IHB EN 1951-1
531169

INSTALLER MANUAL

Indoor module
NIBE VVM S320 *UK 1x230V*



Quick guide

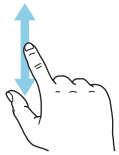
NAVIGATION

Select



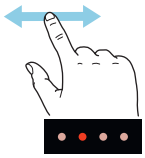
Most options and functions are activated by lightly pressing on the display with your finger.

Scroll



If the menu has several sub-menus, you can see more information by dragging up or down with your finger.

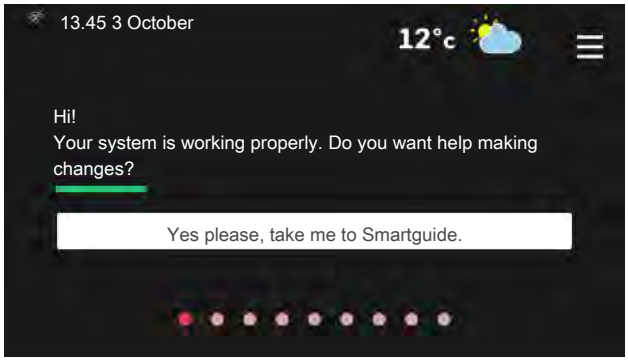
Browse



The dots at the bottom edge show that there are more pages.

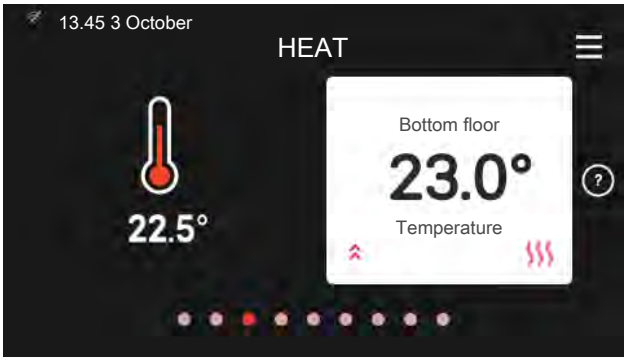
Drag to the right or left with your finger to browse between the pages.

Smartguide



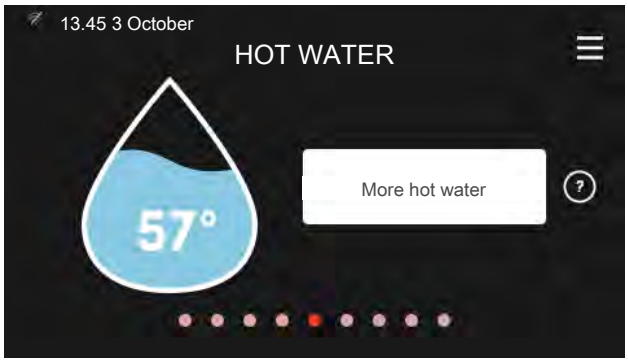
Smartguide helps you both to view information about the current status and to make the most common settings easily. The information that you see depends on the product you have and the accessories that are connected to the product.

Setting the indoor temperature.



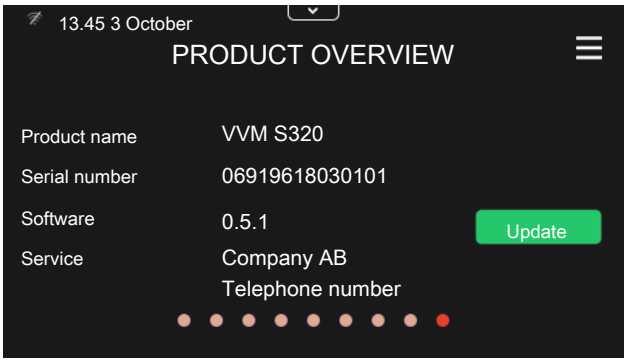
You can set the temperature for your installation's climate system here.

Increasing hot water temperature



Here, you can start or stop a temporary increase in the hot water temperature.

Product overview



Here, you can find information about product name, the product's serial number, the version of the software and service. When there is new software to download, you can do it here (provided that VVM S320 is connected to myUplink).

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1 Important information

Safety information

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

The manual must be left with the customer.

Symbols

NOTE

This symbol indicates danger to person or machine .

Caution

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

TIP

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

Marking

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

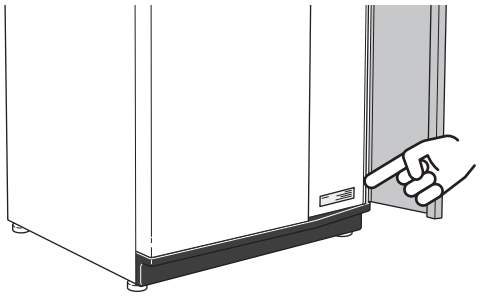
IPX1B Classification of enclosure of electro-technical equipment.

Danger to person or machine.

Read the User Manual.

Serial number

The serial number can be found at the bottom right on VVM S320, in the display on the home screen "Product overview" and on the type plate (PZ1).



Caution

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

Country specific information

UNITED KINGDOM

This installation is subject to building regulation approval, notify the local Authority of intention to install.

Use only manufacturer's recommended replacement parts.

For more information see nibe.co.uk.

Benchmark places responsibilities on both manufacturers and installers. The purpose is to ensure that customers are provided with the correct equipment for their needs, that it is installed, commissioned and serviced in accordance with the manufacturers instructions by competent persons and that it meets the requirements of the appropriate Building Regulations. The Benchmark Checklist can be used to demonstrate compliance with Building Regulations and should be provided to the customer for future reference.

Installers are required to carry out the installation, commissioning and servicing work in accordance with the Benchmark Code of practice which is available from the Heating and Hotwater Industry Council who manage and promote the Scheme. Visit centralheating.co.uk for information.

Warranty and insurance information

Thank you for installing a new NIBE heat pump in your home.

NIBE heat pumps are manufactured in Sweden to the very highest standard so we are pleased to offer our customers a comprehensive guarantee.

The product is guaranteed for 24 months for parts and labour from the date of installation or 33 months from the date of manufacture, whichever is the shorter.

The NIBE guarantee is based on the unit being installed and commissioned by a NIBE accredited installer, serviced every year and the Benchmark documents completed. Where this condition is not met, any chargeable spare parts or components issued within the applicable guarantee period still benefit from a 12 month warranty from the date of issue by the manufacturer.

We recommend the installer completes and returns as soon as possible, your guarantee registration card or completes the guarantee form on the NIBE website www.nibe.co.uk.

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*	*Signa-ture*	*Date*
Connecting VVM S320 to heat pump				
	System flushed			
	System vented			
	Expansion vessel			
	Particle filter			
	Safety valve			
	Shut off valves			
	Boiler pressure			
	Connected according to outline diagram			
	Flows according to table in section "Minimum system flows", chapter "Pipe connections"			
Cold and hot water				
	Shut off valves			
	Mixing valve			
	Safety valve			
	Pressure reduction valve			
	Tundish			
	Expansion vessel			
Electrical connections				
	Connected communication			
	Circuit fuses			
	Fuses, indoor module			
	Fuses property			
	Outside sensor			
	Room sensor			
	Current sensor			
	Safety breaker			
	Earth circuit-breaker			
	Setting emergency mode			

✔	*Description*	*Notes*	*Signature*	*Date*
Miscellaneous				
	Warranty			
	Benchmark checklist			
	Docked to			

Outdoor modules

COMPATIBLE AIR/WATER HEAT PUMPS

In some air/water heat pumps, manufactured before or during 2019, the circuit board must be updated in order to be compatible with VVM S320.

NIBE SPLIT HBS 05

AMS 10-6
Part no. 064 205

HBS 05-6
Part no. 067 578

AMS 10-8
Part no. 064 033

HBS 05-12
Part no. 067 480

AMS 10-12
Part no. 064 110

HBS 05-12
Part no. 067 480

F2040

F2040-6
Part no. 064 206

F2040-8
Part no. 064 109

F2040-12
Part no. 064 092

F2120

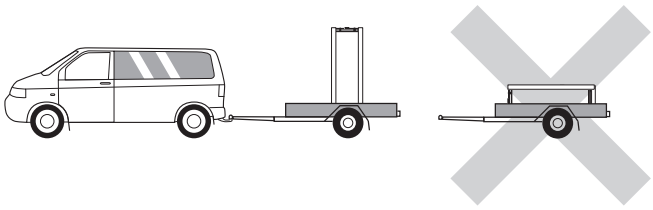
F2120-8 1x230V
Part no. 064 134

F2120-12 1x230V
Part no. 064 136

2 Delivery and handling

Transport

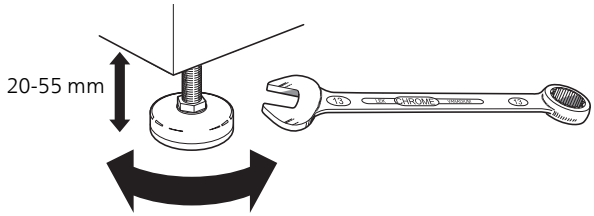
VVM S320 should be transported and stored vertically in a dry place. However, the VVM S320 may be carefully laid on its back when being moved into a building.



Assembly

- Place VVM S320 on a solid foundation indoors that can take its weight. Use the product's adjustable feet to obtain a horizontal and stable set-up.

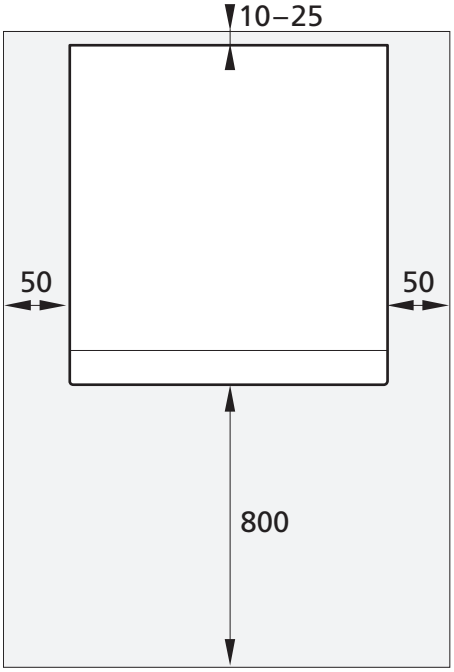
  The space where VVM S320 is located must be frost-free.



- Because water can emerge from the safety valve, the area where VVM S320 is located must be provided with floor drainage.

INSTALLATION AREA

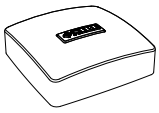
Leave a free space of 800 mm in front of the product. All service on VVM S320 can be carried out from the front.



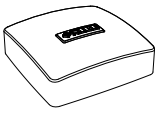
NOTE

Leave 10 – 25 mm free space between VVM S320 and the wall behind for routing cables and pipes.

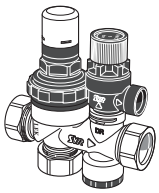
Supplied components



1 x Outdoor temperature sensor



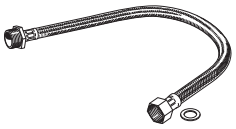
1 x Room sensor



1 x Valve connector (Pressure reduction valve and safety valve)



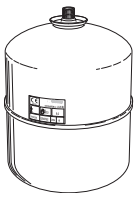
2 x Tundish



1 x Armoured hose (expansion vessel)



1 x Connector with cable



1 x Expansion vessel with holder
(enclosed separately)

LOCATION

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

Handling panels

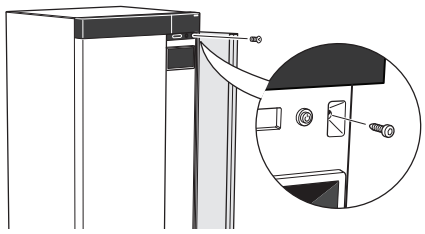
OPEN FRONT HATCH

Press the hatch's top left corner to open it.

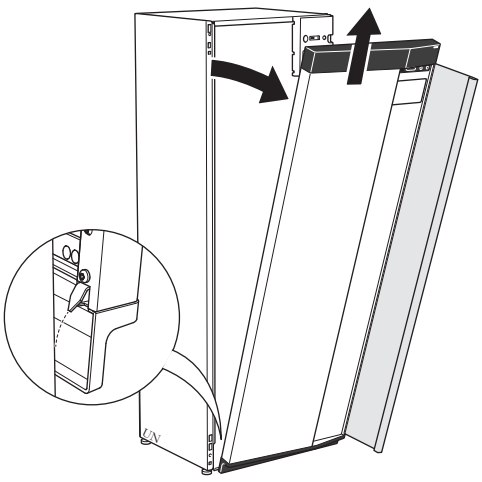


REMOVE THE FRONT

1. Remove the screw in the hole next to the on/off button (SF1).

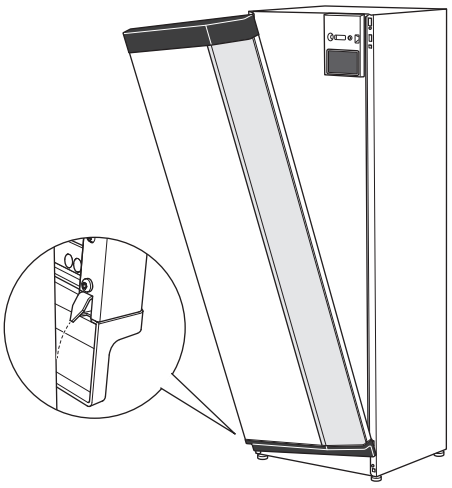


2. Pull the panel's top edge towards you and lift diagonally upwards to remove it from the frame.

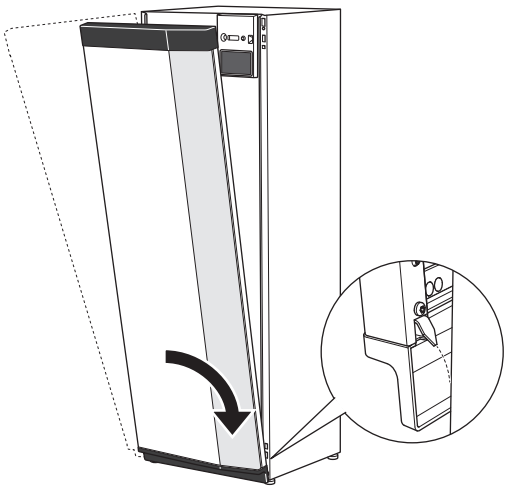


ASSEMBLE THE FRONT

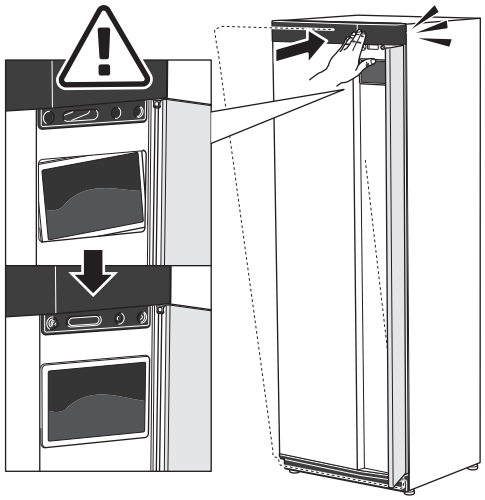
1. Hook one bottom corner of the front onto the frame.



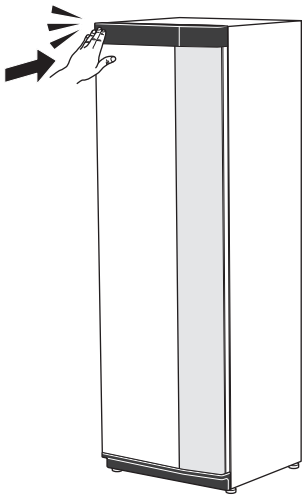
2. Hook the other corner in place.



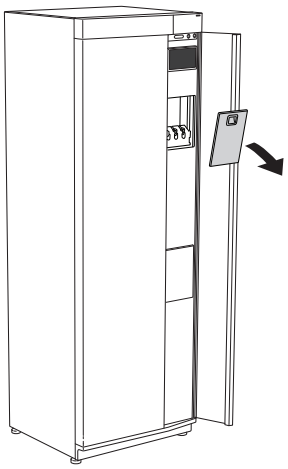
3. Check the display is straight. Adjust if necessary.



4. Press the top of the front section against the frame and screw it into place.



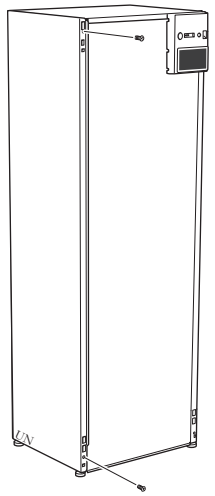
OPEN VENT COVER



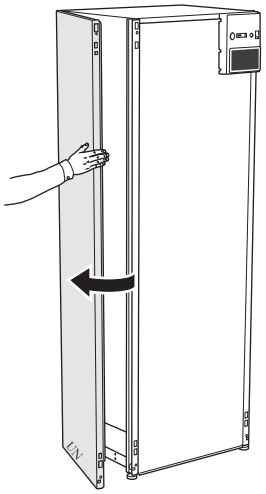
REMOVE SIDE PANEL

The side panels can be removed to facilitate the installation.

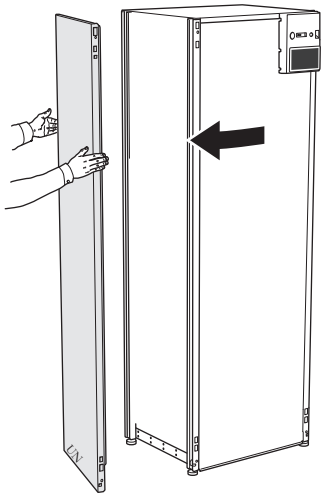
1. Remove the screws from the upper and lower edges.



2. Twist the panel slightly outwards.



3. Move the panel outwards and backwards.

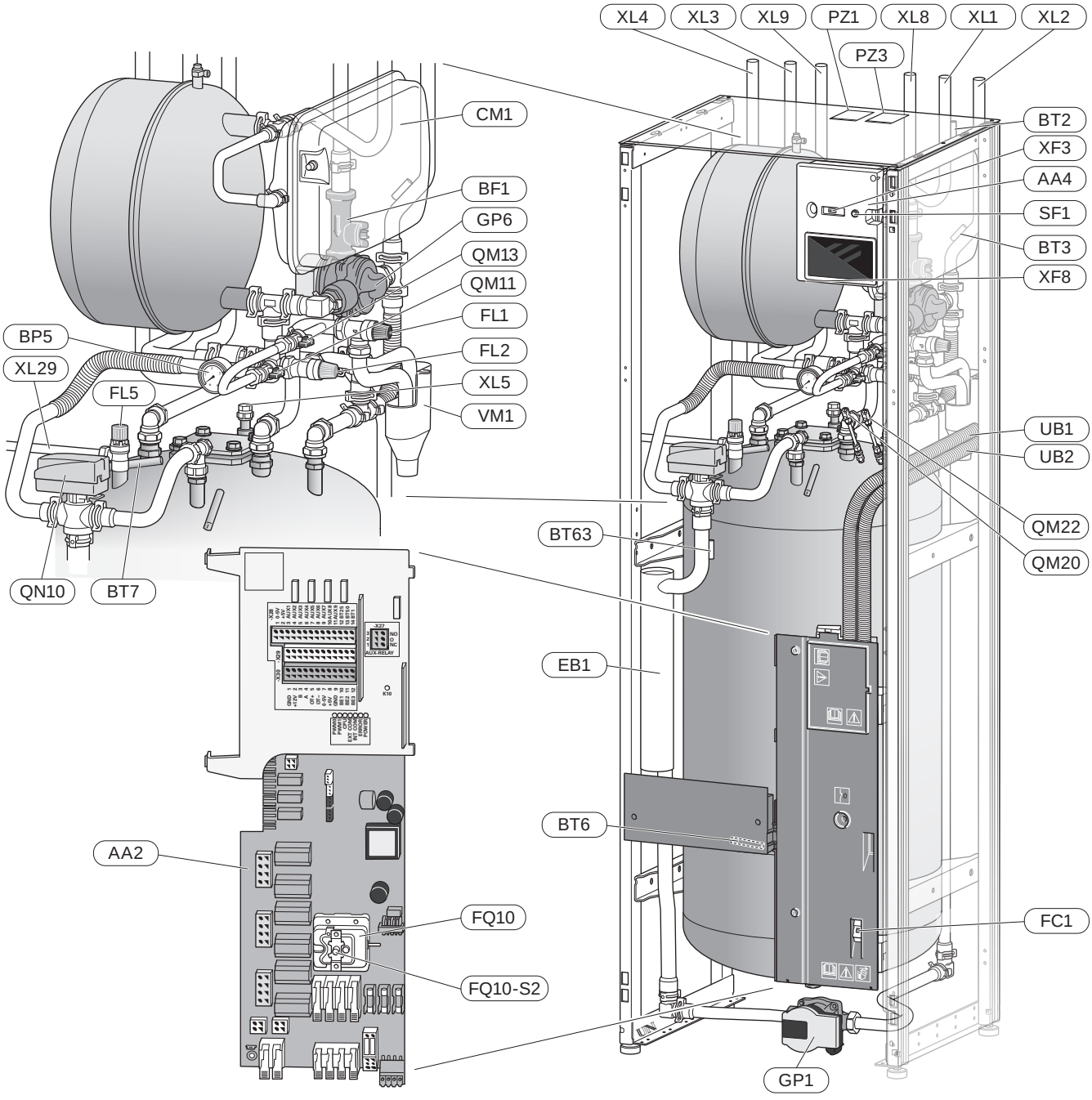


Assembly takes place in the reverse order.

3 Indoor module's design

Component locationVVM S320

1X230V, STAINLESS STEEL



LIST OF COMPONENTS

Pipe connections

XL1 Connection, heating medium supply line Ø22 mm
XL2 Connection, heating medium return line Ø22 mm
XL3 Connection, cold water Ø22 mm
XL4 Connection, hot water Ø22 mm
XL5 Connection, hot water circulation Ø15 mm
XL8 Connection, docking from heat pump Ø22 mm
XL9 Connection, docking to heat pump Ø22 mm
XL29 Connection, T&P valve Ø15 mm

HVAC components

CM1 Expansion vessel, closed, heating medium
FL1 Safety valve, hot water heater Ø15 mm
FL2 Safety valve, heating medium Ø22 mm
GP1 Circulation pump
GP6 Circulation pump, heating medium
FL5 T&P valve Ø15 mm
QM20 Venting, climate system
QM22 Venting valve, coil
QN10 Reversing valve, climate system/water heating, flow line
QM11 Filler valve, heating medium
QM13 Filler valve, heating medium
WM1 Tundish

Sensors etc.

BP5 Manometer, heating system
BT2 Temperature sensors, heating medium flow
BT3 Temperature sensors, heating medium return
BT6 Temperature sensor, hot water, charging
BT7 Temperature sensor, hot water, top
BT63 Temperature sensor, heating medium supply after immersion heater

Electrical components

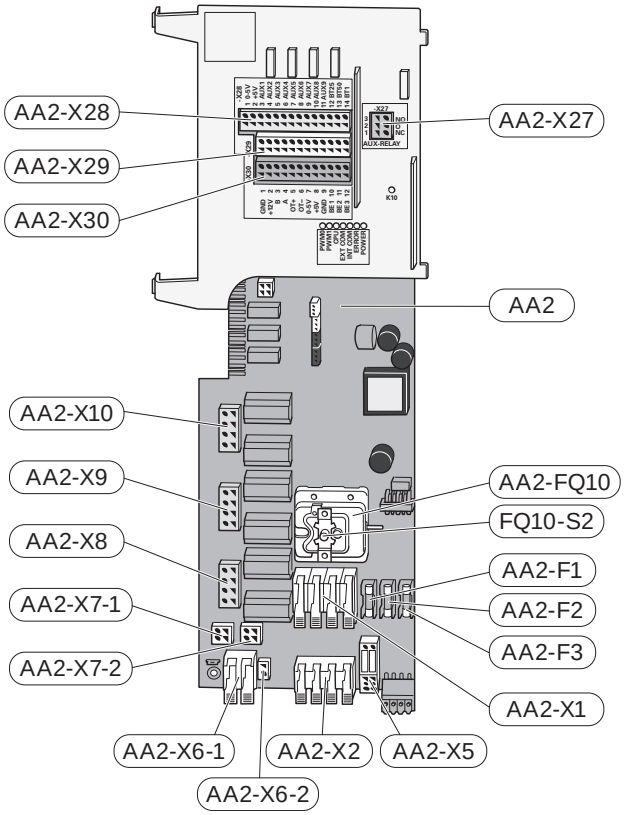
AA2 Base card
AA4 Display unit
SF1 On/Off button
XF3 USB socket
XF8 Network connection for myUplink
BF1 Flow meter
EB1 Immersion heater
FC1 Miniature circuit breaker
FQ10 Temperature limiter
FQ10-S2 Resetting temperature limiter

Miscellaneous

PZ1 Rating plate
PZ3 Serial number plate
UB1 Cable gland
UB2 Cable gland
QQ1 Inspection hole, vessel, Ø80 mm

Designations according to standard EN 81346-2.

ELECTRICAL COMPONENTS



List of components, electrical

AA2	Base card
AA2-X27	Terminal block AUX outputs
AA2-X28	Terminal block AUX inputs, external connection options
AA2-X29	Terminal block GND
AA2-X30	Terminal block, external connection options
AA2-F1	Fine-wire fuse
AA2-F2	Fine-wire fuse
AA2-F3	Fine-wire fuse
AA2-FQ10	Temperature limiter
	FQ10-S2 Reset button on the temperature limiter
AA2-X1	Terminal block, power supply
AA2-X2	Terminal block
AA2-X5	Terminal block
AA2-X6-1	Terminal block, power connection (PE)
AA2-X6-2	Terminal block, power connection (PE)
AA2-X7-1	Terminal block
AA2-X7-2	Terminal block
AA2-X8	Terminal block
AA2-X9	Terminal block
AA2-X10	Terminal block

4 Pipe connections

General

Pipe installation must be carried out in accordance with current regulations. See manual for compatible NIBE air/water heat pump for installation of the heat pump.

> *NOTE*
>
> The heating medium side and the domestic hot water side must be fitted with the necessary safety equipment in accordance with the applicable regulations.

The pipe dimension should not be less than the recommended pipe diameter according to the table. However, each system must be dimensioned individually to manage the recommended system flows.

MINIMUM SYSTEM FLOWS

The installation must be dimensioned at least to manage the minimum defrosting flow at 100% pump operation, see table.

Air/water heat pump	*Minimum flow during defrosting (100% pump speed (l/s)*	*Minimum recommended pipe dimension (DN)*	*Minimum recommended pipe dimension (mm)*
F2120-8 (1x230V)	0.27	20	22

Air/water heat pump	*Minimum flow during defrosting (100% pump speed (l/s)*	*Minimum recommended pipe dimension (DN)*	*Minimum recommended pipe dimension (mm)*
F2040-6	0.19	20	22
F2040-8	0.19	20	22
F2040-12	0.29	20	22

Air/water heat pump	*Minimum flow during defrosting (100% pump speed (l/s)*	*Minimum recommended pipe dimension (DN)*	*Minimum recommended pipe dimension (mm)*
HBS 05-6/ AMS 10-6	0.19	20	22
HBS 05-12/ AMS 10-8	0.19	20	22
HBS 05-12/ AMS 10-12	0.29	20	22

> *NOTE*
>
> An undersized system can result in damage to the machine and lead to malfunctions.

VVM S320 together with a compatible air/water heat pump (See section Outdoor modules) constitutes a complete installation for heating and hot water.

The system requires the radiator circuit to be designed for a low temperature heating medium. At lowest dimensioned outdoor temperature, the highest recommended temperatures are 55 °C on the supply line and 45 °C on the return line, but VVM S320 can handle up to 70 °C.

Overflow water from the safety valve goes via an overflow cup 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. The mouth of the overflow water pipe must be visible and not located close to electrical components.

NIBE recommends installing VVM S320 as close to the heat pump as possible for the optimum comfort. For further information about the location of various components, see section "Installation alternatives" in this manual.

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

NOTE

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

NOTE

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

NOTE

Do not start the system before filling up with water. Components in the system could be damaged.

NOTE

This installation is subject to building regulation approval, notify the local Authority of intention to install.

NOTE

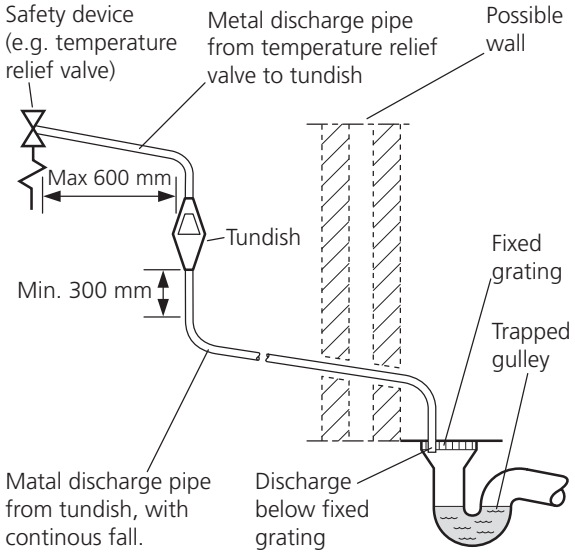
Use only manufacturer's recommended replacement parts.

Waste water from the collection tray and from the safety valves is led by a non-pressurised overflow pipe to the drain so that hot water cannot cause damage. The mouth of the overflow pipe must be visible and not placed close to electrical components. In addition, the opening of the overflow pipe (tundish), drain valves and motorised valves should also be positioned away from all electrical components. This is the only thing the non-pressurised overflow pipe may be used for. Even overflow pipes from tundish connected to the expansion relief valve must be connected to the drain in the same way.

Please note that the connection of the T&P-valve should not be used for any other purpose.

Valves may not be positioned between the expansion valve and the vessel.

Overflow pipes from tundish must be routed with a fall of at least 300 mm, before bends or angles in the pipework (see image).



Valve outlet size	*Minimum size of discharge pipe*	*Minimum size of discharge pipe from tundish*	*Maximum resistance allowed, expressed as a lenght of straight pipe (i.e. no elbows or bends)*	*Resistance created by each elbow or bend*
G1/2	15 mm	22 mm	up to 9 m	0.8 mm
G1/2	15 mm	28 mm	up to 18 m	1.0 mm
G1/2	15 mm	35 mm	up to 27 m	1.4 mm
<G3>/4	22 mm	28 mm	up to 9 m	1.0 mm
<G3>/4	22 mm	35 mm	up to 18 m	1.4 mm
<G3>/4	22 mm	42 mm	up to 27 m	1.7 mm
G1	28 mm	35 mm	up to 9 m	1.4 mm
G1	28 mm	42 mm	up to 18 m	1.7 mm
G1	28 mm	54 mm	up to 27 m	2.3 mm

HARD WATER AREAS

Usually, there should not be a problem in installing VVM S320 in areas of hard water as the operating temperature is 50–60 °C.

CLEANING THE CLIMATE SYSTEM

When the water heater and the climate system have been filled with water, VVM S320 must operate at maximum normal temperature for at least one hour. Thereafter the system must be drained of water and refilled.

Before installing the heat pump in an existing system, it is important that the system is properly flushed through.

Even if the heat pump is to be installed in a new system, the heat pump and system should be flushed.

> *NOTE*
>
> Ensure that cleaning agent has been removed from the entire system before adding inhibitor.

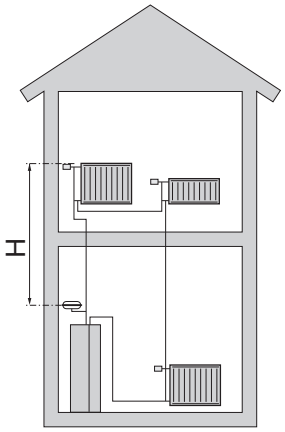
After flushing an inhibitor should be used for long-term anti-corrosion protection.

NIBE Energy Systems Limited recommends water treatments (supplied by e.g. Fernox and Sentinel) specifically designed for heat pumps.

SYSTEM VOLUME

VVM S320 is equipped with a pressure expansion vessel of 10 litres.

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



The maximum system volume excluding the boiler is 220 litres at the above pre-pressure.

SYMBOL KEY

Symbol	*Meaning*
	Shut-off valve
	Tapping valve
	Non-return valve
	Mixing valve
	Circulation pump
	Immersion heater
	Expansion vessel
	Filterball
	Flow meter/energy meter
	Safety valve
	T&Pvalve
	Trim valve
	Pressure reduction valve
	Tundish
	Reversing valve/shunt
	Overflow valve
	Under floor heating systems
	Air/water heat pump
	Radiator system
	Domestic hot water
	Hot water circulation

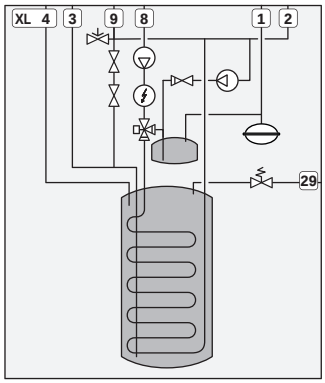
SYSTEM DIAGRAM

VVM S320 consists of water heater with charge coil, expansion vessel, safety valve, filler valve, immersion heater, circulation pumps, buffer vessel and control system. VVM S320 connects to the climate system. *

VVM S320 is directly adapted for connection and communication with a compatible NIBE air/water heat pump, see section "Outdoor modules", and together they constitute a complete heating installation.

When it is cold outdoors, the air/water heat pump works with VVM S320, and if the outdoor air temperature falls below the heat pump's stop temperature, all heating is carried out by VVM S320.

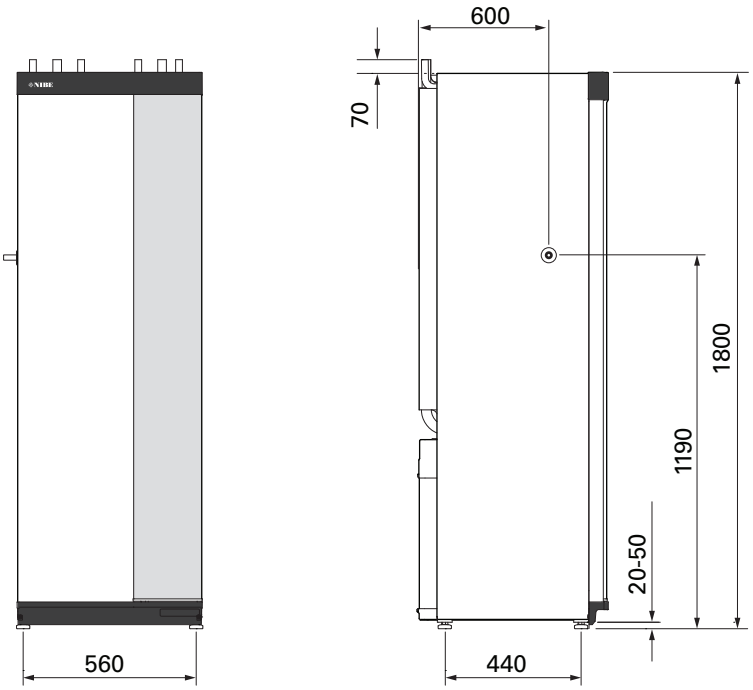
Requisite safety equipment connected to F2040 / F2120 / NIBE SPLIT HBS 05 and VVM S320, see section, docking.

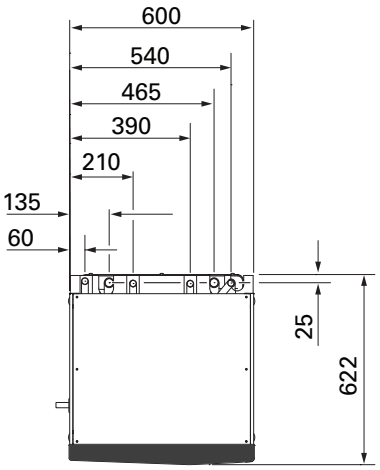


National regulations must be observed.

XL1	Connection, heating medium supply line Ø22 mm
XL2	Connection, heating medium return line Ø22 mm
XL3	Connection, cold water Ø22 mm
XL4	Connection, hot water Ø22 mm
XL5	Connection, hot water circulation Ø15 mm (does not apply to VVM S320 CU)
XL8	Connection, docking from heat pump Ø22 mm
XL9	Connection, docking to heat pump Ø22 mm
XL29	Connection, T&P valve Ø15 mm

Dimensions and pipe connections





PIPE DIMENSIONS

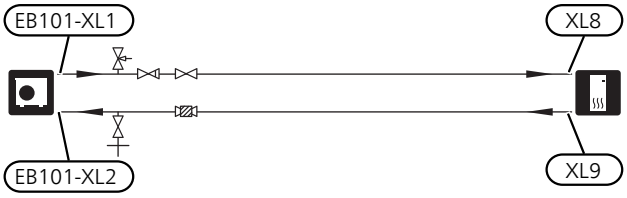
Connection			
XL1 / XL2	Heating medium supply/return Ø	mm	22
XL3 / XL4	Cold/hot water Ø	mm	22
XL5	Hot water circulation (does not apply to VVM S320 CU) Ø	mm	15
XL8 / XL9	Docking heating medium in/out Ø	mm	22
XL29	T&P valve Ø	mm	15

Connecting VVM S320 to heat pump

You can find a list of compatible air/water heat pumps in section "Outdoor modules" (EB101).

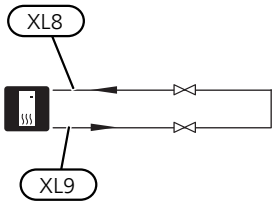
VVM S320 is not equipped with shut off valves; these must be installed outside the indoor module to facilitate any future servicing.

Requisite safety equipment connected to F2040 / F2120 / NIBE SPLIT HBS 05 and VVM S320.



Use without heat pump

Connect the pipe for docking in from the heat pump (XL8) with the pipe out to the heat pump (XL9). Select "Additional heat only" in menu 4.1.

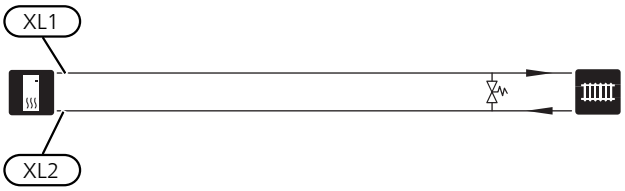


Heating medium side

CONNECTING THE CLIMATE SYSTEM

A climate system is a system that regulates indoor comfort with the help of the control system in VVM S320 and for example radiators, underfloor heating/cooling, fan convectors etc.

- Fit required safety devices and shut-off valves (must be fitted as close to VVM S320 as possible).
- When connecting to a system with thermostats on all radiators (or underfloor heating coils), either a bypass valve must be fitted or some of the thermostats must be removed to ensure there is sufficient flow.



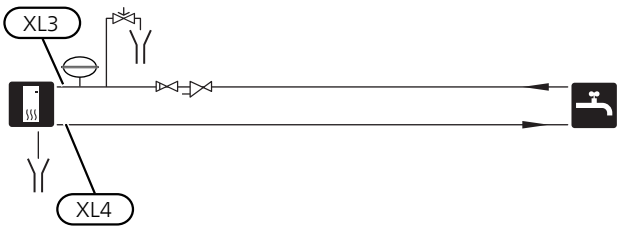
Cold and hot water

EXPANSION OF WATER

The expansion vessel accomodates expansion that results from heating the water inside the unit. The expansion vessel must be connected between the expansion valve and the cylinder. The location of the expansion vessel should allow access to recharge the pressure as and when neccessary.

- Fit shut-off valve, non-return valve and safety valve as illustrated.
- Fit the enclosed valve connector (pressure reduction valve and safety valve) on the cold water connection (XL3).
- Stop temperature for hot water must be at least 60°C.
- A mixer valve must also be installed, if the factory setting for hot water is changed. National regulations must be observed.

  A mixing valve must be installed when the factory setting for hot water is changed. National regulations must be observed.
- The safety valve must have a maximum 0.6 MPa (6.0 bar) opening pressure and be installed on the incoming domestic water line as shown.
- The settings for hot water are made in menu 7.1.1.



Docking alternatives

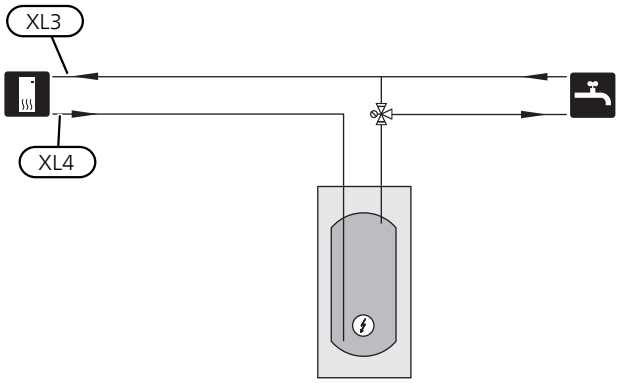
More information about the alternatives is available at nibe.eu/ODM and in the relevant assembly instructions for the accessories used. See section "Accessories" for a list of the accessories that can be used with VVM S320.

EXTRA HOT WATER HEATERS

VVM S320 can be connected to extra water heater.

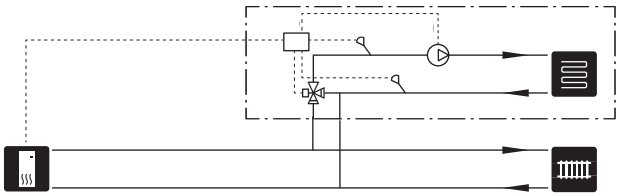
Water heater with immersion heater

If it is possible to use a water heater with an immersion heater, connect it as illustrated below.



EXTRA 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.



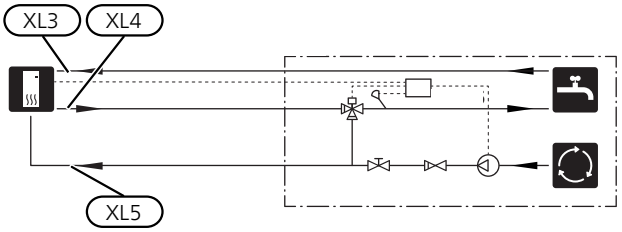
HOT WATER CIRCULATION (VVC)

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. Nor should there be any non-circulatory hot water pipes. Adjust the hot water system to ensure that the temperature does not fall below 50 °C in the extremities of the system. The circulation pump is activated via AUX input in menu 7.4.

An additional expansion vessel may be requiered.

VVM S320 E and VVM S320 R with HWC connection (XL5)

Enamel and Stainless Steel

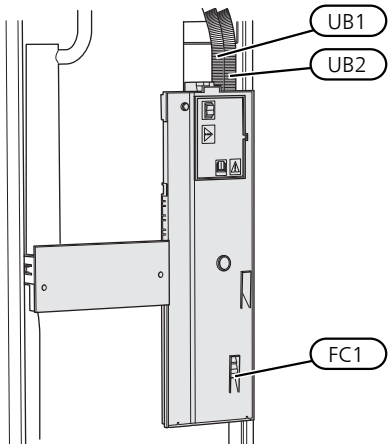


5 Electrical connections

General

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

- Disconnect VVM S320 before insulation testing the house wiring.
- If the building is equipped with an earth-fault breaker, VVM S320 should be equipped with a separate one.
- VVM S320 must be installed via an isolator switch. The cable area has to be dimensioned based on the fuse rating used.
- If a miniature circuit breaker is used, this must have motor characteristic "C" as a minimum. See section "Technical specifications" for fuse size.
- Use a screened cable for communication with the heat pump.
- To prevent interference, sensor cables to external connections must not be laid close to high voltage cables.
- The minimum area of communication and sensor cables to external connections must be 0.5 mm² up to 50 m, for example EKKX, LiYY or equivalent.
- For an electrical wiring diagram for the indoor module, see section "Technical Specifications"
- When cable routing in VVM S320, the cable grommets (UB1 and UB2) must be used.



NOTE

Electrical installation and any servicing must be carried out under the supervision of a qualified electrician. Disconnect the current using the circuit breaker before carrying out any servicing.

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

Check the connections, main voltage and phase voltage before the machine is started to prevent damage to the indoor module's electronics.

NOTE

Do not start the system before filling up with water. Components in the system could be damaged.

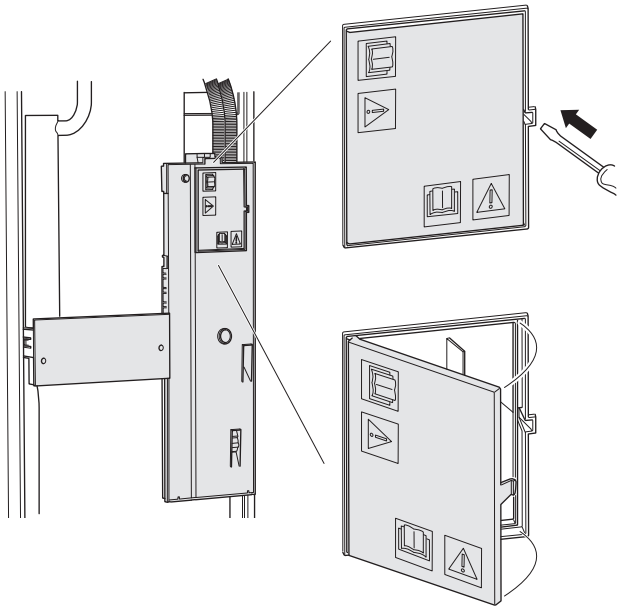
MINIATURE CIRCUIT-BREAKER

The operating circuit in VVM S320 and some of its internal components are fused internally by a miniature circuit breaker (FC1).

ACCESSIBILITY, ELECTRICAL CONNECTION

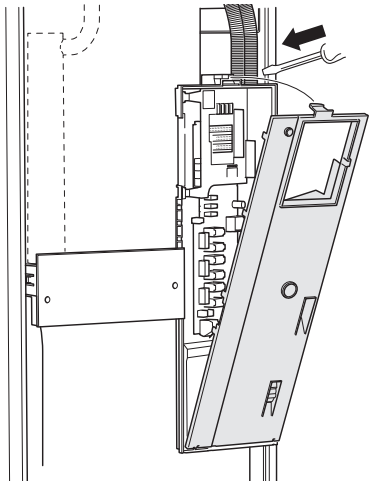
Removing the cover

The cover is opened using a screwdriver.



Removing the covers

The cover is opened using a screwdriver.



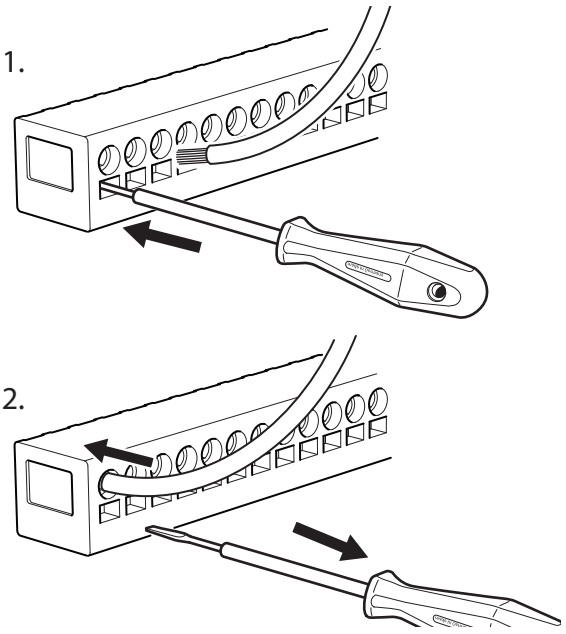
MINIATURE CIRCUIT-BREAKER

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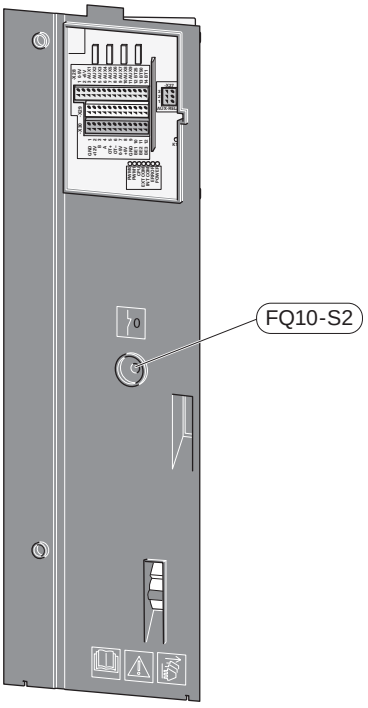
CABLE LOCK

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

Terminal block



TEMPERATURE LIMITER



The temperature limiter (FQ10) cuts the power supply to the electrical additional heat if the temperature rises above 89 °C and it is reset manually.

Resetting

The temperature limiter (FQ10) can be accessed behind the front cover. Reset the temperature limiter by pressing its button (FQ10-S2).

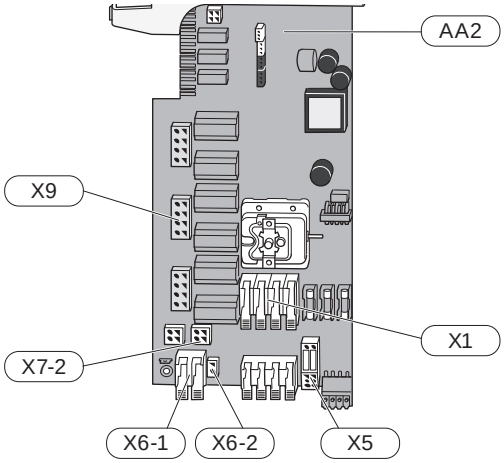
Connections

> *NOTE*
>
> To prevent interference, sensor cables to external connections must not be laid close to high voltage cables.

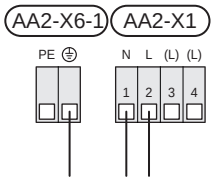
POWER CONNECTION

Supply voltage

Enclosed cable for incoming supply electricity is connected to terminal block X1 and X6-1 on the PCB AA2.

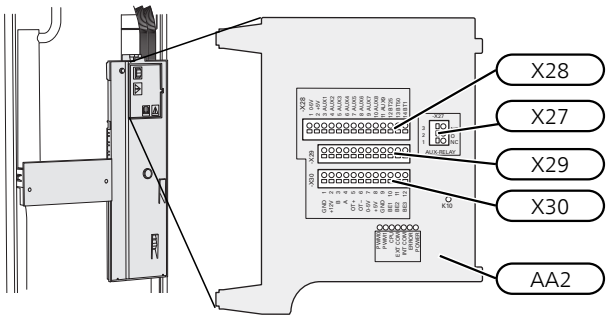


Connection 1x230V



EXTERNAL CONNECTIONS

External connections are connected on terminal blocks X28, X29 and X30 on the PCB (AA2).



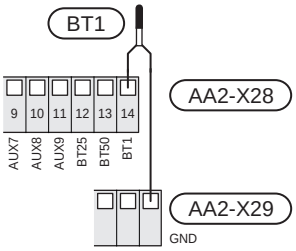
Sensors

Outside sensor

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

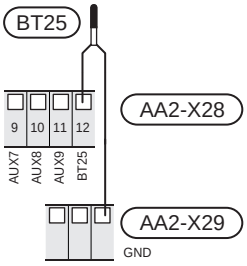
The outdoor sensor is connected to terminal block AA2-X28:14 and to any input on terminal block AA2-X29.

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



Temperature sensor, external flow line

Connect temperature sensor, external supply line (BT25) to terminal block AA2-X28:12 and to any input on terminal block AA2-X29.



Room sensor

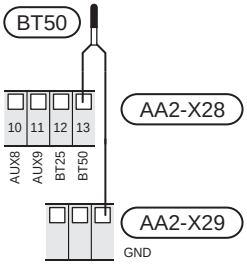
VVM S320 is supplied with an enclosed room sensor (BT50) that makes it possible to display and control the room temperature in the display on VVM S320.

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

VVM S320 operates without room sensor, but if you want to read the home's indoor temperature from the display on VVM S320, the room sensor must be fitted. The room sensor is connected on terminal block X28:13 and to any input on terminal block AA2-X29.

If a room sensor is to be used to change the room temperature in °C and/or to fine-tune the room temperature, the sensor must be activated in menu 1.3 "Room sensor settings".

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

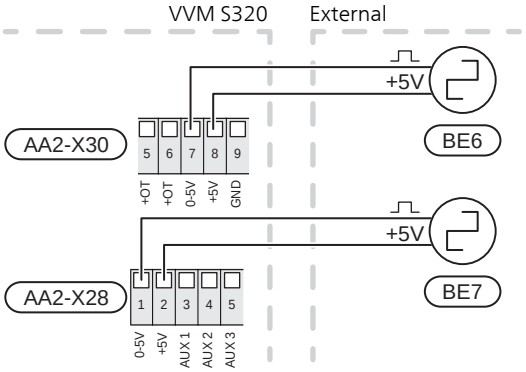


Caution

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.

External energy meter

One or two energy meters (BE6, BE7) are connected to AA2-X28:1-2 or AA2-X30:7-8.



Activate the energy meter(s) in menu 7.2 and then set the desired value (energy per pulse) in menu 7.2.19.

Load monitor

Integrated load monitor

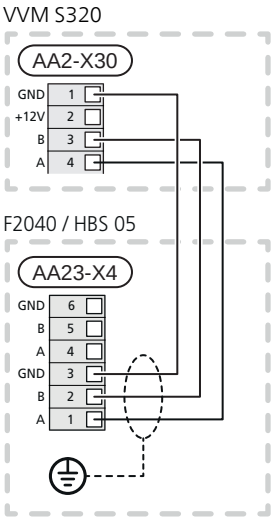
VVM S320 is equipped with a simple form of integrated load monitor, which limits the power steps for the electric additional heat by calculating whether future power steps can be connected to the relevant phase without exceeding the specified main fuse. If the current would exceed the specified main fuse, the power step is not permitted. The size of the property's main fuse is specified in menu 7.1.9.

COMMUNICATION

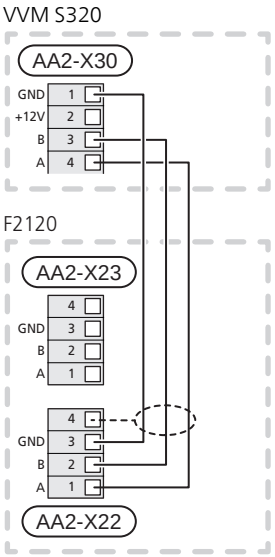
Communication with air/water heat pump

If the air/water heat pump is to be connected to VVM S320, this is connected to terminal block X30:1 (GND), X30:3 (B) and X30:4 (A) on the PCB AA2.

VVM S320 and F2040 / NIBE SPLIT HBS 05



VVM S320 and F2120



Connecting accessories

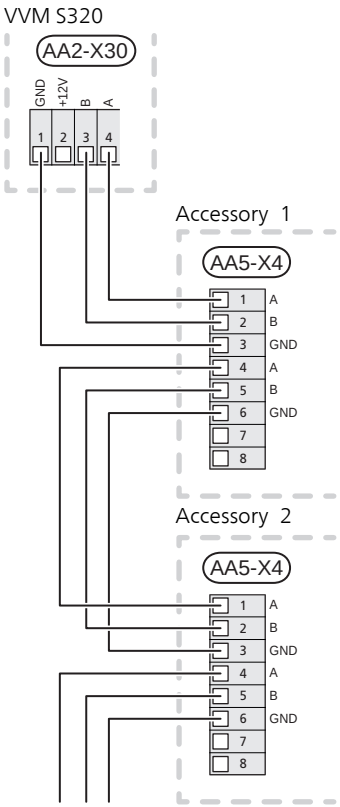
Instructions for connecting accessories are provided in the manual accompanying the accessory. See section "Accessories" for a list of the accessories that can be used with VVM S320. Connection for communication with the most common accessories is shown here.

Accessories with accessory board (AA5)

Accessories with accessory board (AA5) connect to terminal block AA2-X30:1,3,4 in VVM S320. Use cable type LiYY, EKKX or equivalent.

If several accessories are to be connected, connect the first accessory board directly to the terminal block in VVM S320. Other accessory boards are connected to the first in series.

Because there can be different connections for accessories with accessory board (AA5), you should always read the instructions in the manual for the accessory that is to be installed.

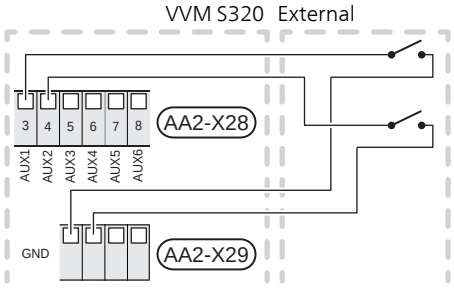


Selectable in/outputs

On the PCB (AA2), VVM S320 has software-controlled AUX inputs and outputs for connecting the external switch function (contact has to be potential free) or sensor.

Go into menu 7.4 "Selectable in/outputs" on the display to select to which AUX connection each function connects.

Selectable inputs for these functions are AA2-X28:3-11. Each function connects to any input and GND (AA2-X29).



The example above uses the inputs AUX1 (AA2-X28:3) and AUX2 (AA2-X28:4).

A selectable output is AA2-X27.

For certain functions, accessories may be required.

TIP

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

POSSIBLE SELECTION FOR AUX INPUTS

Temperature sensor

Temperature sensor can be connected to VVM S320. Use a 2-core cable of at least 0.5 mm² cable area.

Available options are:

- cooling/heating/hot water, determines when it is time to switch between cooling, heating and hot water mode (selectable when the air/water heat pump is permitted to produce cooling).

Monitor

Available options are:

- alarm from external units. The alarm is connected to the control, which means that the malfunction is presented as an information message in the display. Potential-free signal of type NO or NC.
- stove monitor. (A thermostat that is connected to the chimney. When the negative pressure is too low and the thermostat is connected, the fans in ERS (NC) are switched off.

External activation of functions

An external switch function can be connected to VVM S320 to activate various functions. The function is activated during the time the switch is closed.

Possible functions that can be activated:

- hot water demand mode "more hot water"
- hot water demand mode "small"
- "External adjustment"

  To change the supply temperature and in doing so change the room temperature, an external switch function can be connected to VVM S320.

  When the switch is closed, the temperature is changed in °C (if a room sensor is connected and activated). If a room sensor is not connected or not activated, the desired change of "Temperature" (heating curve offset) is set with the number of steps selected. The value is adjustable between -10 and +10. External adjustment of climate systems 2 to 8 requires accessories.

  – *climate system 1 to 8*

    The value for the change is set in menu 1.30.3, "External adjustment".

- activation of one of four fan speeds.

  (Can be selected if ventilation accessory is activated.)

  The following five options are available:

  – 1-4 is normally open (NO)

  – 1 is normally closed (NC)

  The fan speed is activated during the time the switch is closed. Normal speed is resumed when the switch is opened again.

- SG ready

  Caution

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

  "SG Ready" requires two AUX inputs.

  In cases where this function is wanted, it must be connected to terminal block X28 on the PCB (AA2).

  "SG Ready" is a smart form of tariff control, through which your electricity supplier can affect the indoor, hot water and/or pool temperatures (if applicable) or simply block the additional heat and/or compressor in the heat pump at certain times of the day (can be selected in menu 4.2.3 after the function is activated). Activate the function by connecting potential-free switch functions to two inputs selected in menu 7.4 (SG Ready A and SG Ready B).

  Closed or open switch means one of the following:

– *Blocking (A: Closed, B: Open)*

"SG Ready" is active. The compressor in VVM S320 and additional heat are blocked in the same way as today's tariff blocking.

– *Normal mode (A: Open, B: Open)*

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

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

"SG Ready" is active. The system focuses on costs savings and can for example exploit a low tariff from the electricity supplier or over-capacity from any own power source (effect on the system can be adjusted in the menu 4.2.3).

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

"SG Ready" is active. The system is permitted to run at full capacity at over capacity (very low price) with the electricity supplier (effect on the system is settable in menu 4.2.3).

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

External blocking of functions

An external switch function can be connected to VVM S320 for blocking various functions. The switch must be potential-free and a closed switch results in blocking.

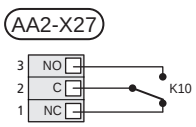
> ***NOTE***
>
> Blocking entails a risk of freezing.

Functions that can be blocked:

- heating (blocking of heating demand)
- hot water (hot water production). Any hot water circulation (HWC) remains in operation.
- compressor in heat pump EB101
- internally controlled additional heat
- tariff blocking (additional heat, compressor, heating, cooling and hot water are disconnected)

POSSIBLE SELECTION FOR AUX OUTPUT (POTENTIAL FREE VARIABLE RELAY)

It is possible to have an external connection by means of a relay function via a potential-free switching relay (max 2 A) on the PCB (AA2), terminal block X27:NO,C,NC. The function must be activated in menu 7.4.



The picture shows the relay in the alarm position.

If VVM S320 is switched off or in emergency mode, the relay is in alarm position.

> ***Caution***
>
> The relay outputs may be subjected to a max load of 2 A at resistive load (230V AC).

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

Optional functions for external connection:

Indications

- alarm indication
- indication of common alarm
- cooling mode indication (only applies if there are cooling accessories)
- holiday indication
- away mode for "smart home" (complement to the functions in menu 5.3)

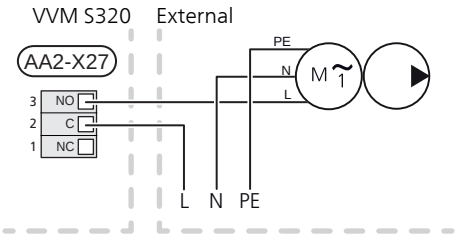
Control

- control of circulation pump for hot water circulation
- control of external circulation pump (for heating medium)

Connecting external circulation pump

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

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



Settings

ELECTRICAL ADDITION - MAXIMUM OUTPUT

The immersion heater can be set to a maximum of 7 kW. The delivery setting is 7 kW.

The immersion heater output is divided into 7 steps, according to the table.

Setting maximum output in the electric additional heat is done in menu 7.1.5.1.

Power steps of the immersion heater

1x230V (maximum electrical output, connected upon delivery 7 kW)

Electrical addition (kW)	*Max L1 (A)*
0	0.0
1	4.3
2	8.7
3	13.0
4	17.4
5	21.7
6	26.1
7	30.4

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

EMERGENCY MODE

When VVM S320 is put into emergency mode, the system works as follows:

- VVM S320 prioritises heating production.
- Hot water is produced if possible.
- The immersion heater is stepped according to the setting in menu 7.1.8.2 - Emergency mode.
- Fixed supply temperature if the system has no value from the outdoor sensor (BT1).

You can activate the emergency mode both when VVM S320 is running and when it is switched off.

When the emergency mode is active, the status lamp turns yellow.

To activate when VVM S320 is running: press and hold the on/off button (SF1) for 2 seconds and select "emergency mode" from the shutdown menu.

To activate when VVM S320 is switched off: press and hold the on/off button (SF1) for 5 seconds. (Deactivate the emergency mode by pressing once.)

6 Commissioning and adjusting

Preparations

NOTE

Do not start the system before filling up with water. Components in the system could be damaged.

NOTE

Do not start VVM S320 if there is a risk that the water in the system has frozen.

Caution

Check the miniature circuit-breaker. It may have tripped during transport.

1. Check that VVM S320 is closed.
2. Check that the drain valve (QM1) is fully closed and that the temperature limiter (FQ10) has not deployed.

Filling and venting

Caution

Insufficient venting can damage internal components in VVM S320.

FILLING THE HOT WATER HEATER IN VVM S320

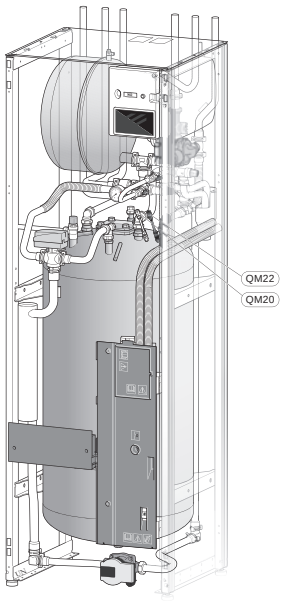
1. Open a hot water tap in the house.
2. Fill the hot water heater through the cold water connection (XL3).
3. When the water that comes out of the hot water tap is no longer mixed with air, the water heater is full and the hot water tap can be closed.

FILLING VVM S320

1. Open the vent valve (QM20).
2. Open the filling valves (QM11, QM13). VVM S320 is filled with water.
3. When the water exiting the vent valve (QM20) is no longer mixed with air, close the vent valve. After a while the pressure starts to rise on the pressure gauge. When the opening pressure for the safety valve has been reached, it starts to release water. Close the filling valve. Vent the water heater coil using the vent valve (QM22).
4. Open the safety valve until the pressure in VVM S320 falls to the normal working range (approx. 1 bar) and check that there is no air in the system by turning the vent valve (QM20).

VENTING THE CLIMATE SYSTEM

1. Cut the power to VVM S320.
2. Vent VVM S320 through the vent valve (QM20) and other climate systems through their relevant vent valves.
3. Keep topping up and venting until all air has been removed and the pressure is correct.



QM20 Venting, climate system
QM22 Venting valve, coil

DRAINING THE CLIMATE SYSTEM

NOTE

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

1. Connect a hose to the lower filler valve for heating medium (QM11).
2. Open the valve to drain the climate system.

Also see section "Draining the climate system".

Start-up and inspection

START GUIDE

NOTE

There must be water in the climate system before VVM S320 is started.

1. Start VVM S320 by pressing the on/off button once (SF1).
2. Follow the instructions in the display's start guide. If the start guide does not start when you start the VVM S320, start it manually in menu 7.7.

TIP

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

Commissioning

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

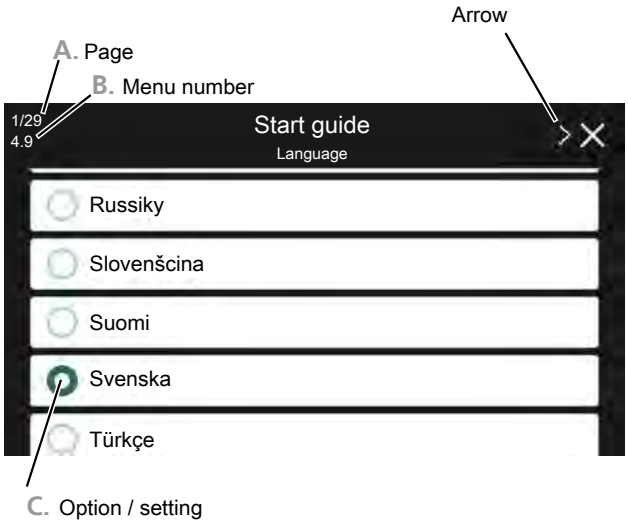
The start guide ensures that the start-up is carried out correctly and, for this reason, cannot be skipped.

Caution

As long as the start guide is active, no function in VVM S320 will start automatically.

The start guide will appear at each restart of VVM S320, 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.

Drag to the right or left with your finger to browse between the pages.

You can also press the arrows in the top corners to browse.

B. Menu number

Here, you can see which menu in the control system this page of the start guide is based on.

If you want to read more about the affected menu, either consult its help menu or read the Installer Manual.

C. Option / setting

Make settings for the system here.

COMMISSIONING WITHOUT HEAT PUMP

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

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

Enter menu 7.3.2 System settings and deactivate the heat pump.

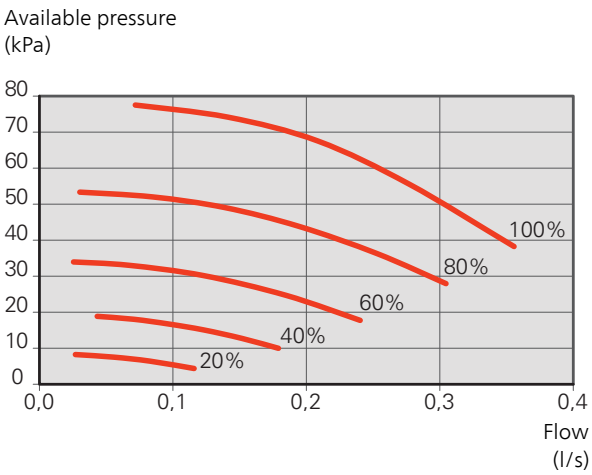
NOTE

Select operating mode "auto" or "manual", when the indoor module is to be used again with the air/water heat pump.

PUMP SPEED

The circulation pump (GP1) in VVM S320 is frequency controlled and sets itself using control and based on heating demand.

Available pressure circulation pump, GP1



POST-ADJUSTMENT, VENTING

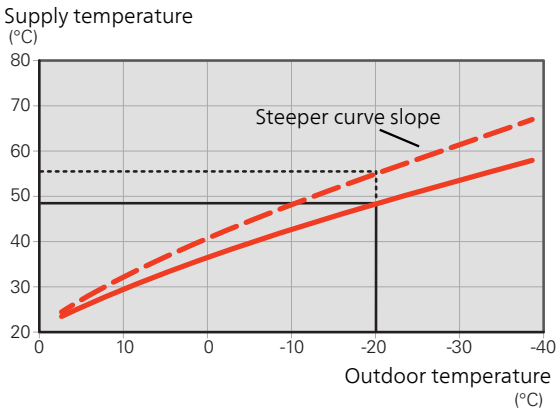
Initially, air is released from the hot water and venting may be necessary. If gurgling sounds can be heard from the climate system, the entire system will require additional venting. The installation is vented via vent valves (QM20), (QM22) and other climate systems through their relevant vent valves. When venting, VVM S320 must be off.

Setting the cooling/heating curve

In menu Curve, heating you can view the heating curve for your house. The task of the curve is to give an even indoor temperature, regardless of the outdoor temperature, and thereby energy efficient operation. It is from this curve that the VVM S320 determines the temperature of the water to the climate system (the supply temperature) and thus the indoor temperature.

CURVE COEFFICIENT

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

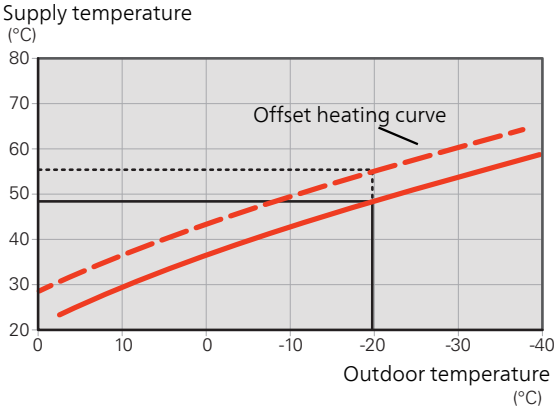


The optimum curve slope depends on the climate conditions in your location, whether the house has radiators, fan coils or underfloor heating and how well insulated the house is.

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

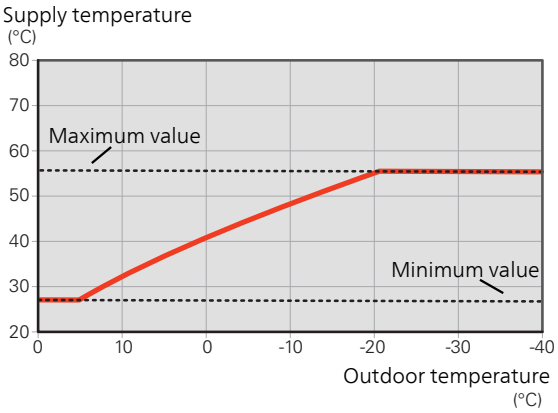
CURVE OFFSET

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



SUPPLY TEMPERATURE – MAXIMUM AND MINIMUM VALUES

Because the 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.

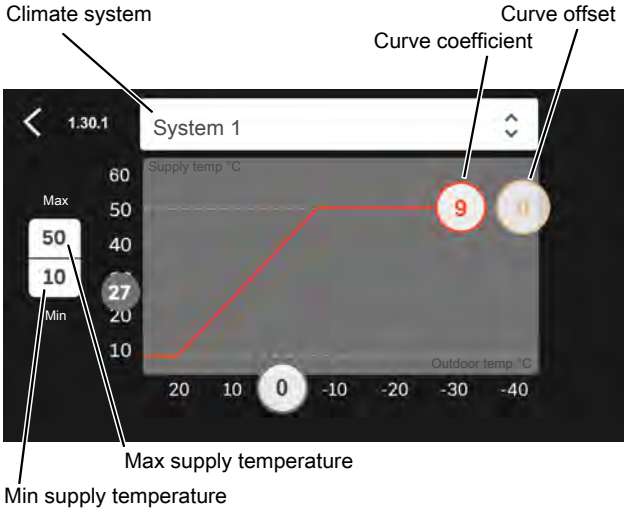


Caution

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

Check the max floor temperature with your floor supplier.

ADJUSTMENT OF CURVE



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

Caution

Curve 0 means that own curve is used.

Settings for own curve are made in menu 1.30.7.

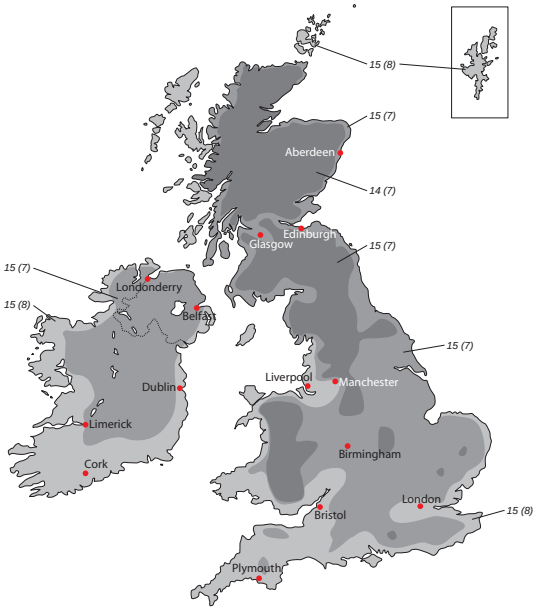
TO READ OFF A HEATING CURVE

1. Drag in the circle on the axis with outdoor temperature.
2. Read off the value for supply temperature in the circle on the other axis.

BASIC VALUES FOR THE AUTOMATIC HEATING CONTROL

The values stated on the map apply to "Curve, heating" in menu 1.30.1

- The first value applies to low temperature radiator systems.[1]. "Temperature" in menu 1.1 must be set to -2.
- The value in brackets refers to underfloor heating systems[2] installed in concrete floor structures.
- When the system is installed in a timber floor structure, you can use the number before the brackets, although this value must be reduced by two units. "Temperature" in menu 1.1 is set to -1 in these cases.



> *Caution*
>
> The map's values are usually a good starting point and are intended to produce a room temperature of approximately 20 °C. The values can be adjusted later if necessary.

Examples of basic values selection:

- House with low temperature radiator system

  London = Area 15 (8).

  Set 15 in menu 1.30.1, "Curve, heating" and -2 in menu 1.1 "Temperature".

- House with underfloor heating installed in a concrete floor structure

  London = Area 15 (8).

  Set 8 in menu 1.30.1, "Curve, heating" and -2 in menu 1.1 "Temperature".

- House with underfloor heating installed in a timber floor structure

  London = Area 15 (8).

  Set 13 (see third item in the list above) in menu 1.30.1, "Curve, heating" and -1 in menu 1.1 "Temperature".

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

1 A low-temperature radiator system refers to a system where the supply temperature needs to be 55 °C on the coldest day.

2 Under floor heating can be dimensioned very differently. The above example refers to a system where the supply temperature needs to be approximately 35 – 40 °C or 45 – 50 °C on the coldest day.

7 myUplink

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

Visit myuplink.com for more information.

Specification

You need the following in order for myUplink to be able to communicate with your VVM S320:

- wireless network or network cable
- Internet connection to which VVM S320 can be connected
- account on myuplink.com

We recommend our mobile apps for myUplink.

For more information, visit myuplink.com.

Connection

If you do not already have an account, register in the mobile app or on myuplink.com.

CONNECT SYSTEM

Caution

Before you can connect to myUplink, you must select connection type (wired/wifi) in menu 5.2.1 or 5.2.2.

When you have logged in for the first time, you must connect your system to your registered account via the mobile app or myuplink.com. Here, you can also invite and/or add further users.

DISCONNECT USERS

You can choose to disconnect the users who are connected to your system:

You do this by going to menu 5.1 - myUplink.

NOTE

Once you have disconnected all users, no one can monitor or control your system via myUplink without being connected to it again.

Range of services

myUplink gives you access to various levels of service. The base level is included and, apart from this, you can choose two premium services for a fixed annual fee (the fee varies depending on the functions selected).

The base level allows you to monitor the system, manage alarms and read diagrams containing information for the last month.

If you want to read older information, as well as receive information based on more parameters and/or change settings, choose a premium service.

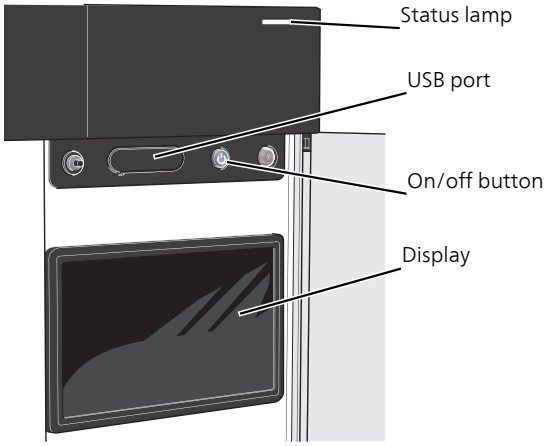
Service level	*Basic*	*Premium extended history*	*Premium change settings*
Viewer	X	X	X
Alarm	X	X	X
History	X	X	X
Extended history	-	X	-
Manage	-	-	X

Mobile apps for myUplink

The mobile apps can be downloaded free of charge from where you usually download your mobile apps. Logging into the mobile app is performed using the same account details as on myuplink.com.

8 Control - Introduction

Display unit



THE STATUS LAMP

The status lamp indicates current operating status. It:

- lights up white during normal operation.
- lights yellow in emergency mode.
- lights red in the event of a deployed alarm.
- is blue when VVM S320 is switched off.
- flashes white during active notice.

If the status lamp is red, you receive information and suggestions for suitable actions on the display.

TIP

You also receive this information via myUplink.

THE USB PORT

Above the display, there is a USB port that can be used e.g. for updating the software. Visit myuplink.com and click the "Software" tab to download the latest version of the software for your installation.

TIP

If you connect the product to the network, you can update the software without using the USB port. See section "myUplink".

THE ON/OFF BUTTON

The on/off button (SF1) has three functions:

- start
- switch off
- activate emergency mode

To start: press the on/off button once.

To switch off or restart: press the on/off button once. This brings up a menu with various options.

For hard switch off: press and hold the on/off button for 5 seconds.

You can activate the emergency mode both when VVM S320 is running and when it is switched off.

To activate when VVM S320 is running: press and hold the on/off button (SF1) for 2 seconds and select "emergency mode" from the shutdown menu.

To activate when VVM S320 is switched off: press and hold the on/off button (SF1) for 5 seconds. (Deactivate the emergency mode by pressing once.)

THE DISPLAY

Instructions, settings and operational information are shown on the display.

Navigation

VVM S320 has a touchscreen where you simply navigate by pressing and dragging with your finger.

SELECT

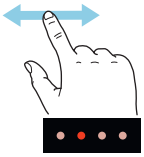
Most options and functions are activated by lightly pressing on the display with your finger.



BROWSE

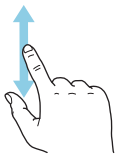
The dots at the bottom edge show that there are more pages.

Drag to the right or left with your finger to browse between the pages.



SCROLL

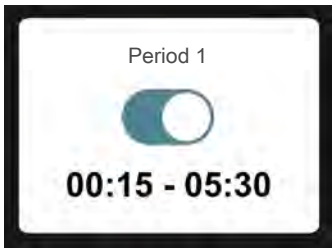
If the menu has several sub-menus, you can see more information by dragging up or down with your finger.



CHANGE A SETTING

Press the setting you want to change.

If it is an on/off setting, it changes as soon as you press it.



If there are several possible values, a spinning-wheel appears that you drag up or down to find the desired value.



Press to save your change, or if you don't want to make a change.

FACTORY SETTING

Factory set values are marked with *.



HELP MENU

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

Press the symbol to open the help text.

You may need to drag with your finger to see all text.

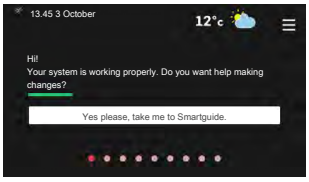
Menu types

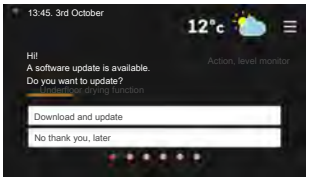
HOME SCREENS

Smartguide

Smartguide helps you both to view information about the current status and to make the most common settings easily. The information that you see depends on the product you have and the accessories that are connected to the product.

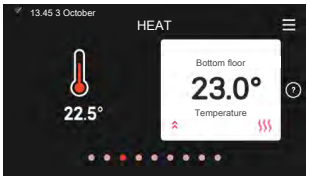
Select an option and press it to proceed. The instructions on the screen help you to choose correctly or give you information about what is happening.





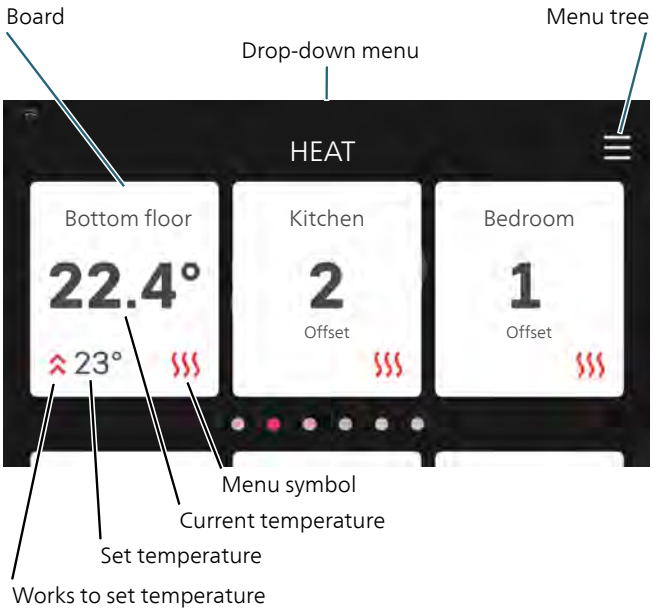
Function pages

On the function pages, you can both view information about the current status and easily make the most common settings. The function pages that you see depend on the product you have and the accessories that are connected to the product.





Drag to the right or left with your finger to browse between the function pages.



Press the boards to adjust desired value. On certain function pages, you use your finger to drag up or down to obtain more cards.

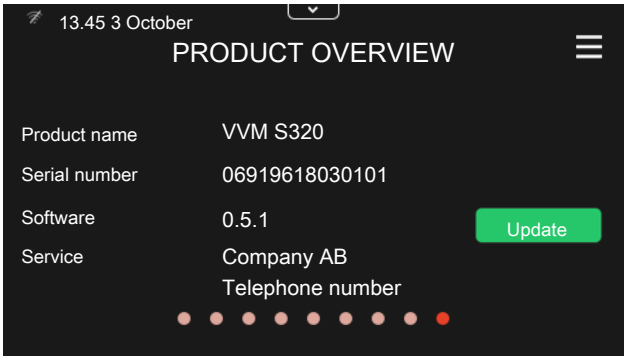
Product overview

It can be a good idea to have the product overview open during any service cases. You can find it among the function pages.

Here, you can find information about product name, the product's serial number, the version of the software and service. When there is new software to download, you can do it here (provided that VVM S320 is connected to myUplink).

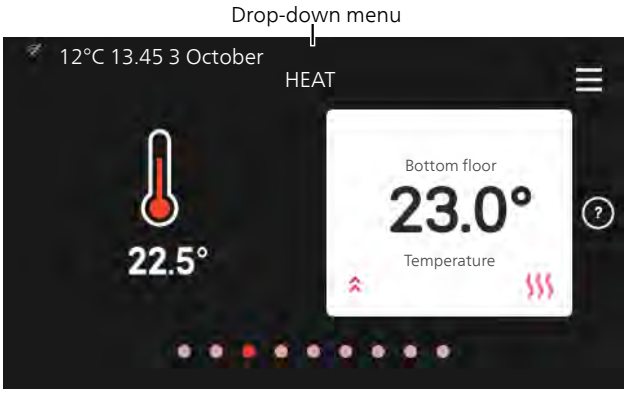
TIP

You enter the service details in menu 4.11.1.



Drop-down menu

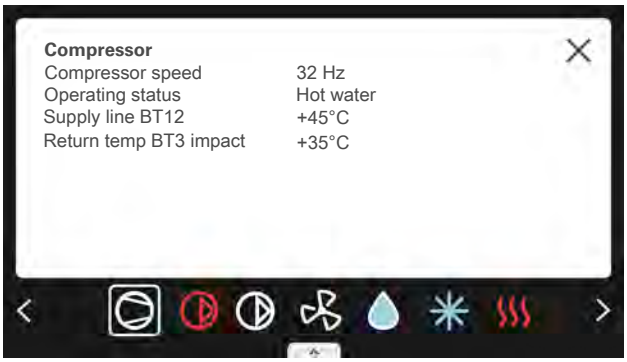
From the home screens, you can reach a new window containing further information by dragging down a drop-down menu.



The drop-down menu shows the current status for VVM S320, what is in operation and what VVM S320 is doing at the moment.

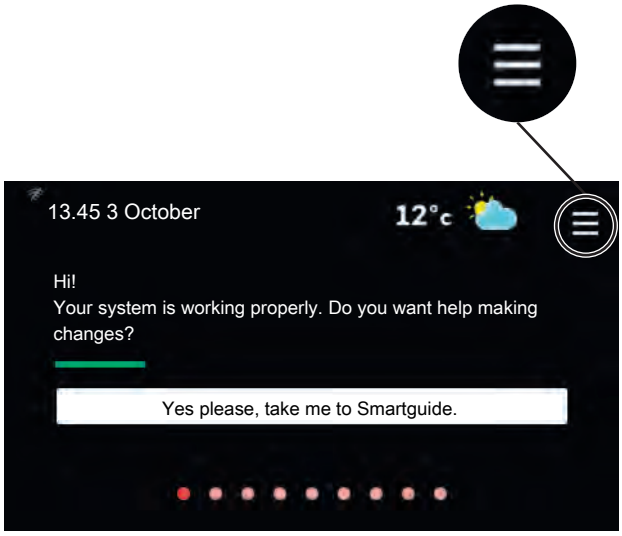


Press the icons on the menu's lower edge for more information about each function.

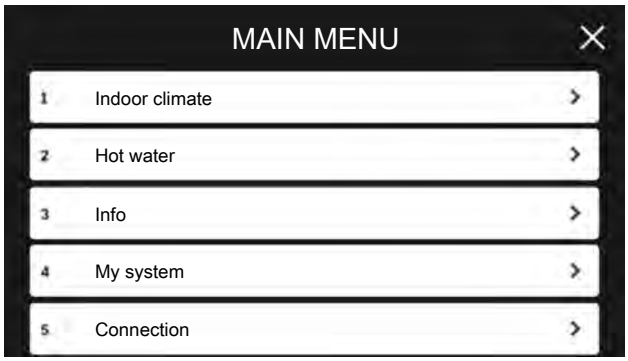


MENU TREE AND INFORMATION

In the menu tree, you can find all menus and can make more advanced settings.



You can always press "X" to return to the home screens.



9 Control – Menus

Menu 1 – Indoor climate

OVERVIEW

1.1 - Temperature	1.1.1 - Heating
	1.1.2 - Cooling[1]
	1.1.3 - Humidity[1]
1.2 - Ventilation[1]	1.2.1 - Fan speed[1]
	1.2.2 - Night cooling[1]
	1.2.4 - Demand-controlled ventilation[1]
	1.2.5 - Fan return time[1]
	1.2.6 - Filter cleaning interval[1]
1.3 - Room sensor settings	
	1.3.1 - Name room sensor
1.5 - Climate system name	
1.30 - Advanced	1.30.1 - Curve, heating
	1.30.2 - Curve, cooling[1]
	1.30.3 - External adjustment
	1.30.4 - Lowest supply heating
	1.30.5 - Lowest supply cooling
	1.30.6 - Highest supply heating
	1.30.7 - Own curve
	1.30.8 - Point offset

1 Consult the accessory's Installer Manual.

MENU 1.1 TEMPERATURE

You make temperature settings for VVM S320 here.

In installations with several climate systems, temperature settings can be made for each system.

MENU 1.1.1, 1.1.2 - HEATING AND COOLING

Heating and cooling

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

Heating

Setting range: 5 – 30 °C

*Cooling (accessory required)**

Setting range: 5 – 35°C

*Cooling, 2-pipe, is activated in menu 7.3.2.1. To run cooling, 4-pipe, accessories are needed.

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

Caution

A slow heating system such as underfloor heating may be inappropriate for controlling with room sensors.

Setting the temperature (without room sensors activated):

Setting range: -10 to +10

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

The number of steps the value has to be changed in order to achieve a one degree change to the indoor temperature depends on the climate system. One step is usually enough, but in some cases several steps may be required.

Set the desired value. The new value is shown on the right-hand side of the symbol on home screen heating.

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 1.30.1 by one increment.

If it is cold outdoors and the room temperature is too high, reduce the curve slope in menu 1.30.1 by one increment.

If it is warm outdoors and the room temperature is too low, increase the value in menu 1.1.1 by one increment.

If it is warm outdoors and the room temperature is too high, reduce the value in menu 1.1.1 by one increment.

MENU 1.2 - VENTILATION

This menu is lit if the installation contains one or more ventilation accessories.

You make the settings for the ventilation in the installation here. For example, you can adjust the fan speed and set how frequently VVM S320 will remind you of when air filters need replacing.

MENU 1.3 - ROOM SENSOR SETTINGS

Name room sensor

Setting range: a-z

Control room sensor

Setting range: on/off

Coefficient of performance system

Setting range: 0.0 - 6.0

Activate room sensors to control the room temperature here.

You can connect up to four room sensors to each climate system, and you can give each sensor a unique name.

The sensor in each climate system that is furthest from the set temperature has control; VVM S320 tries to keep the temperature up in the room whose sensor is furthest from the set value.

Caution

A slow heating system such as underfloor heating may be inappropriate for controlling with room sensors.

Factor system

You can also set a factor that determines by how much the difference between the desired and current room temperature will affect the supply temperature to the climate system. A higher value gives a greater and faster change in the heating curve's set offset.

Caution

Too high a set value for "factor system" can result in an uneven room temperature.

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

MENU 1.3.1 - NAME ROOM SENSOR

Here you name the system’s room sensor.

MENU 1.5 - CLIMATE SYSTEM NAME

You can give the installation's climate system a name here.

MENU 1.30 - ADVANCED

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

Curve, heating Setting the heating curve slope.

Curve, cooling Setting the curve slope for cooling.

External adjustment Setting the heating curve offset when an external contact is connected.

Lowest supply heating Setting minimum permitted supply temperature during heating operation.

Lowest supply cooling Setting minimum permitted supply temperature when cooling.

Highest supply heating Setting maximum permitted supply temperature for the climate system.

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

Point offset Select a change in the heating curve at a certain outdoor temperature here. One step is usually enough to change the room temperature by one degree, but in some cases several steps may be required.

MENU 1.30.1 - CURVE, HEATING

Curve, heating

Setting range: 0 - 15,0

In menu "Curve, heating" you can view the heating curve for your house. The task of the heating curve is to provide an even indoor temperature, regardless of the outdoor temperature. It is from this heating curve that VVM S320 determines the temperature of the water to the climate system, the supply temperature, and therefore the indoor temperature. Here, you can select heating curve and read off how the supply temperature changes at different outdoor temperatures.

TIP

It is also possible to create your own curve. This is done in menu 1.30.7.

Caution

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

Check the max floor temperature with your floor supplier.

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 1.30.2 - CURVE, COOLING (ACCESSORY REQUIRED)

Curve, cooling

Setting range: 0 – 9

In the "Curve, cooling" menu you can view the cooling curve for your house. The task of the cooling curve is, together with the heating curve, to provide a uniform indoor temperature, regardless of the outdoor temperature, and thereby energy-efficient operation. It is from these curves that VVM S320 determines the temperature of the water to the heating system, the supply temperature, and consequently the indoor temperature. Here, you can select the curve and read how the supply temperature changes at different outdoor temperatures. The number to the right of "system" shows the system for which you have selected the curve.

Caution

Must be restricted with underfloor cooling min. flow line temp. to prevent condensation.

Cooling in 2-pipe system

In VVM S320 there is a built-in function for operating cooling in a 2-pipe system down to 17 °C, factory setting 18 °C. This needs the outdoor unit to be able to perform cooling. (See the Installer Manual for your air/water heat pump.) If the outdoor module can perform cooling, the cooling menus are activated in the display on the indoor module (VVM).

In order for operating mode “cooling” to be permitted, the average temperature must be above the setting value for “start cooling” in menu 7.1.10.2 "Auto mode setting".

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

MENU 1.30.3 - EXTERNAL ADJUSTMENT

Climate system

Setting range: -10 to +10

Setting range (if room sensor is installed): 5 - 30°C

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 1.30.4 - LOWEST SUPPLY HEATING

heating

Setting range: 5 - 80 °C

Set the minimum temperature on the supply temperature to the climate system. This means that VVM S320 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.

MENU 1.30.5 - LOWEST SUPPLY COOLING

cooling

Depending on which cooling accessory is used, the setting range can vary.

Setting range 7 – 30 °C

Alarm, room sensor during cooling operation

Setting range: on/off

Set the minimum temperature on the supply temperature to the climate system. This means that VVM S320 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.

Here, you can receive alarms during cooling operation, for example if a room sensor malfunctions.

NOTE

Cooling flow line must be set with regard to which climate system is connected. For example, floor cooling with too low cooling flow line can cause condensation precipitation, which in the worst instance could lead to moisture damage.

MENU 1.30.6 - HIGHEST SUPPLY HEATING

climate system

Setting range: 5 - 80°C

Here, you set the highest supply temperature for the climate system. This means that VVM S320 never calculates a temperature higher than the one set here. If the installation has multiple climate systems, the highest supply temperature can be set for each system. Climate systems 2 – 8 cannot be set to a higher max supply temperature than climate system 1.

Caution

With underfloor heating systems, "Maximum supply temperature for heating" should normally be set between 35 and 45°C.

Check the max floor temperature with your floor supplier.

MENU 1.30.7 - OWN CURVE

Own curve, heating

Caution

Curve 0 must be selected for own curve to apply.

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

Supply temp

Setting range: 5 – 80 °C

MENU 1.30.8 - POINT OFFSET

Outdoor temp. point

Setting range: -40 – 30 °C

Change in curve

Setting range: -10 – 10 °C

Select a change in the heating curve at a certain outdoor temperature here. One step is usually enough to change the room temperature by one degree, but in some cases several steps may be required.

The heating 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 feels cold in the house at e.g. -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

2.1 - More hot water
2.2 - Hot water demand
2.4 - Periodic increase
2.5 - Hot water circulation

MENU 2.1 - MORE HOT WATER

Setting range: 3, 6 and 12 hours, as well as the modes "Off" and "One-time increase".

When there is a temporary increase in hot water demand, this menu can be used to select an increase in the hot water temperature for a selectable time.

Caution

If demand mode "Large" is selected in menu 2.2, no further increase can be made.

The function is activated directly when a time period is selected. The remaining time for the selected setting is shown to the right.

When the time has run out, VVM S320 returns to the set demand mode.

Select "Off" to switch off "More hot water".

MENU 2.2 - HOT WATER DEMAND

Alternative: Smart control, Small, Medium, Large

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

Smart control: With Smart control activated, VVM S320 continuously learns the previous hot water consumption and thereby adapts the temperature in the water heater for minimum energy consumption. If the hot water demand is greater, there is a certain additional amount of hot water available.

Small: This mode gives less hot water at a lower temperature than the other alternatives. This mode can be used in smaller households with a small hot water requirement.

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

Large: This mode gives the most hot water at a higher temperature than the other alternatives. In this mode, the immersion heater may be used in part to heat hot water. In this mode, hot water production is prioritised.

MENU 2.4 - PERIODIC INCREASE

Period

Setting range: 1 - 90 days

Start time

Setting range: 00:00 - 23:59

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

The length of time between increases can be selected here. The time can be set between 1 and 90 days. Tick/untick "Activated" to start/switch off the function.

MENU 2.5 - HOT WATER CIRCULATION

Run time

Setting range: 1 – 60 min

Downtime

Setting range: 0 – 60 min

Set 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." determines how long the hot water circulation pump will run per operation.

"Downtime" determines how long the hot water circulation pump will be stationary between operations.

NOTE

Hot water circulation is activated in menu 7.4 "Selectable in/outputs".

Menu 3 - Info

OVERVIEW

3.1 - Operating info[1]
3.2 - Temperature log
3.4 - Alarm log
3.5 - Product info, summary
3.6 - Licences

1 This menu is also shown in the subordinate heat pump's limited menu system.

MENU 3.1 - OPERATING INFO

Information about the installation's current operating status (e.g. current temperatures) can be obtained here. No changes can be made.

A QR code appears on one side. This QR code indicates serial number, product name and limited operating data.

MENU 3.2 - TEMPERATURE LOG

Here you can see the average temperature indoors week by week over the past year.

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

In installations with ventilation accessories, the exhaust temperature is also shown.

MENU 3.4 - ALARM LOG

To facilitate troubleshooting, the installation's operating status at the time of an alarm is stored here. You can see information for the 10 most recent alarms.

To view operating status in the event of an alarm, select the relevant alarm from the list.

MENU 3.5 - PRODUCT INFO, SUMMARY

Here, you can see general information about your system, such as software versions.

MENU 3.6 - LICENCES

You can view licences for open source code here.

Menu 4 - My system

OVERVIEW

4.1 - Operating mode	
4.2 - Plus functions	4.2.2 - Solar electricity [1]
	4.2.3 - SG Ready
	4.2.5 - Smart Price Adaption™
4.4 - Weather control	
4.5 - Away mode	
4.6 - Smart Energy Source	
4.7 - Energy price	4.7.1 - Electricity price
	4.7.3 - Shunt valve-controlled additional heat
	4.7.4 - Step-controlled additional heat
	4.7.6 - External additional heat
4.8 - Time and date	
4.9 - Language	
4.10 - Country	
4.11 - Tools	4.11.1 - Installer details
	4.11.2 - Audio
	4.11.3 - Fan de-icing
4.30 - Advanced	4.30.4 - Factory setting, user

1 Consult the accessory's Installer Manual.

MENU 4.1 - OPERATING MODE

Operating status

Alternative: auto, manual, add. heat only

Manual

Alternative: Additional heat, heating, Cooling

Add. heat only

Alternative: Heating

The operating mode for VVM S320 is normally set to "Auto". It is also possible to use additional heat only. Select "Manual" to choose which functions are permitted.

If "Manual" or "Additional heat only" is selected, selectable options are shown further down. Tick the functions you want to permit.

Operating mode auto

In this operating mode, VVM S320 automatically selects which functions are permitted.

Operating mode manual

In this operating mode, you can select the functions that are permitted. You cannot deselect "Compressor" in manual mode.

Operating mode add. heat only

In this operating mode the compressor is not active, only additional heat is used.

Caution

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

Caution

You should not change from additional heat only if you do not have a heat pump connected (see menu 7.3.1 "Configure").

Manual

"Compressor" is the unit that produces heating and hot water for the home. You cannot deselect "compressor" in manual mode.

"Additional heat" is the unit that helps the compressor to heat the home and/or the hot water when it cannot manage the entire requirement alone.

"Heating" means you obtain heating in the home. You can deselect the function when you do not wish to have the heating on.

Caution

If you deselect "addition" it may mean that insufficient hot water and/or heating in the accommodation is achieved.

MENU 4.2 - PLUS FUNCTIONS

Settings for any additional functions installed in VVM S320 can be made in the sub menus.

MENU 4.2.3 - SG READY

Here, you set which part of your climate system (e.g. room temperature) will be affected on activation of "SG Ready". The function can only be used in mains networks that support the "SG Ready" standard.

Affect room temperature

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

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

Affect hot water

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

In the case of overcapacity mode on "SG Ready", the hot water is set to large demand mode (immersion heater permitted).

Affect pool temperature

With low price mode on "SG Ready", the desired pool temperature (start and stop temperature) is increased by 1 °C.

With over capacity mode on "SG Ready" the desired pool temperature (start and stop temperature) is increased by 2 °C

NOTE

The function must be connected to two AUX inputs and be activated in menu 7.4 "Selectable in/outputs".

MENU 4.2.5 - SMART PRICE ADAPTION™

Range

Here you select where (which zone) VVM S320 is installed.

Contact your electricity supplier to find out which zone digit to enter.

Affect room temperature

Setting range: 1 - 10

Affect hot water

Setting range: 1 - 4

Affect pool temperature

Setting range: 1 - 10

This function can only be used if your electricity supplier supports Smart price adaption, if you have an hourly tariff agreement and an active myUplink account.

Smart price adaption™ moves the heat pump's consumption over 24 hours to periods with the cheapest electricity tariff, which gives savings for hourly rate based electricity contracts. The function is based on hourly rates for the next 24 hours being retrieved via myUplink and therefore an internet connection and an account for myUplink are required.

You can choose which parts of the installation are to be affected by the electricity price and to what extent; the higher value you select, the greater the effect the electricity price has.

NOTE

A value that is set high may result in increased savings, but may also affect the comfort.

MENU 4.4 - WEATHER CONTROL

Activate weath. contr.

Setting range: on/off

Factor

Setting range: 0 – 10

You can select whether you want VVM S320 to adjust the indoor climate based on the weather forecast here.

You can set factor for outdoor temperature. The higher the value, the greater the effect from the weather forecast.

Caution

This menu is only visible if the installation is connected to myUplink.

MENU 4.5 - AWAY MODE

When away mode is activated, the following functions are affected:

- the setting for heating is lowered slightly
- the setting for cooling is raised slightly (accessory is required)
- the hot water temperature is lowered if demand mode "large" or "medium" is selected
- The AUX function "Away mode" is activated.

If you want, you can select for the following functions to be affected:

- ventilation (accessory is required)
- hot water circulation (accessory is required)

MENU 4.6 - SMART ENERGY SOURCE™

Smart energy source™

Alternative: on/off

Control method

Alternative: Price / CO_2

If Smart Energy Source™ is activated VVM S320 prioritises how / to what extent each docked energy source will be used. Here you can select whether the system will use the energy source that is cheapest at the time or the one that is most carbon dioxide neutral at the time.

Caution

Your choices in this menu affect menu 4.7 - Energy price.

MENU 4.7 - ENERGY PRICE

Here you can use tariff control for your additional heat.

Here you can choose whether the system is to exercise control based on the spot price, tariff control or a set price. The setting is made for each individual energy source. Spot price can only be used if you have an hourly tariff agreement with your electricity supplier.

Set the lower tariff periods. It is possible to set two different date periods per year. Within these periods, it is possible to set up to four different periods on weekdays (Monday to Friday) or four different periods on weekends (Saturdays and Sundays).

MENU 4.7.1 - ELECTRICITY PRICE

Here you can use tariff control for the electric additional heat.

Set the lower tariff periods. It is possible to set two different date periods per year. Within these periods, it is possible to set up to four different periods on weekdays (Monday to Friday) or four different periods on weekends (Saturdays and Sundays).

MENU 4.8 - TIME AND DATE

Set time and date, display mode and time zone here.

TIP

Time and date are set automatically if connected to myUplink. To obtain the correct time, the time zone must be set.

MENU 4.9 - LANGUAGE

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

MENU 4.10 - COUNTRY

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

Language settings can be made regardless of this selection.

NOTE

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

MENU 4.11 - TOOLS

Here, you can find tools for use.

MENU 4.11.1 - INSTALLER DETAILS

The installer's name and telephone number are entered in this menu.

Afterwards, the details are visible in home screen, product overview.

MENU 4.11.2 - AUDIO

Setting range: on/off

Here you choose if you want to hear a sound when you press buttons on the display.

MENU 4.11.3 - FAN DE-ICING

Setting range: on/off

Here, you set de-icing of the fan in the air/water heat pump, if the air/water heat pump has this function.

MENU 4.30 - ADVANCED

Menu Advanced is intended for advanced users.

MENU 4.30.4 - FACTORY SETTING USER

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

Caution

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

Menu 5 - Connection

OVERVIEW

5.1 - myUplink	
5.2 - Network settings	5.2.1 - wifi
	5.2.2 - Ethernet
5.3 - Smart home[1]	
5.10 - Tools	5.10.1 - Direct connection

1 Accessory needed.

MENU 5.1 - MYUPLINK

Here you can manage the installation's connection to myUplink (myuplink.com) and see the number of users connected to the installation via the internet.

A connected user has a user account in myUplink , which has been given permission to control and/or monitor your installation.

Request new connection string

To connect a user account on myUplink to your installation, you must request a unique connection code.

1. Select "Request new connection string"
2. The installation now communicates with myUplink to create a connection code.
3. When a connection string has been produced, it is shown in this menu and is valid for 60 minutes.

Disconnect all users

To disconnect the users who are connected to the installation via myUplink, select "Disconnect all users".

NOTE

After disconnecting all users none of them can monitor or control your installation via myUplink without requesting a new connection string.

MENU 5.2 - NETWORK SETTINGS

Here, you choose whether your system connects to the Internet via wifi (menu 5.2.1) or via a network cable (Ethernet) (menu 5.2.2). From each menu, you can make settings for TCP/IP.

TCP/IP settings

You can set TCP/IP settings for your installation here.

Automatic setting (DHCP)

Activate "Automatic". The installation now receives the TCP/IP settings using DHCP.

Manual setting

Select "IP address" and enter correct address using the keyboard.

Repeat the procedure for "Network mask", "Gateway" and "DNS".

Caution

The installation cannot connect to the internet without the correct TCP/IP settings. If unsure about applicable settings use the automatic mode or contact your network administrator (or similar) for further information.

TIP

All settings made since opening the menu can be reset by selecting "Reset".

MENU 5.3 - SMART HOME (ACCESSORY REQUIRED)

If you have a Smart home system that can communicate with myUplink, you activate these functions in this menu.

Caution

The Smart Home function requires myUplink in order to work.

MENU 5.10 - TOOLS

As the installer, you cane.g. connect an installation via an app here, by activating an access point for direct connection to a mobile phone.

Menu 6 - Scheduling

OVERVIEW

6.1 - Holiday
6.2 - Scheduling

MENU 6.1 - HOLIDAY

In this menu, you schedule longer changes in heating and hot water temperature.

You can also schedule settings for certain installed accessories.

If a room sensor is installed and activated, the desired room temperature (°C) is set during the time period.

If a room sensor is not activated, the desired offset of the heating curve is set. One step is usually enough to change the room temperature by one degree, but in some cases several steps may be required.



TIP

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



Caution

Holiday settings finish on the selected date. If you want to repeat the holiday setting once the end date has passed, go into the menu and change the date.

MENU 6.2 - SCHEDULING

In this menu, you schedule repeated changes in heating and hot water.

You can also schedule settings for certain installed accessories.

If a room sensor is installed and activated, the desired room temperature (°C) is set during the time period.

If a room sensor is not activated, the desired offset of the heating curve is set. One step is usually enough to change the room temperature by one degree, but in some cases several steps may be required.



Caution

A schedule repeats according to the selected setting (e.g. every Monday) until you go into the menu and switch it off.

Menu 7 - Service

OVERVIEW

7.1 - Operating settings	7.1.1 - Hot water	7.1.1.1 - Temperature setting
		7.1.2.1 - Operating mode, heating medium pump
	7.1.2 - Circulation pumps	7.1.2.2 - Pump speed, heating medium
	7.1.3 - Compressor	7.1.3.1 - Block freq
	7.1.4 - Ventilation [1]	7.1.4.1 - Fan speed, exhaust air[1]
		7.1.4.2 - Fan speed, supply air[1]
		7.1.4.3 - Ventilation adjustment [1]
	7.1.5 - Additional heat	7.1.5.1 - Internal electric additional heat
	7.1.6 - Heating	7.1.6.1 - Max diff. supply temperature
		7.1.6.2 - Flow setting, climate system
		7.1.6.3 - Power at DOT
	7.1.7 - Cooling [1]	
	7.1.8 - Alarm	7.1.8.1 - Alarm actions
		7.1.8.2 - Emergency mode
	7.1.9 - Load monitor	
	7.1.10 - System settings	7.1.10.1 - Operating priority
		7.1.10.2 - Auto mode setting
		7.1.10.3 - Degree minutes setting
7.2 - Accessory settings [1]	7.2.1 - Add/remove accessories	
7.3 - Multi-installation	7.3.1 - Configure	
	7.3.2 - Installed heat pump	
	7.3.3 - Name heat pump	
	7.3.5 - Serial number	
7.4 - Selectable in/outputs		
7.5 - Tools	7.5.1 - Heat pump, test	7.5.1.1 - Test mode
	7.5.2 - Underfloor drying function	
	7.5.3 - Forced control	
	7.5.8 - Screen lock	
	7.5.9 - Modbus TCP/IP	
7.6 - Factory setting service		
7.7 - Start guide		
7.8 - Quick start		
7.9 - Logs	7.9.1 - Change log	
	7.9.2 - Extended alarm log	
	7.9.3 - Black box	

[1] Consult the accessory's Installer Manual.

MENU 7.1 - OPERATING SETTINGS

Make operating settings for the system here.

MENU 7.1.1 - HOT WATER

This menu contains advanced settings for hot water operation.

MENU 7.1.1.1 - TEMPERATURE SETTING

Start temperature

Demand mode, small/medium/large

Setting range: 5 – 70 °C

Stop temperature

Demand mode, small/medium/large

Setting range: 5 – 70 °C

Stop temperature periodic increase

Setting range: 55 – 70 °C

Here you set the start and stop temperature of the hot water for the different demand modes in menu 2.2 as well as the stop temperature for periodic increase (menu 2.4).

MENU 7.1.2 - CIRCULATION PUMPS

This menu contains sub-menus where you can make advanced circulation pump settings.

MENU 7.1.2.1 - OPERATING MODE HEATING MEDIUM PUMP GP1

Operating status

Alternative: Auto, continuous

Auto: The heating medium pump runs according to the current operating mode for VVM S320.

Continuous: Continuous operation.

MENU 7.1.2.2 - PUMP SPEED HEATING MEDIUM GP1

Make settings here for the heating medium pump's speed in the current operating mode, for example in heating or hot water operation. Which operating modes can be changed depends on which accessories are connected.

Heating, auto

Alternative: on/off

Minimum permitted speed

Setting range: 1 - 50 %

Heating, manual

Setting range: 1 - 100 %

Speed in standby mode

Setting range: 1 - 100 %

Active cooling, auto

Alternative: on/off

Active cooling, manual

Setting range: 1 - 100 %

Speed during active cooling

Setting range: 1 - 100 %

Highest permitted speed

Setting range: 50 - 100 %

Heating, auto: Here, you set whether the heating medium pump is to be regulated automatically or manually.

Minimum permitted speed: Here, you can restrict the pump speed so that the heating medium pump is not allowed to operate at a lower speed in auto mode than the set value.

Heating, manual: If you have opted to control the heating medium pump manually, you set the desired pump speed here.

Speed in standby mode: Here, you set the speed the heating medium pump will have in standby mode. Standby mode occurs when heating operation is permitted but there is no need for either compressor operation or electric additional heat.

Active cooling, auto: Here, you set whether the heating medium pump is to be regulated automatically or manually.

Active cooling, manual: If you have opted to control the heating medium pump manually, you set the desired pump speed here.

Speed during active cooling: Here, you set the desired pump speed for active cooling.

Maximum permitted speed: Here you can restrict the pump speed so that the heating medium pump is not allowed to operate at a higher speed than the set value.

MENU 7.1.3 - COMPRESSOR

This menu contains sub-menus where you can make advanced compressor settings.

MENU 7.1.3.1 BLOCK FREQ

Block freq 1 and 2

Maximum setting range: 50 Hz.

Here you can set a frequency range where the compressor is blocked. The limits for the setting range can differ depending on model of heat pump.

> ⚠ *NOTE*
>
> A large blocked frequency range can cause the compressor to run jerkily.

MENU 7.1.5 - ADDITIONAL HEAT

This menu contains sub-menus where you can make advanced additional heat settings.

MENU 7.1.5.1 - INTERNAL ELECTRIC ADDITIONAL HEAT

Max set electrical power

Setting range 1x230V: 0 – 7 kW

Max set electrical power (SG Ready)

Setting range 1x230V: 0 – 7 kW

Here you set the max electrical power for the internal electric additional heat in VVM S320, during normal operation and in overcapacity mode (SG Ready).

MENU 7.1.6 - HEATING

This menu contains sub-menus where you can make advanced settings for heating operation.

MENU 7.1.6.1 - MAX DIFFERENCE SUPPLY TEMPERATURE

Max difference compressor

Setting range: 1 – 25 °C

Max difference additional heat

Setting range: 1 – 24 °C

BT12 offset heat pump 1

Setting range: -5 – 5°C

Here you set the maximum permitted difference between the calculated and actual supply temperature in the event of compressor or additional heat mode respectively. Max difference additional heat can never exceed max difference compressor

Max. difference, compressor: If the current supply temperature *exceeds* the calculated supply by the set value, the degree minute value is set to +1. The compressor in the heat pump stops if there is only a heating demand.

Max difference additional heat: If "Additional heat" is selected and activated in menu 4.1 and the current supply temperature *exceeds* the calculated temperature by the set value, the additional heat is forced to stop.

BT12 offset: If there is a difference between temperature sensor, heating medium supply (BT25), and temperature sensor, condenser supply (BT12), you can set a fixed offset here to compensate for the difference.

MENU 7.1.6.2 - FLOW SETTING, CLIMATE SYSTEM

Setting

Alternative: radiator, floor heat., rad. + floor heat., Own setting

Setting range DOT: -40.0 – 20.0 °C

Own setting

Setting range dT at DOT 2.0 – 20.0

Setting range DOT: -40.0 – 20.0°C

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

dT at DOT is the difference in degrees between supply and return temperatures at design outdoor temperature.

MENU 7.1.6.3 - POWER AT DOT

Alternative: Manually selected power at DOT, Power at DOT

Manually selected power at DOT

Setting range: on/off

Power at DOT

Setting range: 1 – 100 kW

Here, you set the power the property requires at DOT (dimensioned outdoor temperature).

If you choose not to activate "Manually selected power at DOT", the setting is made automatically, i.e. VVM S320 selects suitable power at DOT.

MENU 7.1.8 - ALARM

In this menu, you make settings for the safety measures that VVM S320 will implement in the event of any operational disruption.

MENU 7.1.8.1 - ALARM ACTIONS

Reduce room temperature

Setting range: on/off

Stop producing HW

Setting range: on/off

Audio signal in event of alarm

Setting range: on/off

Select how you want the VVM S320 to alert you that there is an alarm in the display here.

The different alternatives are that VVM S320 stops producing hot water and/or reduces the room temperature.

Caution

If no alarm action is selected, this can result in higher energy consumption in the event of a malfunction.

MENU 7.1.8.2 - EMERGENCY MODE

Immersion heater output

Setting range 1X230V: 4 – 7 kW

Settings are made in this menu for how the additional heat will be controlled in emergency mode.

Caution

In emergency mode, the display is switched off. If you feel the selected settings are insufficient, you will not be able to change these.

MENU 7.1.9 - LOAD MONITOR

Fuse size

Setting range: 1 – 400 A

Transformer ratio

Setting range: 300 – 3,000

Here, you set fuse size and transformer ratio for the system. The transformer ratio is the factor that is used to convert the metered voltage to current.

MENU 7.1.10 - SYSTEM SETTINGS

You make your various system settings for your installation here.

MENU 7.1.10.1 - OPERATING PRIORITY

Setting range: 0 – 180 minutes

Select 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.

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



MENU 7.1.10.2 - AUTO MODE SETTINGS

Stop heating

Setting range: -20 – 40°C

Stop additional heat

Setting range: -25 – 40°C

Filtering time

Setting range: 0 – 48 h

Stop heating, Stop additional heat: In this menu, you set the temperatures that the system is to use for control in auto mode.

Caution

It is not possible to set "Stop additional heat" higher than "Stop heating".

In systems where heating and cooling share the same pipes, "Stop heating" cannot be set higher than "Start cooling" if there is no cooling/heating sensor.

Filtering time: You can set the time over which the average outdoor temperature is calculated. If you select 0, the current outdoor temperature is used.

MENU 7.1.10.3 - DEGREE MINUTES SETTING

Current value

Setting range: -3,000 – 100 DM (degree minutes)

Heating auto

Setting option: on/off

Start compressor

Setting range: -1,000 – (-30) DM (degree minutes)

Relative DM Start additional heat

Setting range: 100 – 2,000 DM (degree minutes)

Difference between additional heat steps

Setting range: 10 – 1,000 DM (degree minutes)

Start active cooling

Setting options: 10 – 300 DM (degree minutes)

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

A higher value for "Start compressor" can give more compressor starts, which increases wear on the compressor. Too low a value can give uneven indoor temperatures.

Start active cooling

Here you can set when active cooling is to start.

MENU 7.2 - ACCESSORY SETTINGS

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

MENU 7.2.1 - ADD/REMOVE ACCESSORIES

Here, you tell VVM S320 which accessories are installed.

To identify connected accessories automatically, select "Search for accessories". It is also possible to select accessories manually from the list.

MENU 7.3 - MULTI-INSTALLATION

You make settings for the heat pump that is connected to VVM S320 in the sub-menus.

MENU 7.3.1 - CONFIGURE

Search installed heat pump: Here you can search for, activate or deactivate the connected heat pump.

MENU 7.3.2 - INSTALLED HEAT PUMP

Here, you make settings that are specific for the installed heat pump. To see what settings you can make, see the Installer Manual for the heat pump.

MENU 7.3.3 - NAME HEAT PUMP

Here, you can give a name to the heat pump that is connected to VVM S320.

MENU 7.3.5 - SERIAL NUMBER

Here, you allocate your heat pumps a serial number.

Caution

This menu is only shown if at least one connected heat pump does not have a serial number.

MENU 7.4 - SELECTABLE IN/OUTPUTS

Here, you state where the external switch function has been connected, either to one of the AUX inputs on terminal block X28 or to the AUX output on terminal block X27.

MENU 7.5 - TOOLS

Here, you can find functions for maintenance and service work.

MENU 7.5.1 - HEAT PUMP, TEST

NOTE

This menu and its sub-menus are intended for testing the heat pump.

Use of this menu for other reasons may result in your installation not functioning as intended.

MENU 7.5.2 - UNDERFLOOR DRYING FUNCTION

Length period 1 – 7

Setting range: 0 – 30 days

Temperature period 1 – 7

Setting range: 15 – 70 °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.

When the underfloor drying function has been activated, a counter is displayed showing the number of full days the function has been active. The function counts degree minutes in the same way as during normal heating operation, but for the supply temperatures that are set for the respective period.

TIP

If the operating mode "Additional heat only" is to be used, select this in menu 4.1.

For a more even supply temperature, the additional heat can be started earlier by setting "relative DM start additional heat" in menus 7.1.10.3 to -80. When set underfloor drying periods have finished, reset the menus 4.1 and 7.1.10.3 as per previous settings.

MENU 7.5.3 - FORCED CONTROL

Here you can force control the various components in the installation. The most important safety functions remain active however.

NOTE

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

MENU 7.5.8 - SCREEN LOCK

Here, you can choose to activate the screen lock for VVM S320. During activation, you will be asked to enter the required code (four digits). The code is also used to deactivate the screen lock as well as when changing code.

MENU 7.5.9 - MODBUS TCP/IP

Setting range: on/off

You activate Modbus here.

MENU 7.6 - FACTORY SETTING SERVICE

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

You can also choose to reset the connected heat pump to the factory settings here.

NOTE

When resetting, the start guide is displayed the next time VVM S320 restarts.

MENU 7.7 - START GUIDE

When VVM S320 is started for the first time, the start guide is automatically activated. From this menu, you can start it manually.

MENU 7.8 - QUICK START

You can quick start the compressor here.

Caution

One of the following demands for the compressor must exist for quick start:

- heating
- hot water
- cooling (accessory is required)
- pool (accessory is required)

Caution

Too many quick starts in a short space of time may damage the compressor and its auxiliary equipment.

MENU 7.9 - LOGS

Under this menu, there are logs that collect information about alarms and changes made. The menu is intended to be used for troubleshooting.

MENU 7.9.1 - CHANGE LOG

Read off any previous changes to the control system here.

NOTE

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

MENU 7.9.2 - EXTENDED ALARM LOG

This log is intended to be used for troubleshooting.

MENU 7.9.3 - BLACK BOX

Via this menu, it is possible to export all logs (Change log, Extended alarm log) to USB. Connect a USB memory and select the log(s) you want to export.

10 Service

Service actions

NOTE

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

When replacing components on VVM S320 only replacement parts from NIBE may be used.

NOTE

If an electrical connection has been disconnected and is connected, ground must be checked using a suitable multimeter.

NOTE

An immersion heater without a temperature limiter is not allowed to be installed.

NOTE

After servicing, complete the relevant Service Interval Record section of the Benchmark Checklist located at the back of this document.

Completion of the Service Interval Record is a condition of warranty. For full terms and conditions of warranty, please see our website nibe.co.uk.

MAINTENANCE

General inspection

Check the following:

1. Condition of casing.
2. Electrical connections.
3. Pipe connections.
4. Alarm log.

Correct any fault before continuing.

Water heater

Check the following:

1. Hot water start and stop temperature.
2. Pressure controlled bypass valve.
3. T&P valve.
4. Overflow pipe.
5. Pressure expansion vessel.

Correct any fault before continuing.

Climate system

Check the following:

1. Climate system start and stop temperature.
2. Heating curve settings.
3. Function of the room sensor (if installed).
4. System pressure.
5. Flow and return temperature. The difference must be 5 - 10 ℃.

Correct any fault before continuing.

EMERGENCY MODE

NOTE

Do not start the system before filling up with water. Components in the system could be damaged.

Emergency mode is used in event of operational interference and in conjunction with service.

You can activate the emergency mode both when VVM S320 is running and when it is switched off.

When the emergency mode is active, the status lamp turns yellow.

To activate when VVM S320 is running: press and hold the on/off button (SF1) for 2 seconds and select "emergency mode" from the shutdown menu.

To activate when VVM S320 is switched off: press and hold the on/off button (SF1) for 5 seconds. (Deactivate the emergency mode by pressing once.)

When VVM S320 is put in emergency mode, the display is switched off and the most basic functions are active:

- The immersion heater works to maintain the calculated supply temperature. If there is no outdoor sensor (BT1), the immersion heater works to maintain the maximum supply temperature, set in menu 1.30.6.
- Only the circulation pumps and electric additional heat are active. The immersion heater is stepped according to the setting in menu 7.1.8.2 - Emergency mode.

DRAINING THE HOT WATER HEATER

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

DRAINING THE CLIMATE SYSTEM

In order to carry out servicing on the climate system, it is often easier to drain the system first using the filling valve (QM11)*.

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

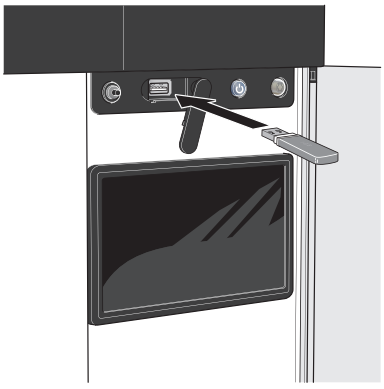
1. Connect a hose to the lower filler valve for heating medium (QM11).
2. Open the valve to drain the climate system.

*See section "Component locationVVM S320".

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



If you connect the product to the network, you can upgrade the software without using the USB port. See section "myUplink".

The display unit is equipped with a USB socket that can be used to update the software and save logged information in VVM S320.

When a USB memory is connected, a new menu (menu 8) appears in the display.

Update the software

You can update the software with a USB memory in menu 8.1.

> *NOTE*
>
> In order to update using a USB memory, the memory must contain a file with software for VVM S320 from NIBE.

One or more files are shown in the display. Select a file and press "OK".

> *TIP*
>
> A software update does not reset the menu settings in VVM S320.

> *Caution*
>
> If the update is interrupted before it is complete (e.g. in the event of a power cut etc.) the software is automatically restored to the previous version.

Menu 8.2 - Logging

Setting range: 1 s – 60 min

Here you can choose how current measurement values from VVM S320 should be saved onto a log file on the USB memory.

1. Set the desired interval between loggings.
2. Select "Start logging".
3. The relevant measurement values from VVM S320 are now saved in a file on the USB memory at the set interval until you select "Stop logging".

> *Caution*
>
> Select "Stop logging" before removing the USB memory.

Logging floor drying

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

- Make sure that "floor drying function" is activated in menu 7.5.2.
- A log file is now created, where the temperature and the immersion heater output can be read off. Logging continues until "logging floor drying activated" is deselected or until "floor drying function" is stopped.

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

Menu 8.3 - Manage settings

Here you can manage (save as or retrieve from) all the menu settings (user and service menus) in VVM S320 with a USB memory.

The menu settings can be saved to the USB memory using "Save settings", in order to restore them later or to copy the settings to another VVM S320.

> *Caution*
>
> 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.

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

Manual restoring of software

If you want to restore the software to the previous version:

1. Switch off VVM S320 via the shutdown menu. The status lamp turns blue.
2. Press the on/off button once.
3. When the status button changes colour from blue to white, press and hold the on/off button.
4. When the status lamp changes to green, release the on/off button.

> *Caution*
>
> If the status lamp should turn yellow at any time, VVM S320 has ended up in emergency mode and the software has not been restored.

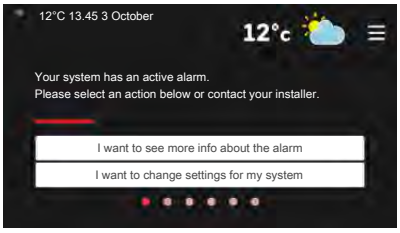
> *TIP*
>
> If you have a previous version of the software on your USB memory, you can install that instead of manually restoring the version.

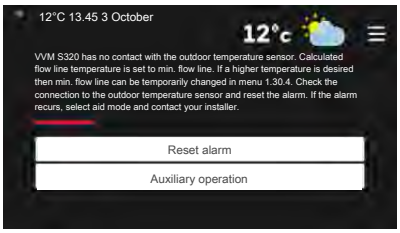
11 Disturbances in comfort

In most cases, VVM S320 notes a malfunction (a malfunction can lead to disruption in comfort) and indicates this with alarms, and instructions for action, in the display.

Info-menu

Manage alarm





In the event of an alarm, a malfunction has occurred and the status lamp shines with a steady red light. You receive information about the alarm in the smart-guide on the display.

ALARM

In the event of an alarm with a red status lamp, a malfunction has occurred that VVM S320 cannot remedy itself. On the display, you can see what type of alarm it is and reset it.

In many cases, it is sufficient to select "Reset alarm" for the installation to revert to normal operation.

If a white light comes on after selecting "Reset alarm", the alarm has been remedied.

It the red light is still on or if the alarm recurs, the cause of the problem remains.

"Auxiliary operation" is a type of emergency mode. This means that the installation attempts to produce heat and/or hot water, even though there is some kind of problem. This could mean that the heat pump's compressor is not in operation. In this case, any electric additional heat produces heat and/or hot water.

> *Caution*
>
> To select "Auxiliary operation", an alarm action must be selected in menu 7.1.8.1 – "Alarm actions".

> *Caution*
>
> Selecting "Auxiliary operation" is not the same as correcting the problem that caused the alarm. The status lamp will therefore remain red.

Troubleshooting

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

Basic actions

Start by checking the following items:

- Group and main fuses of the accommodation.
- The property's earth circuit breaker.
- Miniature circuit breaker for VVM S320 (FC1).
- The temperature limiter in VVM S320 (FQ10).

Low hot water temperature or a lack of hot water

This part of the fault-tracing chapter only applies if the water heater is installed in the system.

- Closed or choked filling valve for the hot water.
  - Open the valve.
- Mixing valve (if there is one installed) set too low.
  - Adjust the mixer valve.
- VVM S320 in incorrect operating mode.
  - Enter menu 4.1. ("Operating mode"). If "auto" mode is selected, select a higher value for "stop additional heat" in menu 7.1.10.2.
  - Hot water is produced with VVM S320 in "manual" mode. If there is no air/water heat pump, "additional heat" must be activated.
- Large hot water consumption.
  - Wait until the hot water has heated up. Temporarily increased hot water capacity can be activated in home screen "hot water" or in menu 2.1.
- Too low hot water setting.
  - Enter menu 2.2 and select a higher demand mode.
- Low hot water access with the "Smart Control" function active.
  - If the hot water usage has been low for an extended period of time, VVM S320 will produce less hot water than normal. Activate "More hot water" in menu 2.1.
- Too low or no operating prioritisation of hot water.
  - Enter menu 7.1.10.1 and increase the time for when hot water is to be prioritised. Note that if the time for hot water is increased, the time for heating production is reduced, which can give lower/uneven room temperatures.
- "Holiday" activated in menu 6.1.
  - Enter menu 6.1 and deactivate.

Low room temperature

- Closed thermostats in several rooms.
  - Set the thermostats to max in as many rooms as possible. Adjust the room temperature via home screen heating, rather than choking the thermostats.
- VVM S320 in incorrect operating mode.
  - Enter menu 4.1 ("Operating mode"). If "auto" mode is selected, select a higher value for "stop heating" in menu 7.1.10.2.
  - If "manual" mode is selected, select "heating". If this is not enough, then also select "additional heat".
- Too low set value on the automatic heating control.
  - Go to home screen heating or menu 1.30.1 (Curve, heating) and adjust the heating curve offset upwards. If the room temperature is only low in cold weather, the curve slope in menu 1.30.1 (Curve, heating) may need to be adjusted upwards.
- Too low or no operating prioritisation of heat.
  - Enter menu 7.1.10.1 and increase the time for when heating is to be prioritised. Note that if the time for heating is increased the time for hot water production is reduced, which can give smaller amounts of hot water.
- "Holiday mode" activated in menu 6.1.
  - Enter menu 6.1 and deactivate.
- External switch for changing room temperature activated.
  - Check any external switches.
- Air in the climate system.
  - Vent the climate system.
- Closed valves to the climate system or heat pump.
  - Open the valves.

High room temperature

- Too high set value on the automatic heating control.
  - Go to home screen heating or menu 1.30.1 (Curve, heating) and adjust the heating curve offset downwards. If the room temperature is only high in cold weather, the curve slope in menu 1.30.1 (Curve, heating) may need to be adjusted downwards.
- External switch for changing the room temperature activated.
  - Check any external switches.

Uneven room temperature.

- Incorrectly set heating curve.
  - Fine-tune the heating curve in menu 1.30.1.
- Too high set value on "dT at DOT"..
  - Go to menu 7.1.6.2 (flow set. climate system) and reduce the value of "DOT".
- Uneven flow over the radiators.
  - Adjust the flow distribution between the radiators.

Low system pressure

- Not enough water in the climate system.
  - Fill the climate system with water and check for leaks (see chapter "Filling and venting").

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

- There is no heating or cooling demand (accessory is required for cooling).
  - VVM S320 does not call on heating, cooling or hot water.
- Alarm tripped.
  - VVM S320 temporarily blocked, see menu 3.1 "Operating info" for more information.
  - Follow the display instructions.

Add. heat only

If you are unsuccessful in rectifying the fault and are unable to heat the house, you can, whilst waiting for assistance, continue running the heat pump in emergency mode or "Additional heat only" mode. "Additional heat only" mode means that additional heat only is used to heat the house.

SET THE INSTALLATION TO ADDITIONAL HEAT MODE

1. Go to menu 4.1 "Operating mode".
2. Select "Additional heat only".

EMERGENCY MODE

You can activate the emergency mode both when VVM S320 is running and when it is switched off.

To activate when VVM S320 is running: press and hold the on/off button (SF1) for 2 seconds and select "emergency mode" from the shutdown menu.

To activate when VVM S320 is switched off: press and hold the on/off button (SF1) for 5 seconds. (Deactivate the emergency mode by pressing once.)

12 Accessories

Some accessories manufactured before 2019 may need to have their circuit board updated in order to be compatible with VVM S320. For more information, see the Installer Manual for the relevant accessory.

ACCESSORY CARD AXC 40

An accessory card is required if step controlled addition (e.g. external electric boiler) or if shunt controlled addition (e.g. wood/oil/gas/pellet boiler) is to be connected to VVM S320.

An accessory card is also required if for example an external circulation pump is connected to VVM S320 at the same time that the buzzer alarm is activated.

Part no. 067 060

ACTIVE COOLING. ACS 310

ACS 310 is an accessory that enables VVM S320 to control the production of cooling.

Part no. 067 248

AUXILIARY RELAY HR 10

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

Part no 067 309

BASE EXTENSION EF 45

This accessory is used to create a larger connection area under VVM S320.

Part no. 067 152

BUFFER VESSEL UKV

UKV is an accumulator tank that is suitable for connection to a heat pump or another external heat source, and can have several different applications. It can also be used during external control of the heating system.

UKV 40

Part no. 088 470

UKV 100

Part no. 088 207

UKV 500

Part no. 080 114

UKV 200 Cooling

Part no. 080 321

UKV 300 Cooling

Part no. 080 330

COMMUNICATION MODULE FOR SOLAR ELECTRICITY EME 20

EME 20 is used to enable communication and control between inverters for solar cells from NIBE and VVM S320.

Part no. 057 188

ENERGY MEASUREMENT KIT EMK 300

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

Part no. 067 314

ENERGY MEASUREMENT KIT EMK 500

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

Part no. 067 178

EXHAUST AIR HEAT PUMP S135*

S135 is an exhaust air heap pump specially designed to combine the recovery of mechanical exhaust air with an air/water heat pump. Indoor module/control module controls S135.

Part no. 066 161

*The accessory requires that NIBE air/water heat pump is installed.

EXTERNAL ELECTRIC ADDITIONAL HEAT ELK

ELK 5

Electric heater
5 kW
Part no. 069 025

ELK 8

Electric heater
8 kW
Part no. 069 026

EXTRA SHUNT GROUP ECS 40/ECS 41

This accessory is used when VVM S320 is installed in houses with two or more different heating systems that require different supply temperatures.

ECS 40 (Max 80 m²)

Part no 067 287

ECS 41 (approx. 80-250 m²)

Part no 067 288

HUMIDITY SENSOR HTS 40

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

Part no. 067 538

POOL HEATING POOL 310*

POOL 310 is an accessory that enables pool heating with VVM S320.

Part no. 067 247

*The accessory requires that NIBE air/water heat pump is installed.

ROOM UNIT RMU S40

The room unit is an accessory that allows the control and monitoring of VVM S320 to be carried out in a different part of your home to where it is located.

Part no. 067 650

SOLAR PACKAGE NIBE PV

Solar panel package, 3 - 24 kW, (10 - 80 panels), which is used to produce your own electricity.

TOP CABINET TOC 30

Top cabinet, which conceals any pipes/ventilation ducts.

Height 245 mm

Part no. 067 517

Height 345 mm

Part no. 067 518

Height 385-635 mm

Part no. 067 519

VENTILATION HEAT EXCHANGER ERS

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

ERS S10-400

Part no. 066 163

ERS 20-250

Part no. 066 068

Electric air heater EAH

In cold weather, EAH heats the incoming outdoor air slightly to prevent the condensation in ERS from freezing. Used mainly in colder climates.

EAH 20-900 (300-900 W)

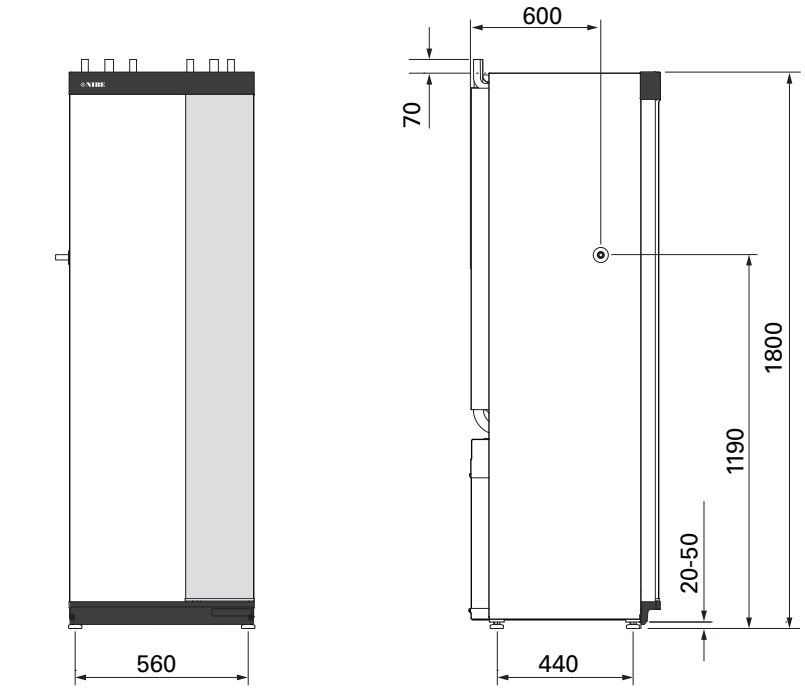
Part no. 067 604

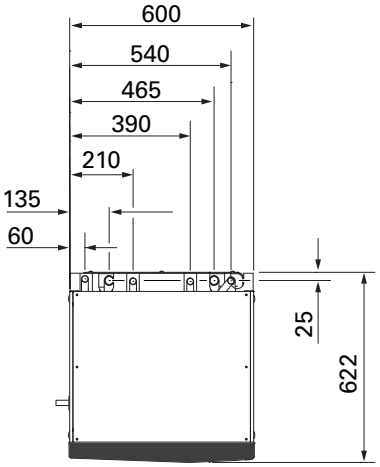
EAH 20-1800 (300-1800 W)

Part no. 067 603

13 Technical data

Dimensions and setting-out coordinates





Technical specifications

1X230V

1x230V		
Compatible NIBE air/water heat pumps [1)]		
F2040		F2040-6
F2040		F2040-8
F2040		F2040-12
F2120		F2120-8
F2120		F2120-12
NIBE SPLIT HBS 05		AMS 10-6 + HBS 05-6
NIBE SPLIT HBS 05		AMS 10-8 + HBS 05-12
NIBE SPLIT HBS 05		AMS 10-12 + HBS 05-12
Electrical data		
Additional power	kW	7
Rated voltage		230V~50Hz
Max operating current	A	32
Fuse	A	32
Output, GP1	W	2 – 75
Output, GP6	W	2 – 45
Enclosure class		IPX1B
WLAN		
2.412 – 2.484 GHz max power	dbm	11
Wireless units		
2.405 – 2.480 GHz max power	dbm	4
Equipment complying with IEC 61000-3-12		
Equipment complying with IEC 61000-3-3		
Heating medium circuit, hot water coil		
Energy class, GP1		low energy
Energy class, GP6		low energy
Max HM temp	°C	70
Pipe connections		
Heating medium		Ø22
Hot water connection		Ø22
Cold water connection		Ø22
Heat pump connections		Ø22

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

Other, indoor module		
Capacity, hot water heating according to EN 16 147		
Tap volume 40°C (comfort mode Medium) – Stainless steel	l	207
Dimensions and weight		
Width	mm	600
Depth	mm	615
Height (without base)	mm	1,800
Height (with base)	mm	1,830 – 1,850
Required ceiling height	mm	1,910
Weight Stainless steel (excl. packaging and without water)	kg	123
Substances according to Directive (EG) no. 1907/2006, article 33 (Reach)		Lead in brass components
Part number Stainless steel – NIBE VVM S320 1x230V R UK		069 199

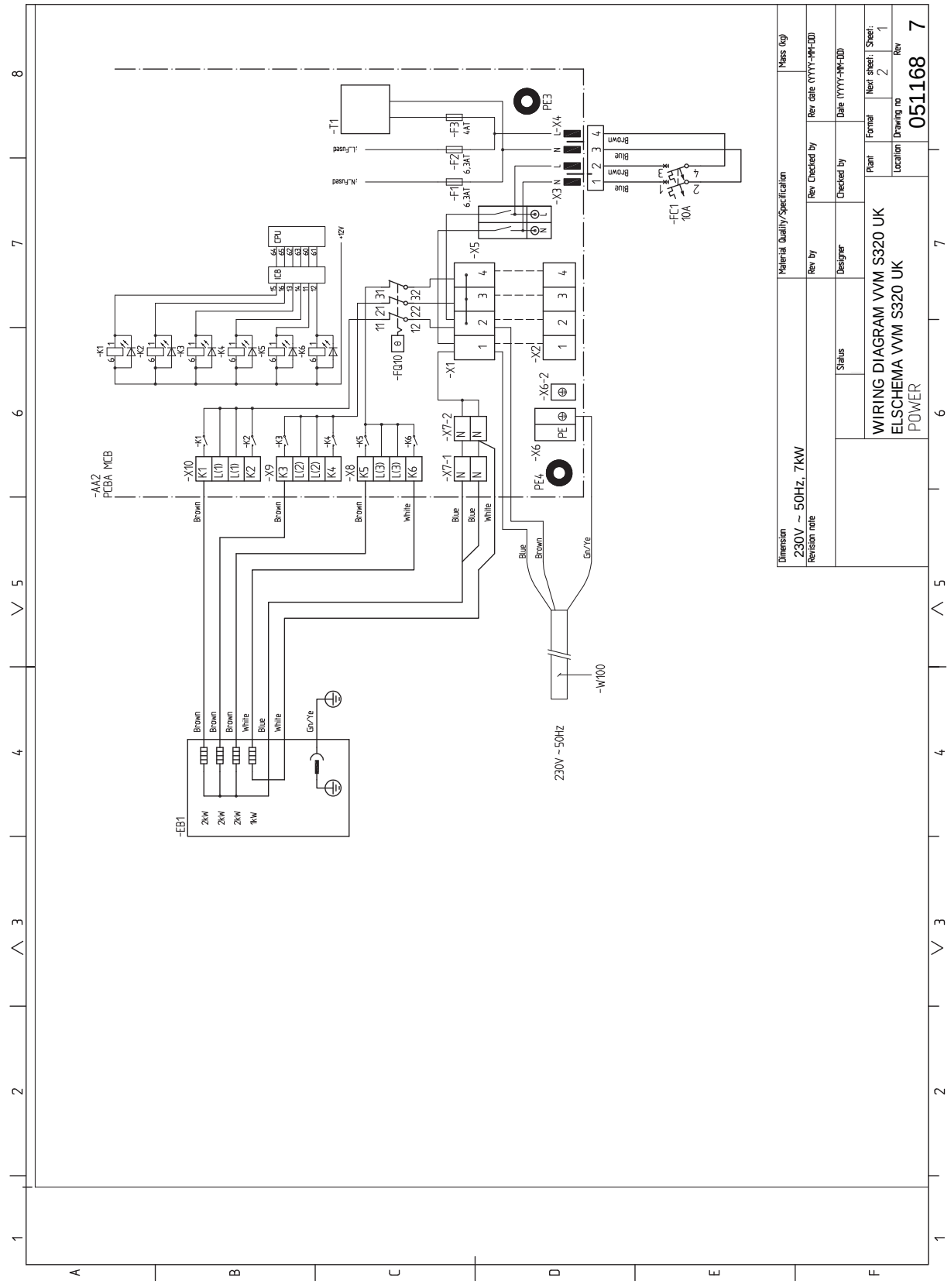
Maximum water supply pressure	MPa (bar)	1.6 (16)
Operating pressure, tap water	MPa (bar)	0.6 (6)
Expansion vessel, tap water, precharge pressure	MPa (bar)	0.35 (3.5)
Pressure reduction valve, setting	MPa (bar)	0.35 (3.5)
Volume, stainless steel water heater	litres	173
Volume coil stainless steel	litres	7.8
Volume primary, Heating medium coil	litres	8
Volume, buffer vessel	litres	22
Volume expansion vessel (external)	litres	25
Mass unit, filled with water	kg	330

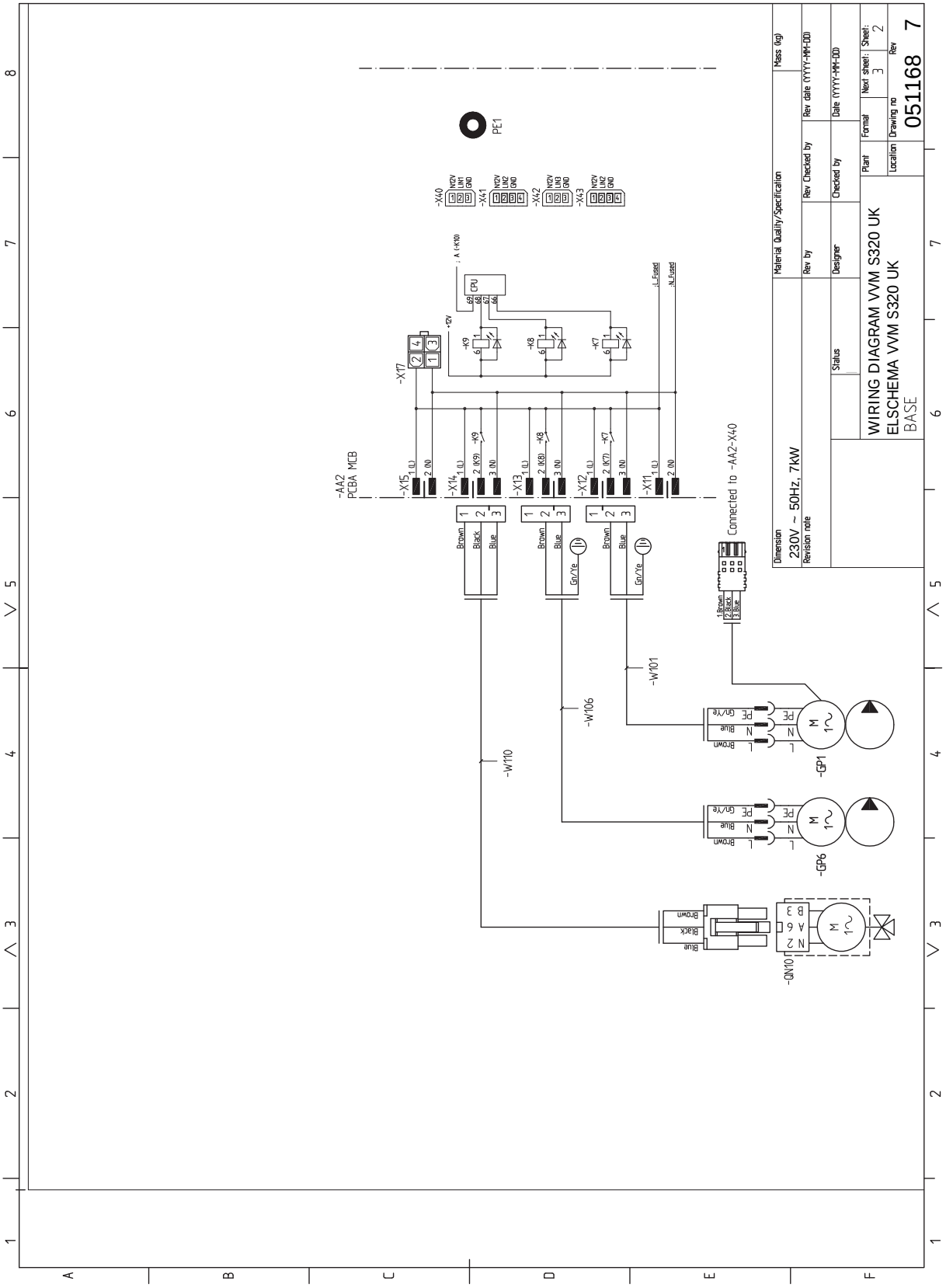
Operating pressure (heating medium)	MPa (bar)	0.3 (3)
Max operating pressure of T&P-valve	MPa (bar)	0.7 (7)
Set opening pressure expansion valve tap water	MPa (bar)	0.6 (6)
Cut out, temperature limiter	C	89
Capacity coil, 10 °C to 60 °C, primary flow 900 l/h	kW	29.89
Reheating time	min	19
Volume of water drawn off, above 40 °C	litres	271
Pressure drop at 900 l/h	kPa	13
Heat loss	kWh/24h	2.71
Max temperature, heating fluid	°C	70
Max operating temperature T&P-valve	°C	95
Maximum power supply	kW	7
Discharge capacity of T&P-valve	kW	25

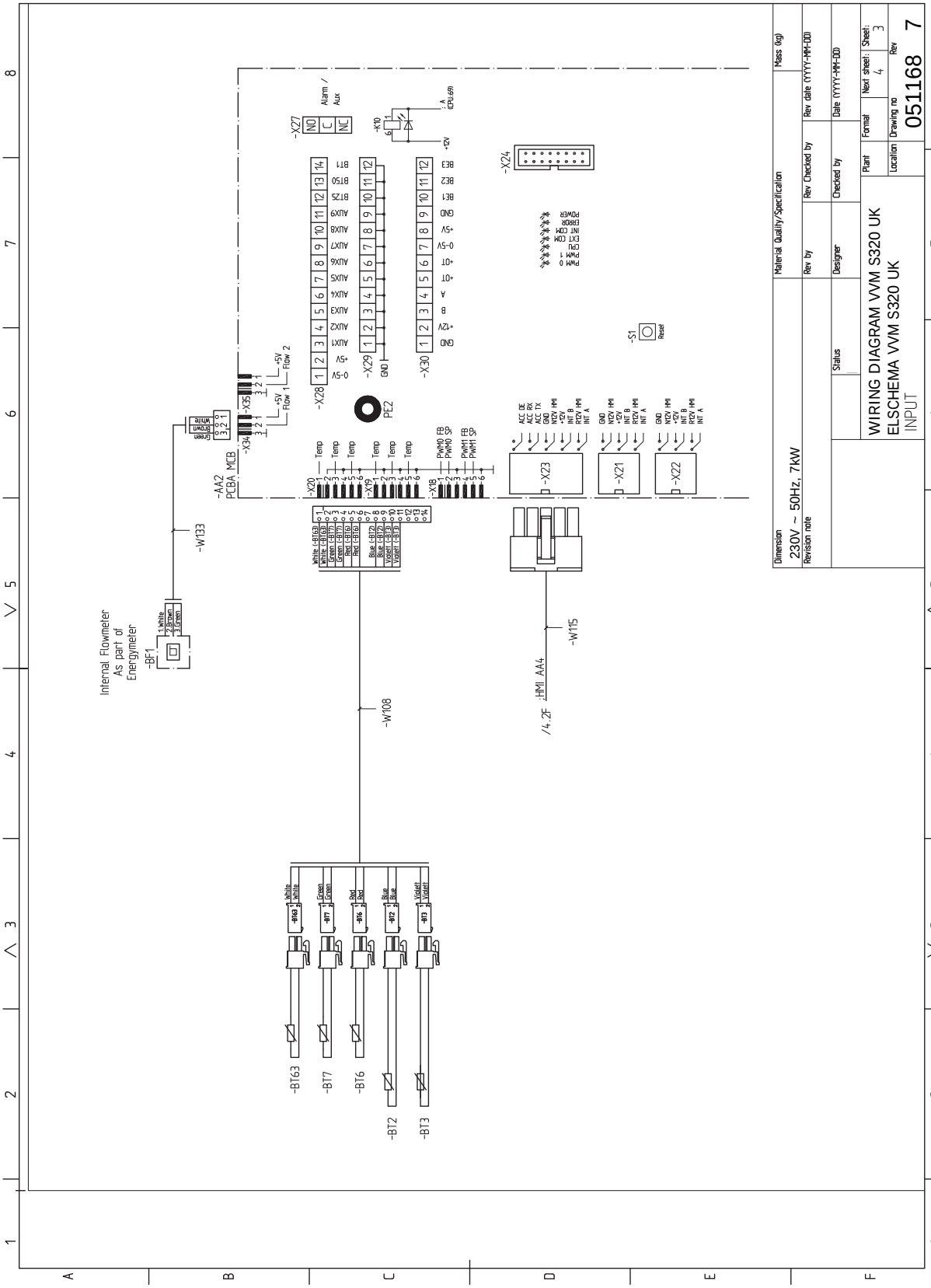
Tested according to standard EN 12 897:2016

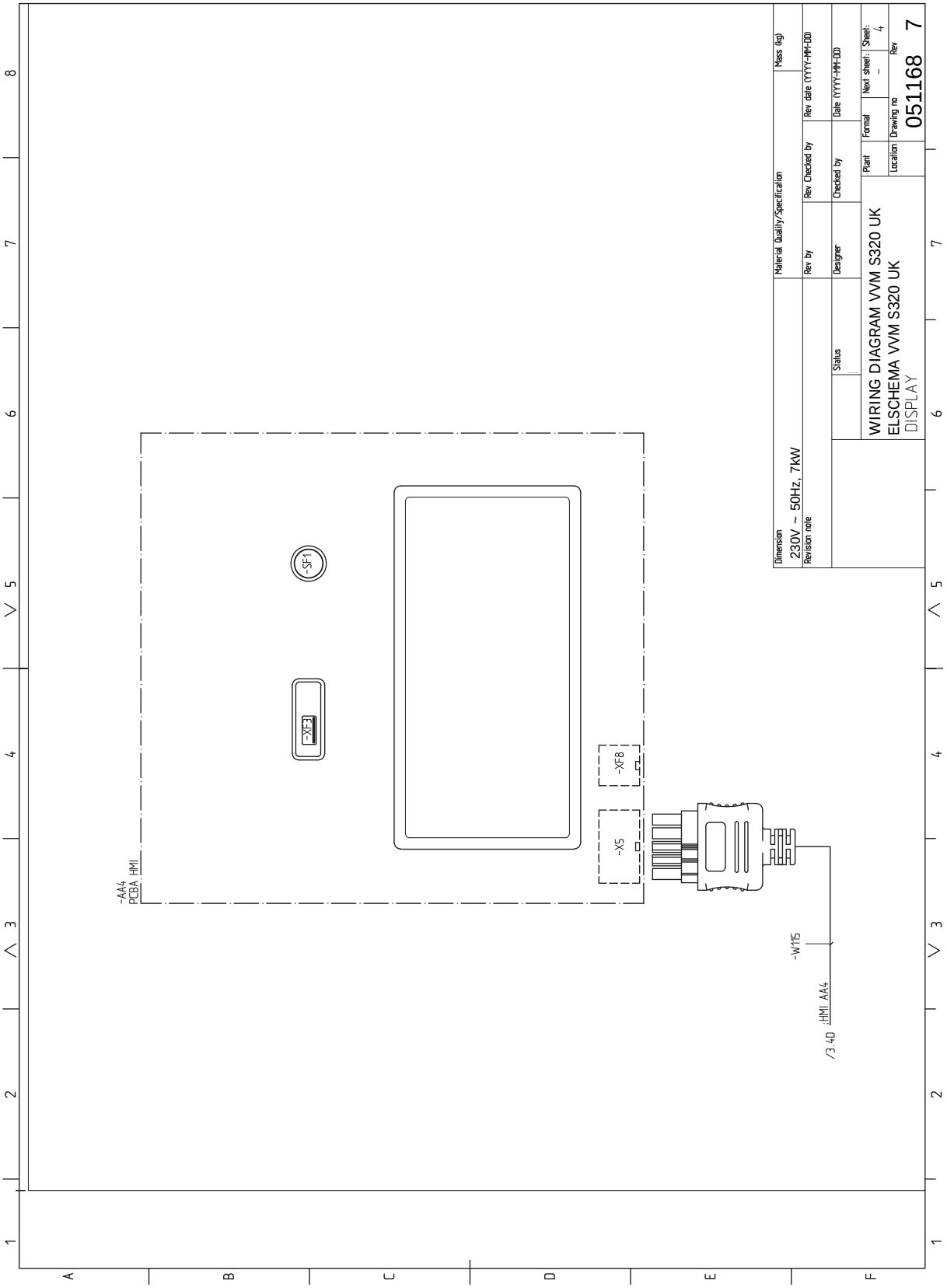
Electrical circuit diagram

1X230V




WIRING DIAGRAM VVM S320 UK
ELSCHEMA VVM S320 UK
BASE
051168 7
230V ~ 50Hz, 7kW
-AA2
PCBA MCB
-GP1
-GP6
-QN10
-W101
-W106
-W110
Connected to -AA2-X40
PE1
-X17
-X15
-X14
-X13
-X12
-X11
-X40
-X41
-X42
-X43
-K9
-K8
-K7
Brown
Black
Blue
Gn/Ye


WIRING DIAGRAM VVM S320 UK
ELSCHEMA VVM S320 UK
INPUT
051168 7
230V ~ 50Hz, 7kW
Internal Flowmeter
As part of
Energymeter
-BF1
-AA2
PCBA MCB
-W133
-W108
-W115
-BT163
-BT17
-BT6
-BT12
-BT13
-X20
-X19
-X18
-X23
-X21
-X22
-X24
-X27
-X28
-X29
-X30
-X34
-X35
-S1
PE2
Alarm / Aux
Reset
Flow 1
Flow 2
/4.2F :HMI AA4


-AA4
PCBA, HMI
-SF1
-XF3
-XF8
-X5
-W115
/3.4D :HMI AA4
Dimension
230V ~ 50Hz, 7kW
Revision note
Material Quality/Specification
Rev by
Designer
Rev Checked by
Checked by
Rev date (YYYY-MM-DD)
Date (YYYY-MM-DD)
Mass (kg)
Status
WIRING DIAGRAM VVM S320 UK
ELSCHEMA VVM S320 UK
DISPLAY
Plant
Format
Next sheet:
Sheet:
4
Location
Drawing no
051168 7
Rev

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MAINS PRESSURE HOT WATER STORAGE SYSTEM COMMISSIONING CHECKLIST

This Commissioning Checklist is to be completed in full by the competent person who commissioned the storage system as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.

Failure to install and commission this equipment to the manufacturer's instructions may invalidate the warranty but does not affect statutory rights.

Customer Name ______ Telephone Number ______

Address ______

Cylinder Make and Model ______

Cylinder Serial Number ______

Commissioned by *(print name)* ______ Registered Operative ID Number ______

Company Name ______ Telephone Number ______

Company Address ______

______ Commissioning Date ______

To be completed by the customer on receipt of a Building Regulations Compliance Certificate*:

Building Regulations Notification Number *(if applicable)* ______

ALL SYSTEMS PRIMARY SETTINGS (indirect heating only)

Is the primary circuit a sealed or open vented system?	Sealed ☐	Open ☐
What is the maximum primary flow temperature?		☐ °C

ALL SYSTEMS

What is the incoming static cold water pressure at the inlet to the system?			☐ *bar*
Has a strainer been cleaned of installation debris (if fitted)?		Yes ☐	No ☐
Is the installation in a hard water area (above 200ppm)?		Yes ☐	No ☐
If yes, has a water scale reducer been fitted?		Yes ☐	No ☐
What type of scale reducer has been fitted?			
What is the hot water thermostat set temperature?			☐ °C
What is the maximum hot water flow rate at set thermostat temperature (measured at high flow outlet)?			☐ *l/min*
Time and temperature controls have been fitted in compliance with Part L of the Building Regulations?			Yes ☐
Type of control system (if applicable)	Y Plan ☐	S Plan ☐	Other ☐
Is the cylinder solar (or other renewable) compatible?		Yes ☐	No ☐
What is the hot water temperature at the nearest outlet?			☐ °C
All appropriate pipes have been insulated up to 1 metre or the point where they become concealed			Yes ☐

UNVENTED SYSTEMS ONLY

Where is the pressure reducing valve situated (if fitted)?		
What is the pressure reducing valve setting?		☐ *bar*
Has a combined temperature and pressure relief valve and expansion valve been fitted and discharge tested?	Yes ☐	No ☐
The tundish and discharge pipework have been connected and terminated to Part G of the Building Regulations		Yes ☐
Are all energy sources fitted with a cut out device?	Yes ☐	No ☐
Has the expansion vessel or internal air space been checked?	Yes ☐	No ☐

THERMAL STORES ONLY

What store temperature is achievable?	☐ °C
What is the maximum hot water temperature?	☐ °C

ALL INSTALLATIONS

The hot water system complies with the appropriate Building Regulations	Yes ☐
The system has been installed and commissioned in accordance with the manufacturer's instructions	Yes ☐
The system controls have been demonstrated to and understood by the customer	Yes ☐
The manufacturer's literature, including Benchmark Checklist and Service Record, has been explained and left with the customer	Yes ☐

Commissioning Engineer's Signature ______

Customer's Signature ______

(To confirm satisfactory demonstration and receipt of manufacturer's literature)

*All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.

benchmark COLLECTIVE MARK
THE MARK OF QUALITY FOR THE INSTALLATION, COMMISSIONING AND SERVICING OF DOMESTIC HEATING AND HOT WATER SYSTEMS

©Heating and Hotwater Industry Council (HHIC)

SERVICE RECORD

It is recommended that your hot water system is serviced regularly and that the appropriate Service Record is completed.

Service Provider
Before completing the appropriate Service Record below, please ensure you have carried out the service as described in the manufacturer's instructions.

SERVICE 1 Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

SERVICE 2 Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

SERVICE 3 Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

SERVICE 4 Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

SERVICE 5 Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

SERVICE 6 Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

SERVICE 7 Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

SERVICE 8 Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

SERVICE 9 Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

SERVICE 10 Date

Engineer Name

Company Name

Telephone Number

Comments

Signature

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info@nibe.co.uk
nibe.co.uk

IHB EN 1951-1 531169

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