 °C

Set the minimum temperature on the supply temperature to the climate system. This means that VVM 310 never calculates a temperature lower than that set here.

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

TIP

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

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

Menu 1.9.4 - room sensor settings

factor system

Setting range: 0.0 - 6.0

Default value: 2.0

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

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

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

Menu 1.9.7 - own curve

supply temperature

Setting range: 0 – 80 °C

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

Caution

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

Menu 1.9.8 - point offset

outdoor temp. point

Setting range: -40 – 30 °C

Default value: 0 °C

change in curve

Setting range: -10 – 10 °C

Default value: 0 °C

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

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

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

TIP

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

Caution

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

Menu 2 - HOT WATER

Overview

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

Sub-menus

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

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

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

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

advanced Setting hot water circulation (accessory is required)

Menu 2.1 - temporary lux

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

Default value: "off"

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

Caution

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

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

When the time has run out VVM 310 returns to the mode set in menu 2.2.

Select “off" to switch off temporary lux.

Menu 2.2 - comfort mode

Setting range: economy, normal, luxury

Default value: normal

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

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

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

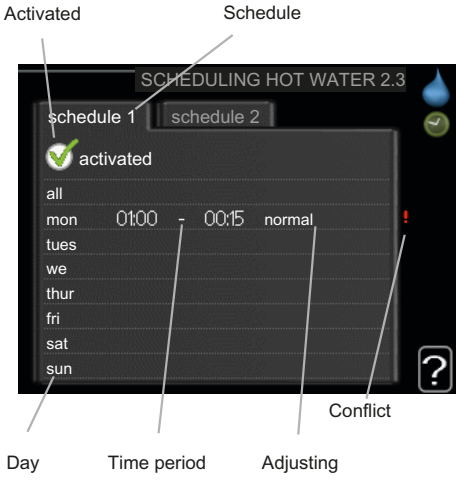
luxury: Lux mode gives the greatest possible amount of hot water. In this mode, the immersion heater, as well as the compressor, is used to heat hot water, which may increase operating costs.

Menu 2.3 - scheduling

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

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

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



Schedule: The schedule to be changed is selected here.

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

Day: Select which day or days of the week the schedule is to apply to here. To remove the scheduling for a particular day, the time for that day must be reset by setting

the start time to the same as the stop time. If the line "all" is used, all days in the period are set for these times.

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

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

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

TIP

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

Caution

If the stop time is earlier in the day than the start time it means that the period extends past midnight.

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

Menu 2.9 - advanced

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

Menu 2.9.2 - hot water recirc.

operating time

Setting range: 1 - 60 min

Default value: 3 min

downtime

Setting range: 0 - 60 min

Default value: 12 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.

Menu 3 - INFO

Overview

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

Sub-menus

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

service info shows temperature levels and settings in the indoor module.

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

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

alarm log shows the latest alarms.

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

Menu 3.1 - service info

Information about the heat pump's current operating status (e.g. current temperatures, information from the flow meter etc.) can be obtained here. No changes can be made.

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

Symbols in this menu:

 Compressor

 Heating

 Addition

 Hot water

Menu 3.2 - compressor info

Information about the compressor's operating status and statistics can be obtained here. No changes can be made.

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

Menu 3.3 - add. heat info

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

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

Menu 3.4 - alarm log

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

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

Menu 3.5 - indoor temp. log

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

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

To read off an average temperature

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

Menu 4 - MY SYSTEM

Overview

- 4 - MY SYSTEM
  - 4.1 - plus functions *
    - 4.1.1 - pool *
    - 4.1.4 - sms *
  - 4.2 - op. mode
  - 4.3 - my icons
  - 4.4 - time & date
  - 4.6 - language
  - 4.7 - holiday setting
  - 4.9.2 - auto mode setting
  - 4.9.3 - degree minute setting
  - 4.9.4 - factory setting user
  - 4.9.5 - schedule blocking

* Accessory needed.

Sub-menus

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

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

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

my icons Settings regarding which icons in the indoor module's user interface that are to appear on the hatch when the door is closed.

time & date Setting current time and date.

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

holiday setting Vacation scheduling heating and hot water comfort. Status information "set" is displayed if you set a vacation schedule but it is not active at the moment, "active" is displayed if any part of the vacation schedule is active, otherwise it displays " off".

advanced Settings of indoor module work mode.

Menu 4.1 - plus functions

Settings for any additional functions installed in VVM 310 can be made in the sub menus.

Menu 4.1.1 - pool (accessory is required)

start temp

Setting range: 5.0 - 80.0 °C

Default value: 22.0 °C

stop temperature

Setting range: 5.0 - 80.0 °C

Default value: 24.0 °C

Select whether the pool control is to be activated and within what temperatures (start and stop temperature) pool heating must occur.

When the pool temperature drops below the set start temperature and there is no hot water or heating requirement, VVM 310 starts pool heating.

Untick "activated" to switch off the pool heating.

Caution

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

Menu 4.1.4 - sms (accessory is required)

Make settings for the accessory SMS 40 here.

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

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

NOTE

Telephone numbers provided must be able to receive SMS messages.

Menu 4.2 - op. mode

op. mode

Setting range: auto, manual, add. heat only

Default value: auto

functions

Setting range: compressor, addition, heating

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

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

Operating mode auto

In this operating mode the indoor module automatically selects what functions are permitted.

Operating mode manual

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

Operating mode add. heat only

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

Caution

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

Caution

You cannot change from only additional heat if you do not have a slave connected (see Menu 5.2.2).

Functions

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

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

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

Menu 4.3 - my icons

You can select what icon should be visible when the door to VVM 310 is closed. You can select up to 3 icons. If you select more, the ones you selected first will disappear. The icons are displayed in the order you selected them.

Menu 4.4 - time & date

Set time and date and display mode here.

Menu 4.6 - language

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

Menu 4.7 - holiday setting

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

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

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

TIP

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

TIP

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

Menu 4.9 - advanced

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

Menu 4.9.1 - op. prioritisation

op. prioritisation

Setting range: 0 to 180 min

Default value: 20 min

Choose here how long the installation should work with each requirement if there are several requirements at the

same time. If there is only one requirement the installation only works with that requirement.

The indicator marks where in the cycle the installation is.

If 0 minutes is selected it means that requirement is not prioritised, but will only be activated when there is no other requirement.

Menu 4.9.2 - auto mode setting

stop heating

Setting range: -20 – 40 °C

Default values: 17

stop additional heat

Setting range: -20 – 40 °C

Default values: 5

filtering time

Setting range: 0 – 48 h

Default value: 24 h

When operating mode is set to "auto" the indoor module selects when start and stop of additional heat and heat production is permitted, dependent on the average outdoor temperature.

Select the average outdoor temperatures in this menu.

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

Caution

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

Menu 4.9.3 - degree minute setting

current value

Setting range: -3000 – 3000

start compressor

Setting range: -1000 – -30

Default value: -60

start addition

Setting range: -2000 – -30

Default value: -700

diff. between additional steps

Setting range: 0 – 1000

Default value: 100

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

Caution

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

Menu 4.9.4 - factory setting user

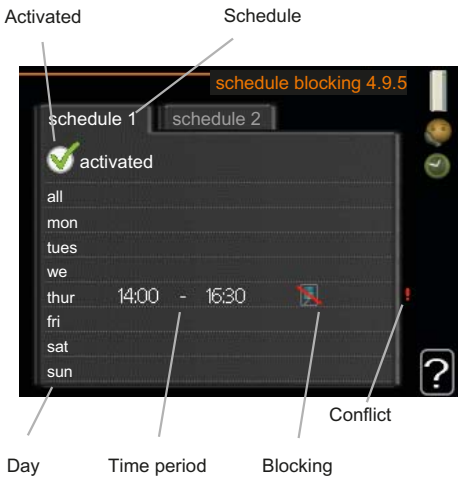
All settings that are available to the user (including advanced menus) can be reset to default values here.

Menu 4.9.5 - schedule blocking

The compressor and/or addition in the indoor module can be scheduled to be blocked for up to two different time periods here.

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

When scheduling is active the relevant blocking symbol is shown in the main menu on the symbol for the indoor module.



Schedule: The period to be changed is selected here.

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

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

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

Blocking: The desired blocking is selected here.

 Blocking the compressor in the outdoor unit.

 Blocking additional heat.

TIP

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

Caution

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

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

Caution

Long term blocking can cause reduced comfort and operating economy.

Menu 5 - SERVICE

Overview

5 - SERVICE	5.1 - operating settings	5.1.1 - hot water settings
		5.1.2 - max flow line temperature
		5.1.3 - max diff flow line temp.
		5.1.4 - alarm actions
		5.1.10 - 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
		5.1.19 - charge pump speed
		5.1.20.1 - EB101
	5.2 - system settings	5.2.2 - installed slaves
		5.2.4 - accessories
	5.3 - accessory settings	5.3.3 - extra climate system *
		5.3.2 - shunt controlled add. heat *
		5.3.3 - extra climate system *
		5.3.4 - solar heating *
		5.3.7 - external addition
	5.4 - soft in/outputs	
	5.5 - factory setting service	
	5.6 - forced control	
	5.7 - start guide	
	5.8 - quick start	
	5.9 - floor drying function	
	5.10 - change log	

* Accessory needed.

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 in and outputs on the input circuit board (AA3).

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

forced control Forced control of the different components in the 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.

NOTE

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

economy

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

Factory setting start temp. economy: 44 °C

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

Factory setting stop temp. economy: 47 °C

normal

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

Factory setting start temp. normal: 47 °C

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

Factory setting stop temp. normal: 50 °C

luxury

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

Factory setting start temp. lux: 52 °C

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

Factory setting stop temp. lux: 55 °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: 5-70 °C

Default value: 60 °C

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

Caution

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

Check the max floor temperature with your floor supplier.

Menu 5.1.3 - max diff flow line temp.

max diff compressor

Setting range: 1 – 25 °C

Default value: 10 °C

max diff addition

Setting range: 1 – 24 °C

Default value: 7 °C

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

max diff compressor

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

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

max diff addition

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

Menu 5.1.4 - alarm actions

Caution

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

Menu 5.1.10 - op. mod heat med pump

op. mode

Setting range: auto, continuous

Default value: auto

Set the operating mode of the heating medium pump here.

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

continuous: Continuous operation.

Menu 5.1.11 - pump speed heating medium

op. mode

Setting range: auto, manual

Default value: auto

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

auto: The heating medium pump controls the speed for optimum operation.

manual: The speed of the heating medium pump is adjustable between 0 and 100%.

Menu 5.1.12 - internal electrical addition

max connected el. add.

Setting range: 0–12 kW

Factory setting: 8 kW

fuse size

Setting range: 1 - 200 A

Default values: 16 A

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

The results of these checks appear just below where the checks were activated.

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: 0,0-25,0

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 5.1.19 - charge pump speed

op. mode

Setting range: auto, manual

Default value: auto

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

auto: The charge pump selects optimal speed for the current operating mode for VVM 310.

manual: The speed of the charge pump is adjustable between 0 and 100%.

Menu 5.1.20.1 - EB101

EB101

setting A4

Default value: 20 minutes

setting A7

Default value: -20 °C

setting A8

Default value: 55 minutes

setting A9

Default value: -3 °C

setting A10

Default value: 20 °C

setting A11

Default value: 7 minutes

Make settings for the installed slaves here. To see what settings you can make, see installation manual for the relevant installed slave.

Menu 5.2 - system settings

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

Menu 5.2.2 - installed slaves

If a slave is connected to the master installation, set it here.

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

search installed slaves

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

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 5.3.3 - extra climate system

mixing valve amplifier

Setting range: 0.1 –10.0

Default value: 1.0

mixing valve step delay

Setting range: 10 – 300 s

Default values: 30 s

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

See the accessory installation instructions for function description.

Menu 5.3.4 - solar heating

start delta-T

Setting range: 1 - 40 °C

Default value: 8 °C

stop delta-T

Setting range: 0 - 40 °C

Default value: 4 °C

max. tank temperature

Setting range: 70 - 85 °C

Default value: 85 °C

max. solar collector temp.

Setting range: 80 - 200 °C

Default value: 125 °C

anti-freeze temperature

Setting range: -20 - +20 °C

Default value: 2 °C

start solar collector cooling

Setting range: 80 - 200 °C

Default value: 110 °C

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

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

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

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

Menu 5.3.7 - 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.

See the accessory installation instructions for function description.

Menu 5.4 - soft in/outputs

Here you can select which in/output on the input circuit board (AA3) the external contact function (page 26) is to be connected to.

Selectable inputs on terminal block AUX1-5 (AA3-X6:9-18) and output AA3-X7 (on the input circuit 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.

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 30 for more information about the start guide.

Menu 5.8 - quick start

It is possible to start the compressor from here.

Caution

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

Caution

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

Menu 5.9 - floor drying function

length of period 1 - 3, 5-7

Setting range: 0 - 30 days

Default value: 2 days

temp. period 1 - 3, 5-7

Setting range: 15 - 70 °C

Default value:

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

length of period 4

Setting range: 0 - 30 days

Default value: 3 days

temp. period 4

Setting range: 15 - 70 °C

Default value: 45 °C

Set the function for under floor drying here.

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

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

NOTE

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

TIP

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

Menu 5.10 - change log

Read off any previous changes to the control system here.

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

NOTE

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

9 Service

Service actions

NOTE

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) to "⚠". This means that:

- The status lamp illuminates yellow.
- The display is not lit and the control computer is not connected.
- The temperature at the immersion heater is controlled by the thermostat (FD1-BT30). It is set between 35 and 45 °C.
- Only the circulation pumps and electrical addition are active. The electrical addition power in emergency mode is set in the immersion heater card (AA1). See page 24 for instructions.

Emptying the hot water coil

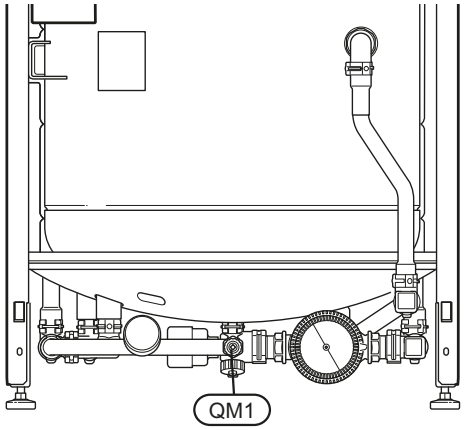
The hot water coil is most easily drained by detaching the cold water pipe at the coils's entry to the reservoir.

Draining the climate system

In order to carry out service on the climate system, it may be easier to drain the system first using drain valve (QM1).

NOTE

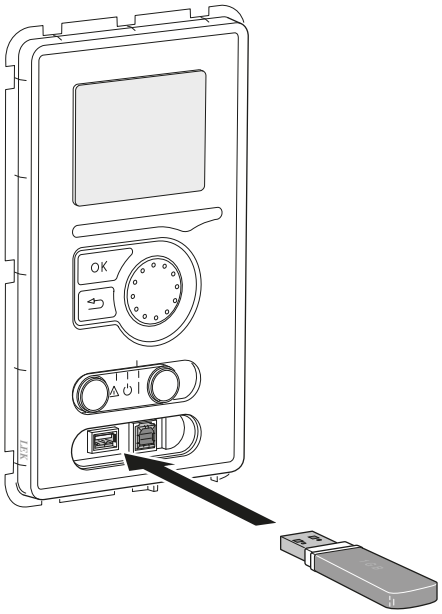
There may be some hot water when draining the heating medium side/climate system. There is a risk of scalding.



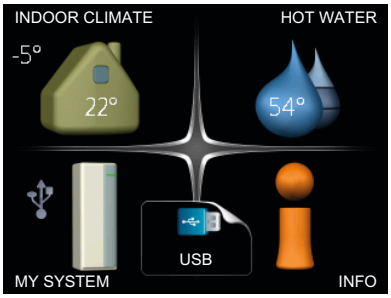
Temperature sensor data

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

USB service outlet



VVM 310 is equipped with a USB socket in the display unit. This USB socket can be used to connect a USB memory to update the software, save logged information and handle the settings in VVM 310.



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

Menu 7.1 - update firmware

This allows you to update the software in VVM 310.

NOTE

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

start updating

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

If you responded"yes" to the previous question the update starts and you can now follow the progress of the update on the display. When the update is complete VVM 310 restarts.

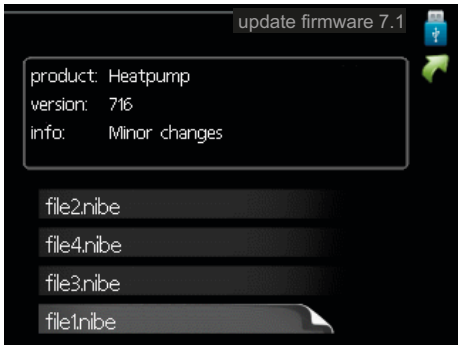
NOTE

A software update does not reset the menu settings in VVM 310.

NOTE

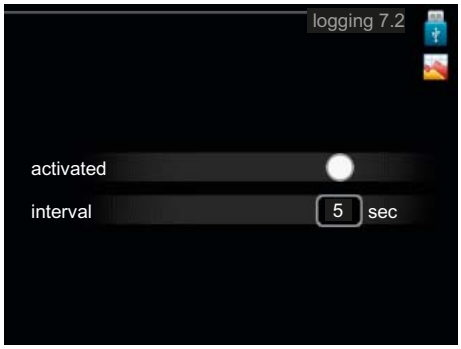
If the update is interrupted before it is complete (for example power cut etc.) the software can be reset to the previous version if the OK button is held in during start up until the green lamp starts to illuminate (takes about 10 seconds).

choose another file



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

Menu 7.2 - logging



Setting range: 1 s – 60 min

Default setting range: 5 s

Set whether the present measurement values from VVM 310 are to be saved in a log on the USB memory.

Log for longer periods

1. Set the desired interval between loggings.
2. Tick "activated".
3. Mark "read log settings" and press the OK button.
4. The present values from VVM 310 are saved in a file in the USB memory at the set interval until "activated" is unticked.

Caution

Untick "activated" before removing the USB memory.

Menu 7.3 - manage settings

Here you can manage (save as or retrieve from) all the menu settings (user and service menus) in VVM 310 with a USB memory.

Via "save settings" you save the menu settings to the USB memory in order to restore them later or to copy the settings to another VVM 310.

NOTE

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

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

NOTE

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

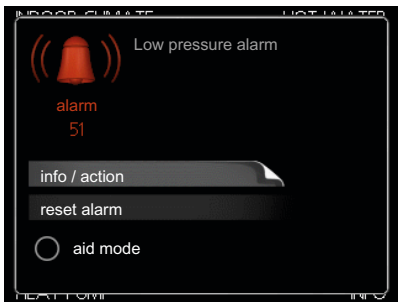
10 Disturbances in comfort

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

Info-menu

All the indoor module measurement values are gathered under menu 3.1 in the indoor module menu system. Looking through the values in this menu can often simplify finding the fault source.

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. In the display, by turning the control knob and pressing the OK button, you can see the type of alarm it is and reset it. You can also choose to set the 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 most cases it is enough to select "reset alarm" to correct the problem that caused the alarm. If a green light illuminates after selecting "reset alarm" the alarm has been remedied. If a red light is still visible and a menu called "alarm" is visible in the display, the problem that caused the alarm remains. If the alarm disappears and then returns, see the troubleshooting section (page 57).

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

Caution

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

Troubleshooting

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

Basic actions

Start by checking the following possible fault sources:

- The switch's (SF1) position.
- Group and main fuses of the accommodation.
- The property's earth circuit breaker.
- The indoor module's miniature circuit breaker (FA1).
- The indoor module's temperature limiter (FD1).
- Correctly set load monitor (if installed).

Low hot water temperature or a lack of hot water

- Too high domestic water flow.
  - Reduce the domestic water flow, see diagram of hot water capacity on page 61.
- Indoor module in incorrect operating mode.
  - If mode "manual" is selected, select "addition".
- Large hot water consumption.
  - Wait until the hot water has heated up. Temporarily increased hot water capacity (temporary lux) can be activated in menu 2.1.
- Too low hot water setting.
  - Enter menu 2.2 and select a higher comfort mode.

Low room temperature

- Closed thermostats in several rooms.
- Indoor module 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 of the heating curve. If the room temperature is only low in cold weather the curve slope in menu 1.9.1 "heating curve" needs adjusting up.
- "Holiday mode" activated in menu 1.3.4.
  - Enter menu 1.3.4 and select "Off".
- External switch for changing the room heating activated.
  - Check any external switches.

- Air in the climate system.
  - Vent the climate system (see page 57).
- Closed valves (QM20), (QM32)to the climate system.
  - Open the valves.

High room temperature

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

Low system pressure

- Not enough water in the climate system.
  - Fill the climate system with water (see page 29).

The compressor does not start

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

11 Accessories

Active cooling. ACS 310

Part no. 067 248

Auxiliary relay HR 10

Part no. 089 423

Base extension EF 45

Part no. 067 152

Communications module MODBUS 40

MODBUS 40 enables VVM 310 to be controlled and monitored using a DUC (computer sub-center) in the building. Communication occurs using MODBUS-RTU.

Part no. 067 144

Communications module SMS 40

SMS 40 enables VVM 310 to be controlled and monitored via SMS messages. The mobile application "NIBE Mobile App" can be used with a mobile telephone with the Android operating system .

Part no. 067 073

Control unit for external heat source

DEH 310 (oil/electricity/gas)

Part no. 067 249

Energy measurement kit EMK 310*

Part no. 067 246

*EMK 310 is included in Germany, Switzerland and Austria..

External electrical addition ELK

This accessory requires accessory DEH 310 (step controlled additional heat).

ELK 15

Immersion heater

15 kW, 3 x 400 V

Part no. 069 022

Extra shunt group ECS 40/ECS 41

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

ECS 40 (Max. 80 m²)	Part no. 067 287
ECS 41 (Min. 80 m²)	Part no. 067 288

Pool heating POOL 310

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

Part no. 067 247

Room sensor RTS 40

Part no. 067 065

Room unit RMU 40

RMU 40 means that control and monitoring of the heat pump can be carried out in a different part of the accommodation to where VVM 310 is located.

Part no. 067 064

SCA 35

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

Part no. 067 245

Top cabinet

Top cabinet to room height 2050, 2150, 2200-2450 mm.

2050 mm

Part no. 056 177

2150 mm

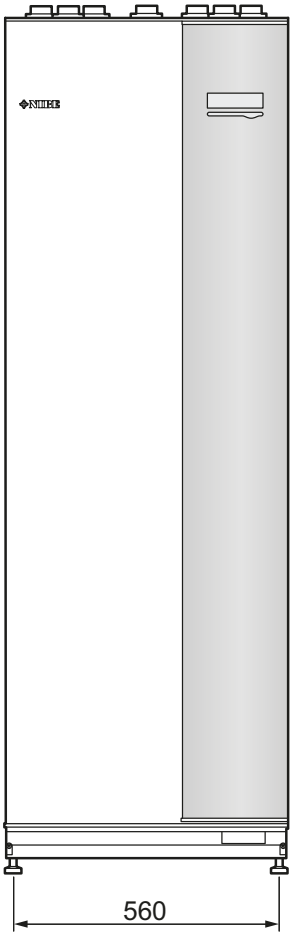
Part no. 056 178

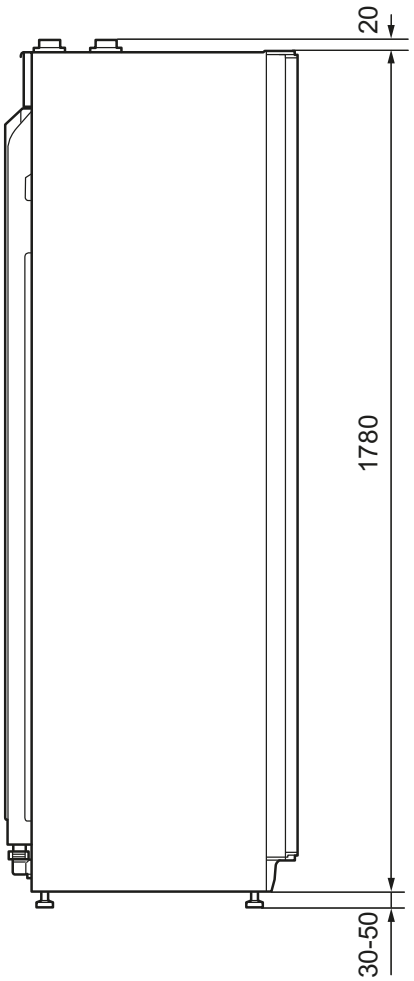
2200-2450 mm

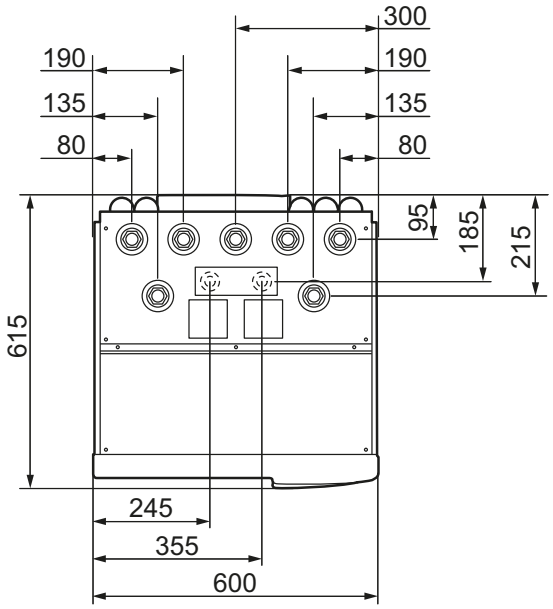
Part no. 056 179

12 Technical data

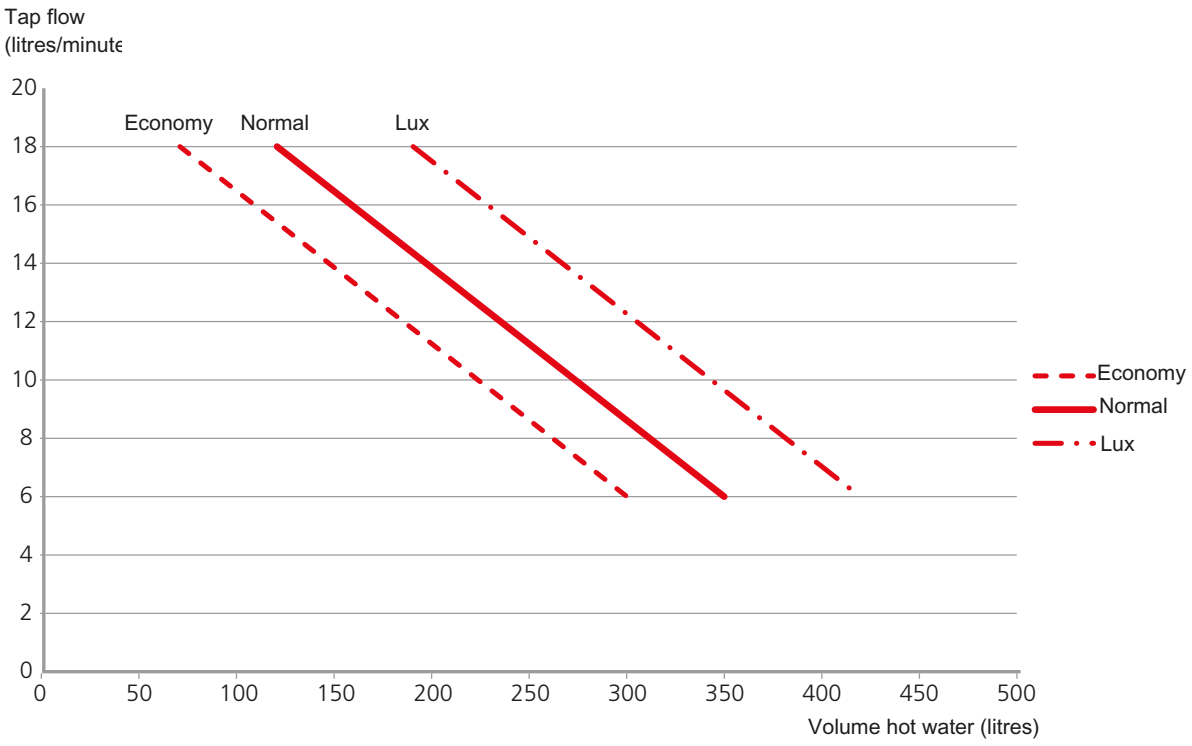
Dimensions and setting-out coordinates







Hot water capacity



Technical specifications

CE IP 21

3x400V

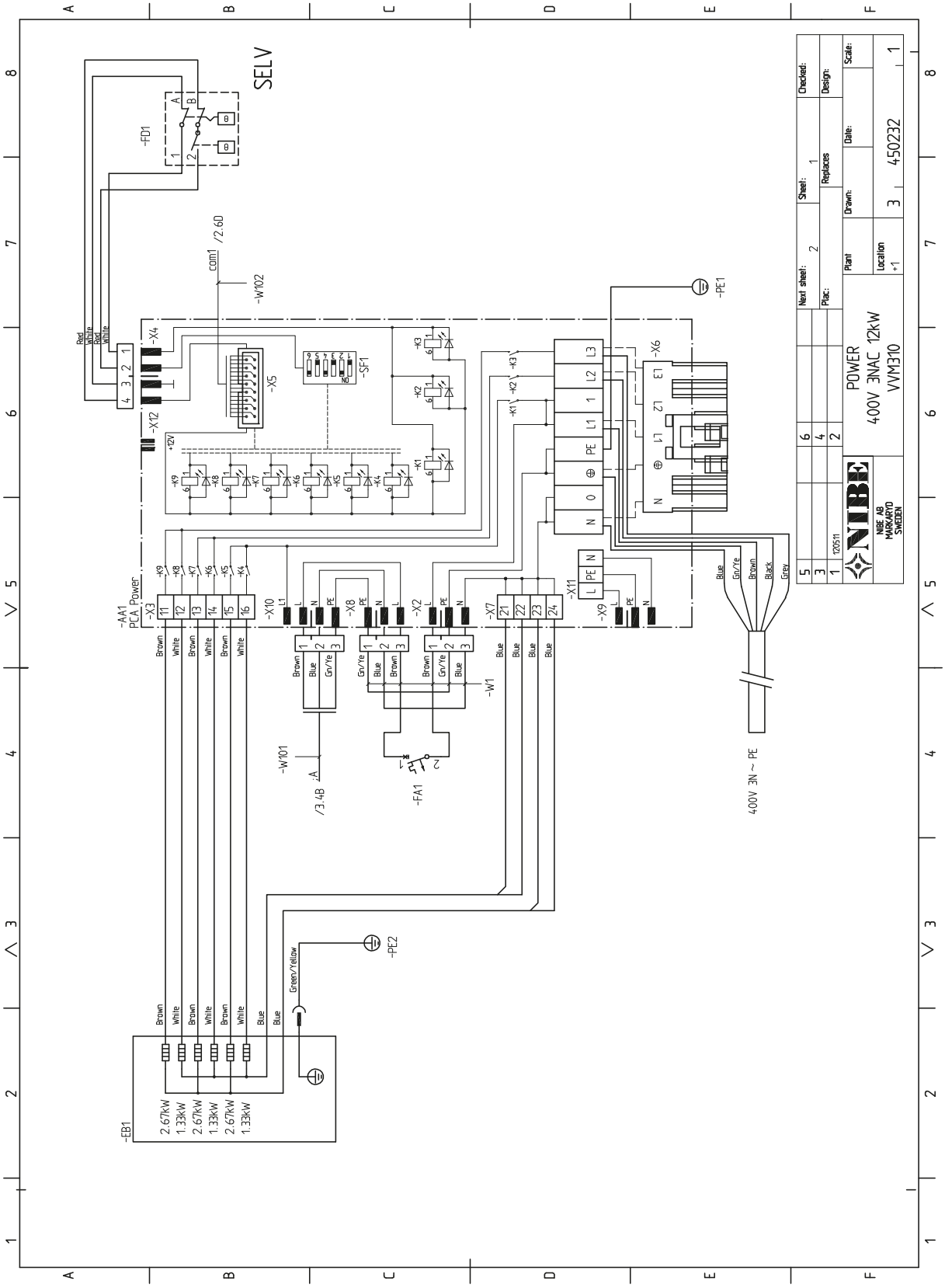
3x400V		
Maxim heat pump output NIBE F2025 with program version 51 or later [1)]	kW	14
Maxim heat pump output NIBE F2026 with program version 51 or later [1)]	kW	10
Maximum heat pump output NIBE F2300 [1)]	kW	14
Maximum heat pump output NIBE F2040 [1)]	kW	12
Additional power	kW	12
Electrical data		
Rated voltage		400V 3NAC 50 Hz
Max operating current	A	19.4
Fuse	A	20
Output, Heating medium pump	W	10 – 110
Output, charge pump	W	10 – 110
IP class		IP 21
Heating medium circuit		
Energy class circ-pump		low energy
Energy class charge pump		low energy
Max system pressure heating medium	MPa	0.3 (3 bar)
Min flow	litres/h	500
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.

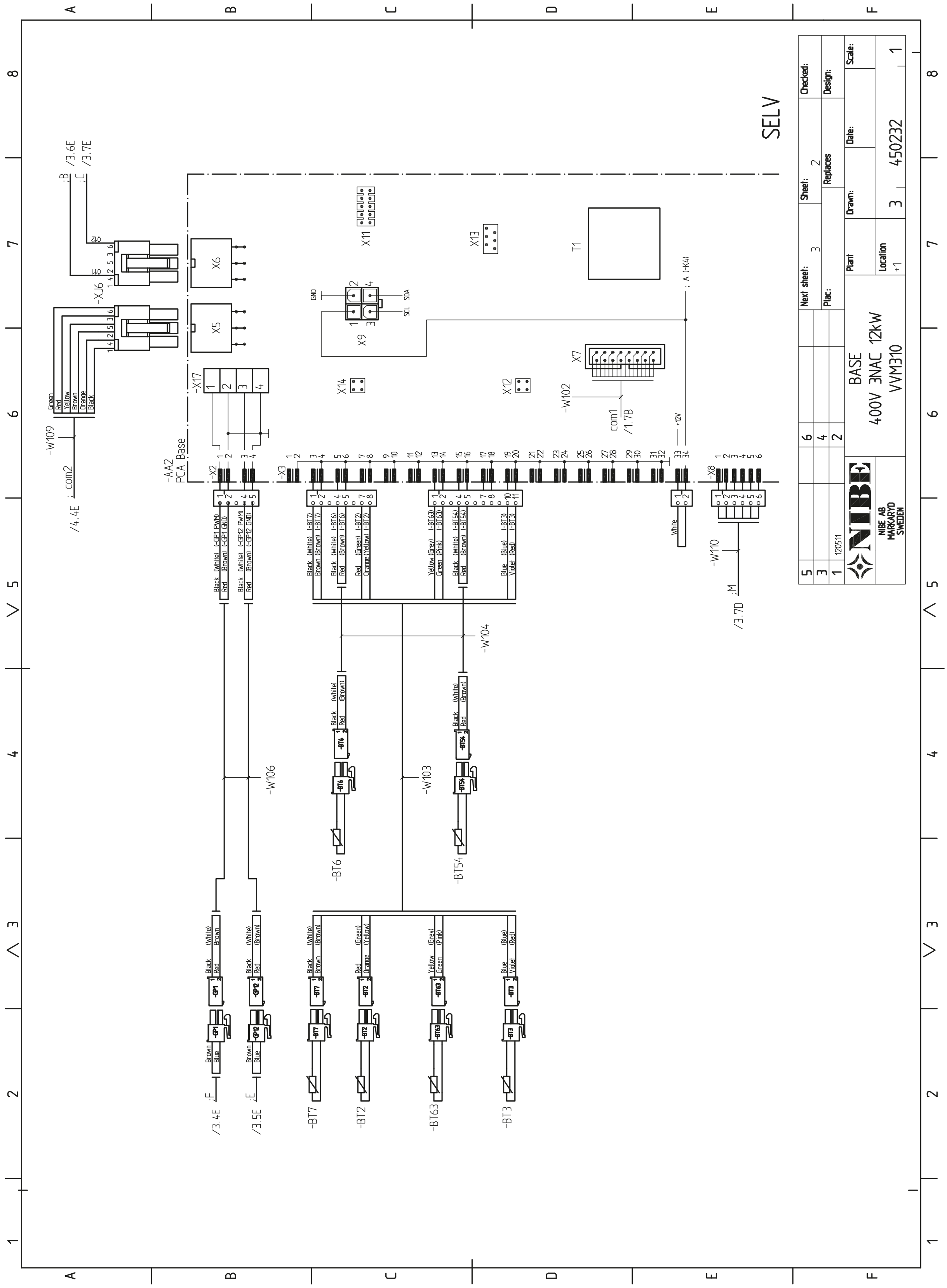
[1)]Applies with an outdoor air heat pump at 7/45 °C (outdoor temperature/flow line temperature)

Miscellaneous

Miscellaneous		
Indoor module		
Volume loop	litre	17
Volume, total indoor module	litre	270
Volume buffer vessel	litre	50
Cut-off pressure, loop	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 255-3		
Tap volume 40 °C at Eco- comfort	litre	See diagram, page 61
Tap volume 40 °C at Normal comfort	litre	See diagram, page 61
Tap volume 40 °C at Lux comfort	litre	See diagram, page 61
Dimensions and weight		
Width	mm	600
Depth	mm	615
Height (without base)	mm	1800
Height (with base)	mm	1830 – 1850
Required ceiling height	mm	1910
Weight (excl. packaging and without water)	kg	140
Part number, EMK 310 included (only for Germany, Switzerland and Austria)		069 084
Part no.		069 430

Electrical circuit diagram, 3 x 400V

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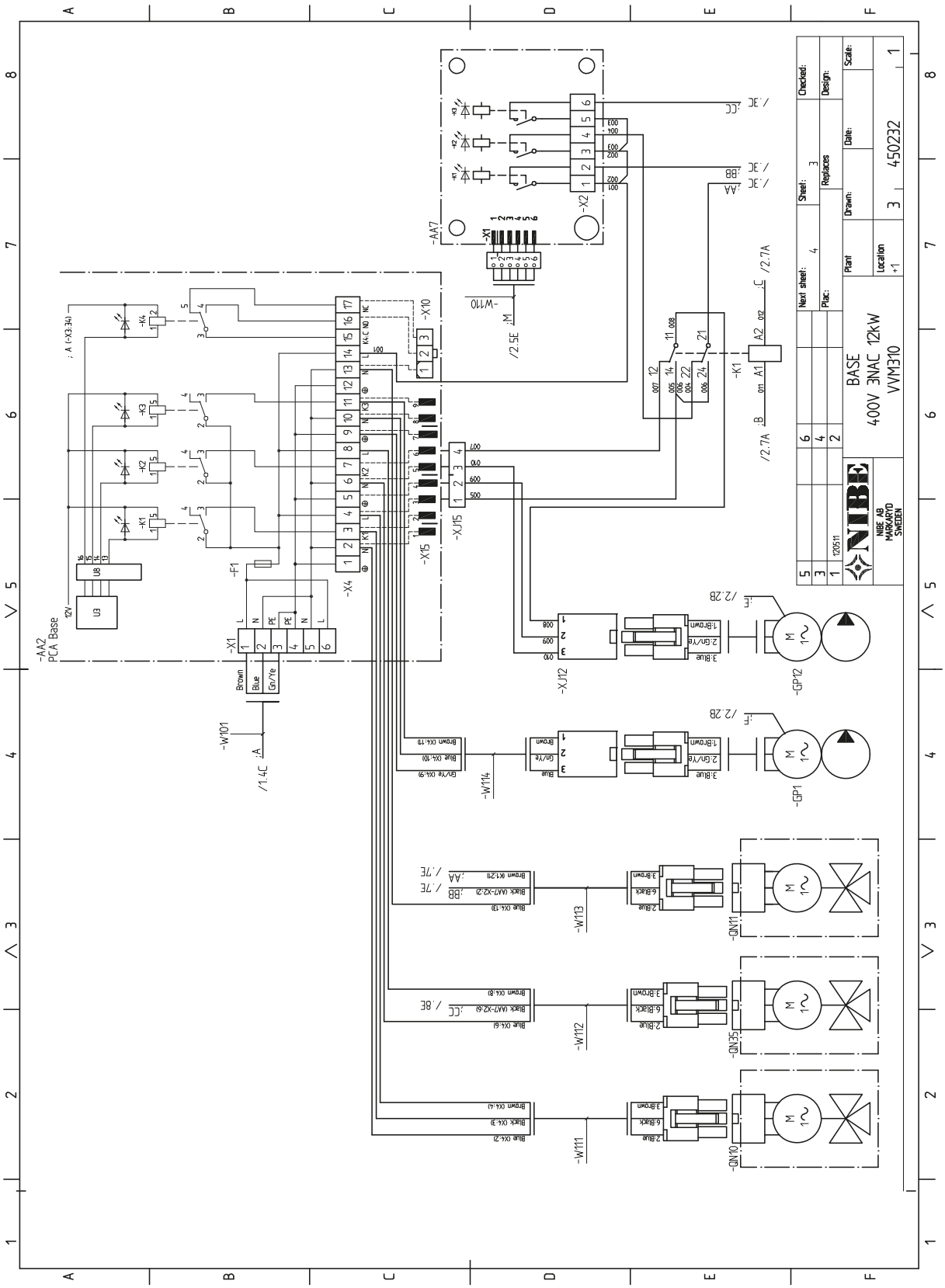
BASE
400V 3NAC 12kW
VVM310
450232
NIBE AB
MARKARYD
SWEDEN


BASE
400V 3NAC 12kW
VVM310
450232
NIBE AB
MARKARYD
SWEDEN
-AA2
PCA Base
-AA7
-W110
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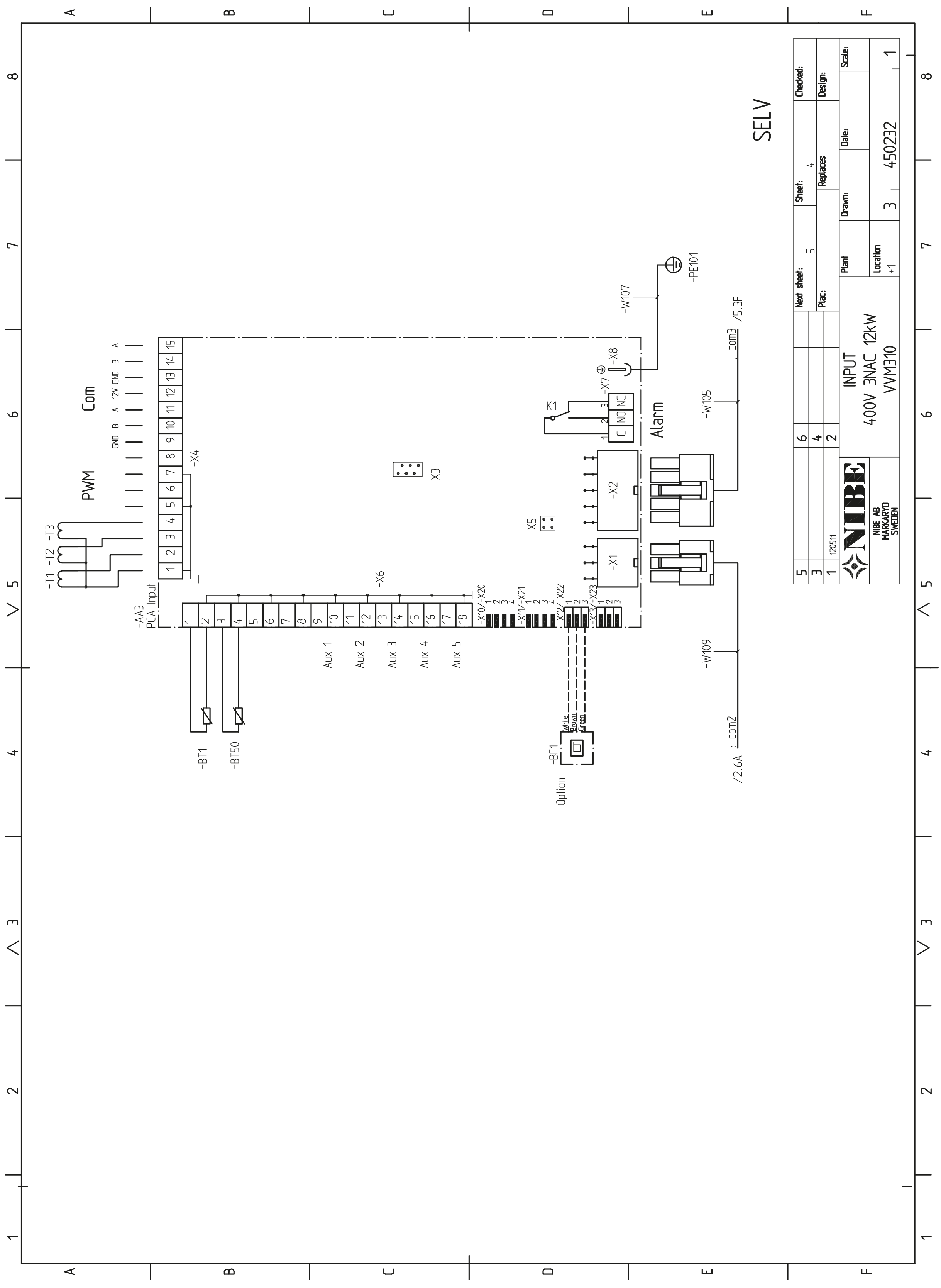
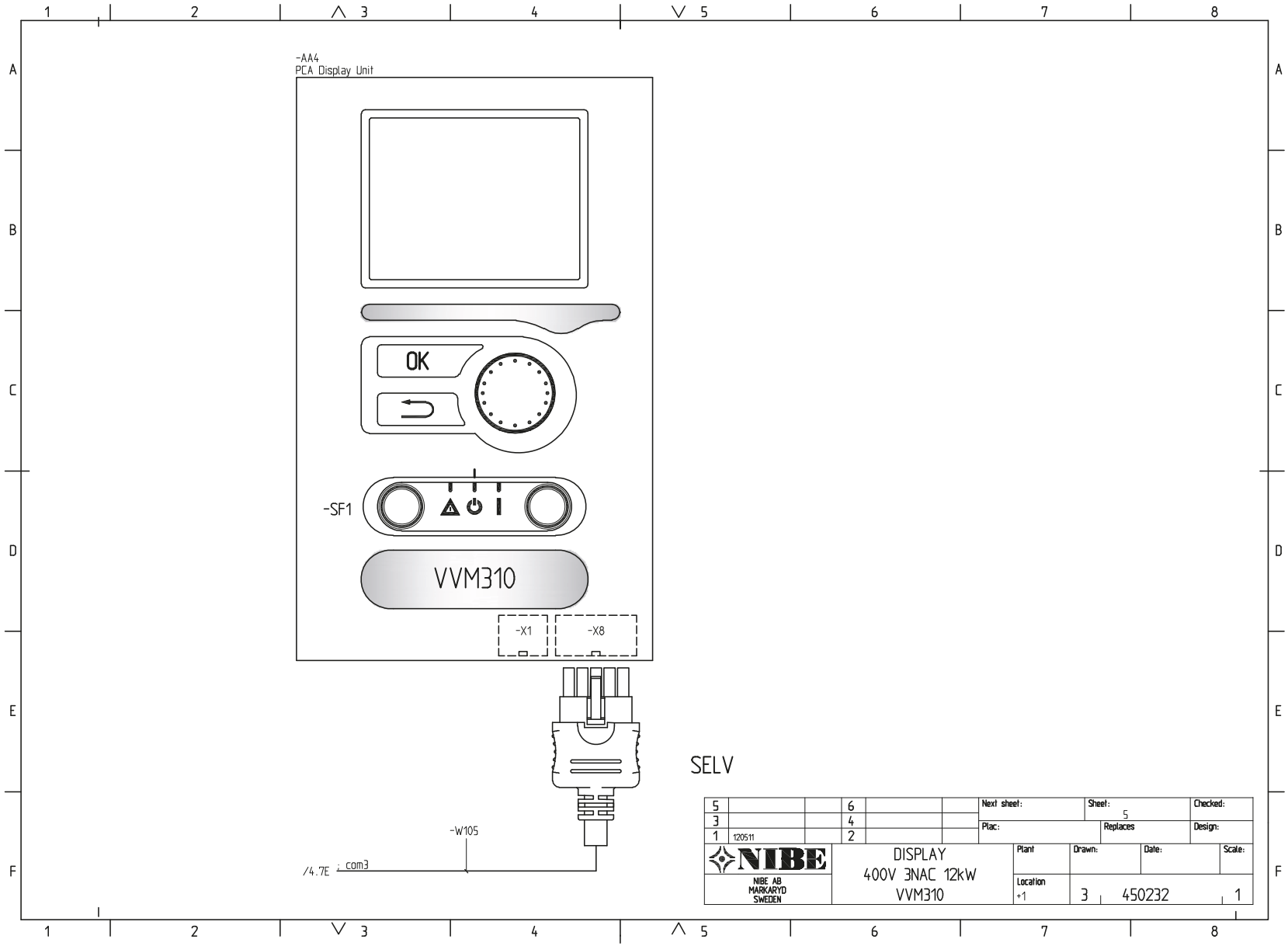
-W111
-W112
-W113
-W114
-GP1
-GP12
-GN10
-GN35
-GN11
-K1
-K2
-K3
-K4
-F1
-X1
-X2
-X4
-X10
-X15
-XJ15
-XJ12
-X1
-X2


SELV
INPUT
400V 3NAC 12kW
VVM310
450232
NIBE AB
MARKARYD
SWEDEN
Alarm
PWM
Com
-AA3
PCA Input
Aux 1
Aux 2
Aux 3
Aux 4
Aux 5
-BT1
-BT50
-BF1
Option
-T1 -T2 -T3
-X1
-X2
X3
-X4
X5
-X6
K1
-W105
-W107
-W109
-PE101
; com2
/2.6A
; com3
/5.3F


-AA4
PCA Display Unit
OK
-SF1
VVM310
-X1
-X8
-W105
/4.7E
com3
SELV
Next sheet:
Sheet:
5
Checked:
Plac:
Replaces
Design:
NIBE
NIBE AB
MARKARYD
SWEDEN
DISPLAY
400V 3NAC 12kW
VVM310
Plant
Drawn:
Date:
Scale:
Location
+1
3 450232 1

13 Item register

Item register

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www.nibe.eu

231175