Installer manual

Split system
NIBE SPLIT SVM S332 / AMS 20



IHB EN 2547-3
631467

Quick guide

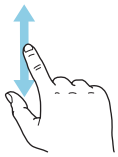
NAVIGATION

Select



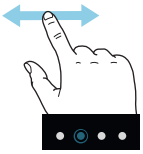
Most options and functions are activated by lightly pressing on the display with your finger.

Scroll



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

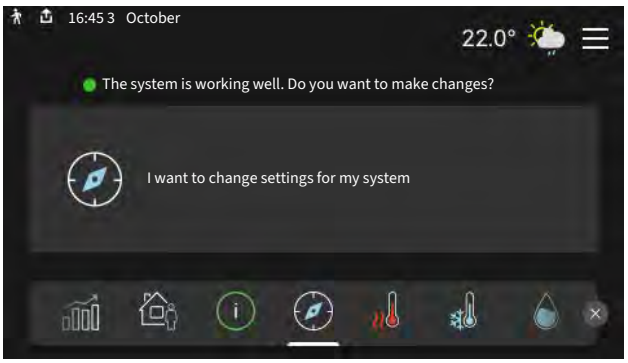
Browse



The symbols at the bottom edge show if there are more pages.

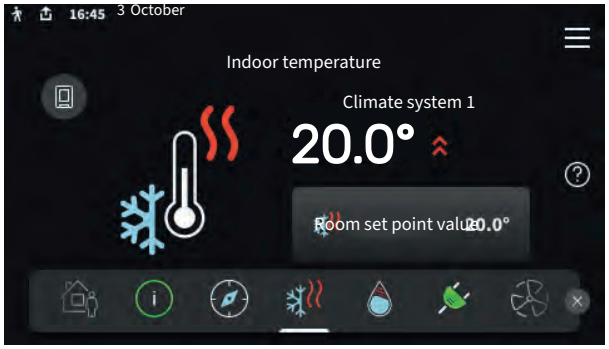
Drag to the right or left with your finger to browse between the pages.

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.



Here, you can set the temperature in the installation's zones.

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 the product name, the product's serial number, the version of the software, and the contact details of the company that provides service. When there is new software to download, you can do it here (provided that SVM S332 is connected to myUplink).

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Important information

Safety information

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

The manual must be left with the customer.

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

> **CAUTION!**
>
> Also read the enclosed Safety Manual before starting the installation.

Symbols

Explanation of symbols that may be present in this manual.

> **CAUTION!**
>
> This symbol indicates danger to person or machine.

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

> **TIP!**
>
> This symbol indicates tips on how to facilitate using the product.

Marking

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

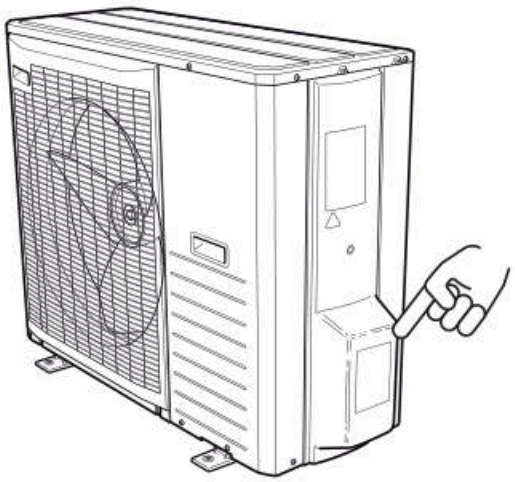
- Fire hazard!
- Flammable.
- Dangerous voltage.
- Danger to person or machine.
- Read the User Manual.
- Read the User Manual.
- Read the Installer Manual.
- Disconnect the voltage supply before starting work.

Serial number

The serial number can be found at the bottom right on SVM S332, in the display on the home screen "Product overview" and on the type plate (PZ1).



You can find the service code and the serial number on the right-hand side of AMS 20.



> **NOTE!**
>
> You need the product's service code and serial number for servicing and support.

Inspection of the installation

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

Connection of, and other work on, the refrigerant circuit may only be carried out by an accredited technician with the correct qualifications.

INSTALLATION INSPECTION INDOOR UNIT

✔	Description	Notes	Signature	Date
Cold and hot water				
	Shut off valves			
	Mixing valve			
	Safety valve			
Cooling circuit (section "Pipe connections")				
	Leak testing			
	Pipe insulation			
Electrical connections				
	Connected communication			
	Circuit fuses			
	Fuses property			
	Outside sensor			
	Room sensor			
	Current sensor			
	Safety breaker			
	Earth circuit-breaker			
	Setting emergency mode			
Cooling				
	Pipe system, condensation insulation			

INSTALLATION INSPECTION OUTDOOR UNIT

✔	Description	Notes	Signature	Date
Cooling circuit (section "Pipe connections")				
	System flushed			
	System evacuated			
	Vacuum attained			
	Single pipe length			
	Additional filling			
	Height difference			
	Pressurization test			
	Leak testing			
	Pipe insulation			
Electricity (section "Electrical connections")				
	Group fuse			
	Safety breaker			
	Earth circuit-breaker			
	Heating cable type/effect			
	Communication cable connected			
Miscellaneous				
	Condensation water pipe KVR			
Cooling				
	Pipe system, condensation insulation			

Compatibility NIBE SPLIT

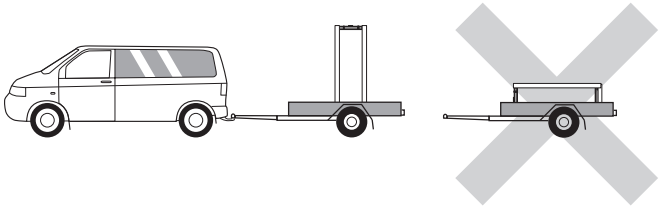
NIBE Indoor unit	NIBE Outdoor unit
SVM S332-6	AMS 20-6
SVM S332-10	AMS 20-10

Delivery and handling

Transport indoor unit

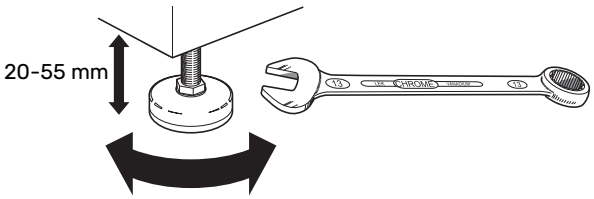
SVM S332 should be transported and stored vertically in a dry place.

However, the SVM S332 can be carefully laid on its back when being moved into the building.



Set-up indoor unit

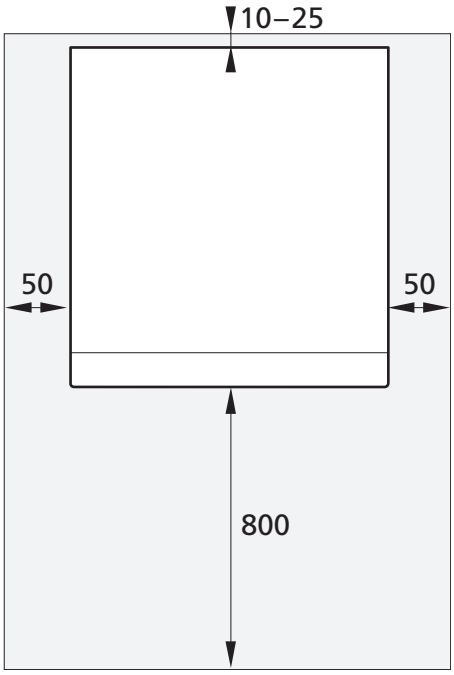
- Position SVM S332 on a solid foundation indoors that withstands water and the weight of the product.
- Use the product's adjustable feet to attain a horizontal and stable set-up.



- The space where SVM S332 is located must be frost-free.
- Since water comes from SVM S332, the area where SVM S332 is located must be equipped with floor drainage.
- Install with its back to an outside wall, ideally in a room where noise does not matter, in order to eliminate noise problems. If this is not possible, avoid placing it against a wall behind a bedroom or other room where noise may be a problem.
- Wherever the unit is located, walls to sound sensitive rooms should be fitted with sound insulation.
- Route pipes so they are not fixed to an internal wall that backs on to a bedroom or living room.

INSTALLATION AREA

Leave a free space of 800 mm in front of the product and 400 mm above the product. All service on SVM S332 can be carried out from the front and above.



> **CAUTION!**
>
> Leave 10 – 25 mm free space between SVM S332 and the wall behind for routing cables and pipes.

REQUIREMENTS FOR INSTALLATION SPACE

For systems with a total refrigerant amount less than 1.84 kg R32, there is no space requirement.

AMS 20-6

AMS 20-6 is filled with 1.3 kg of refrigerant from the factory and therefore has no specific requirements regarding installation space. When the pipe length is max. 30 m, the refrigerant must be filled with max. 0.3 kg. The total refrigerant amount is always below the limit value of 1.84 kg.

AMS 20-10

AMS 20-10 is filled with 1.84 kg of refrigerant from the factory. When the pipe length is longer than 15 m, the refrigerant must be filled to max. 0.02 kg/ m. This because the total amount of refrigerant then exceeds 1.84 kg, the accessory AGS 10 (automatic gas separator) must be installed and consideration must be given to the size of the installation space with regard to the total amount of refrigerant. A total refrigerant amount exceeding 2.54 kg R32 is not permitted in the system.

Minimum floor area SVM S332-10

Pipe length (m)	Filling amount (kg)	m_c (kg) [1]	Floor area m²
≤15	0.00	1.84	
16	0.02	1.86	4.50
17	0.04	1.88	4.55
18	0.06	1.90	4.60
19	0.08	1.92	4.65
20	0.10	1.94	4.70
21	0.12	1.96	4.74
22	0.14	1.98	4.79
23	0.16	2.00	4.84
24	0.18	2.02	4.89
25	0.20	2.04	4.94
26	0.22	2.06	4.99
27	0.24	2.08	5.04
28	0.26	2.10	5.08
29	0.28	2.12	5.13
30	0.30	2.14	5.18
31	0.32	2.16	5.23
32	0.34	2.18	5.28
33	0.36	2.20	5.33
34	0.38	2.22	5.37
35	0.40	2.24	5.42
36	0.42	2.26	5.47
37	0.44	2.28	5.52
38	0.46	2.30	5.57
39	0.48	2.32	5.62
40	0.50	2.34	5.66
41	0.52	2.36	5.71
42	0.54	2.38	5.76
43	0.56	2.40	5.81
44	0.58	2.42	5.86
45	0.60	2.44	5.91
46	0.62	2.46	5.95
47	0.64	2.48	6.00
48	0.66	2.50	6.05
49	0.68	2.52	6.10
50	0.70	2.54	6.15

1 Total refrigerant amount

Transport outdoor unit

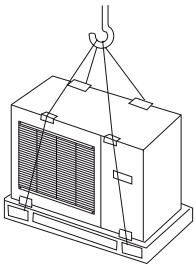
AMS 20 should be transported and stored vertically in a dry place.

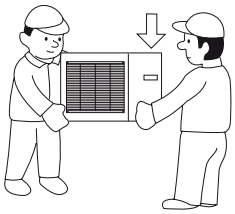
> **CAUTION!**
>
> Ensure that the outdoor unit cannot fall over during transport.

Check that AMS 20 has not been damaged during transport.

LIFT FROM THE STREET TO THE SET UP LOCATION

If the surface allows, the easiest method is to use a pallet truck to move the outdoor unit to the installation area.





If the outdoor unit needs to be transported across soft ground, such as a lawn, we recommend using a crane truck that can lift it to the installation location. When lifting the outdoor unit with a crane, the packaging must be intact.

If a crane truck cannot be used, the outdoor unit can be transported on an extended sack truck. The outdoor unit must be taken hold of from its heaviest side and lifting it needs two people.

LIFT FROM THE PALLET TO FINAL POSITIONING

Before lifting remove the packaging and the securing strap to the pallet.

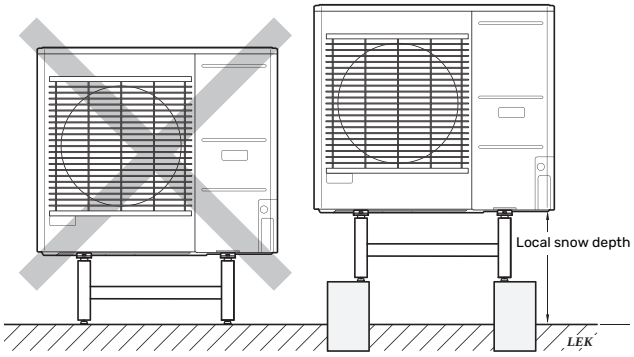
Place lifting straps around each foot. It is recommended that two people perform the lift from the pallet to the base.

SCRAPPING

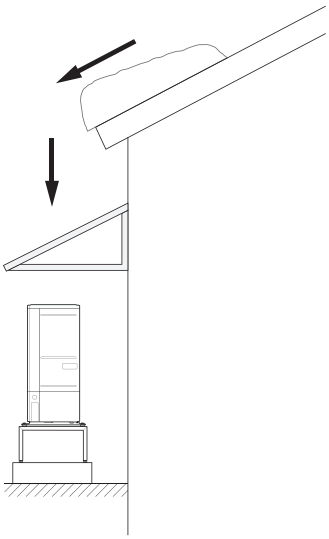
When scrapping, remove the outdoor unit in reverse order. In this case, lift by the base plate rather than the pallet!

Set-up outdoor unit

- Place AMS 20 outdoors on a solid level base that can take the weight, preferably a concrete foundation. If concrete slabs are used they must rest on asphalt or shingle.
- The concrete foundation or slabs must be positioned so that the lower edge of the evaporator is at the level of the average local snow depth, however a minimum of 300 mm.
- Do not place AMS 20 directly on the lawn or other non solid surface.



- AMS 20 should not be positioned next to noise sensitive walls, for example, next to a bedroom.
- Also ensure that the placement does not inconvenience the neighbours.
- AMS 20 must not be placed so that recirculation of the outdoor air can occur. This causes lower output and impaired efficiency.
- The evaporator should be sheltered from direct wind, which negatively affects the defrosting function. Place AMS 20 protected from wind against the evaporator.
- If there is a risk of snow sliding off the roof a protective canopy or similar should be installed over the outdoor unit, pipes and wiring.



- Large amounts of condensation water, as well as melt water from defrosting, can be produced. Condensation water must be led off to a drain or equivalent.
- Take care to prevent scratching the outdoor unit during installation.

INSTALLATION AREA

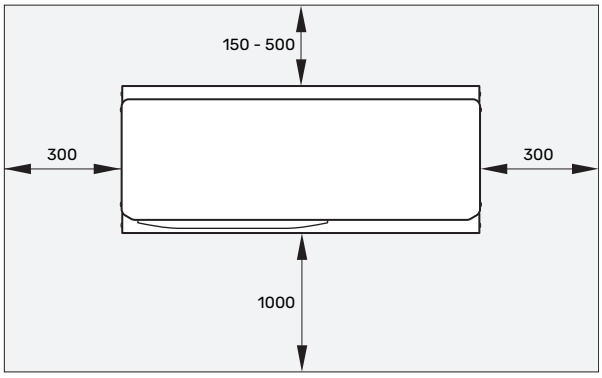
Leave a free space of at least 150 mm between SVM S332 and the house wall, but not more than 500 mm in windy locations.

Leave a free space of 1,000 mm in front of, and 1,000 mm above, the product.

Approx. 300 mm free space is needed on the right-hand side to allow the front panel to be removed.

The lower edge of the evaporator must not be lower than the level of the average local snow depth, or at least 300 mm above ground level. The base should be at least 70 mm tall.

AMS 20



CONDENSATION

Condensation runs out on to the ground below AMS 20. To avoid damage to the house and outdoor unit, the condensation must be collected and drained away.

> **CAUTION!**
>
> It is important for the outdoor unit's function that the condensation water is led away and that the outlet for the condensation water pipe is positioned so as to prevent damage to the building.
>
> Pipe with heating cable (KVR), for draining the condensate drip tray, is not included. To guarantee this function, the accessory KVR should be used.

- The condensation water (up to 50 litres / 24 hrs) must be routed away by a pipe to an appropriate drain, it is recommended that the shortest outdoor length possible is used.
- The section of the pipe that can be affected by frost must be heated by the heating cable to prevent freezing.
- Route the pipe downward from the outdoor unit.
- The outlet of the condensation water pipe must be at frost free depth.
- Use a water trap for installations where air circulation may occur in the condensation water pipe.
- The insulation must seal against the bottom of the condensation water trough.

Condensate drip tray heater, control

The condensate drip tray heater starts when the following conditions are met:

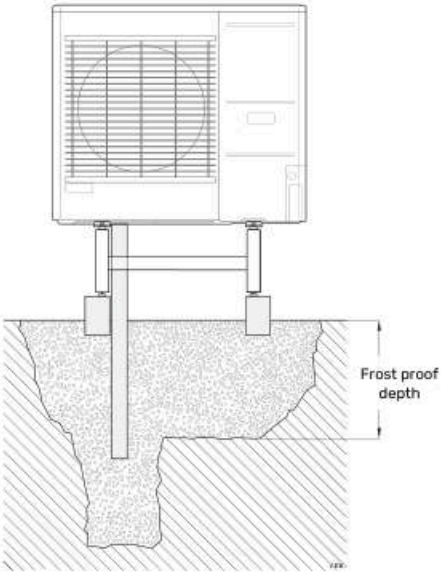
1. The compressor has been in operation for at least 30 minutes after last start.
2. The ambient temperature is lower than 1 °C.

Drainage of condensation

> **NOTE!**
>
> If none of the following recommended alternatives is used, good drainage of condensation must be provided.

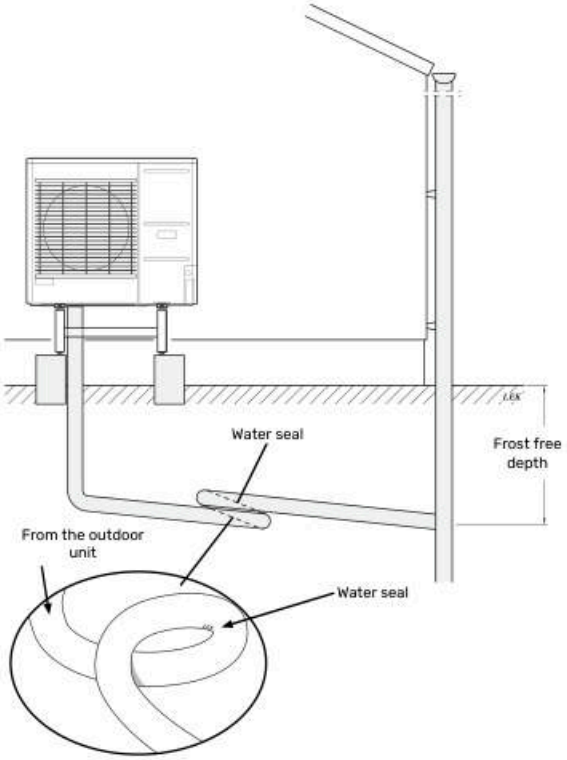
Stone caisson

If the house has a cellar, the stone caisson must be positioned to prevent the condensation water from affecting the house. Otherwise, the stone caisson can be positioned directly under the outdoor unit.



Gutter drainage

Route the pipe sloping down from the outdoor unit. The condensation water pipe must have a water seal to prevent air circulation in the pipe. The installation length can be adjusted by the size of the water seal.



Supplied components



Outdoor temperature sensor (BT1)
1 x



Room sensor(BT50)
1 x



Current sensor[1]
3 x



Filterball valve for the climate system (G1") (QZ2.2)
1 x



Filterball valve for incoming cold water (QZ2.1)
1 x



Combined safety valve (FL2)/pressure gauge, heating medium (BP5)
1 x



Vent hose
2 x



Clips
1 x



O-ring
8 x



Label for external control voltage for the control system
1 x

1 Only SVM S332 3x400 V.

LOCATION

The kit of enclosed items is placed on top of the indoor module.

Handling the panels, indoor unit

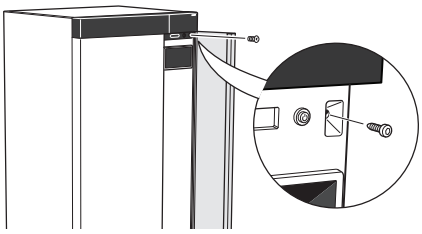
OPEN FRONT HATCH

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

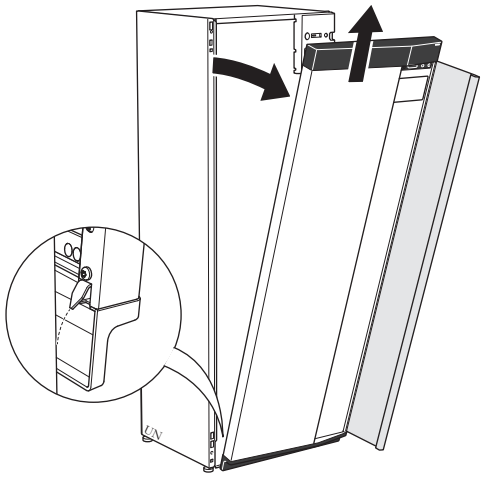


REMOVE THE FRONT

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

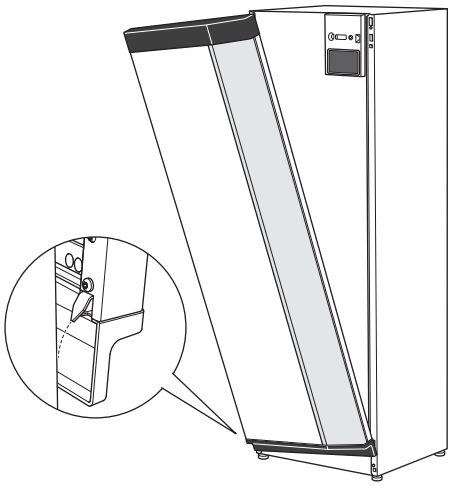


2. Pull the panel's top edge towards you and lift diagonally upwards to remove it from the frame.

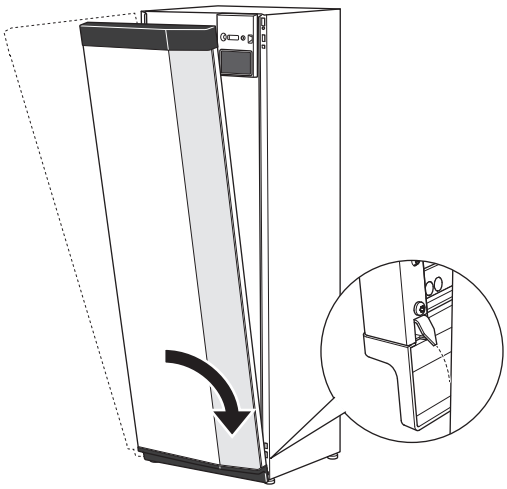


ASSEMBLE THE FRONT

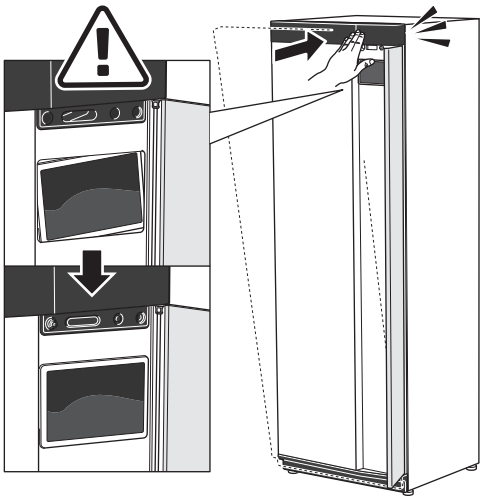
1. Hook one bottom corner of the front onto the frame.



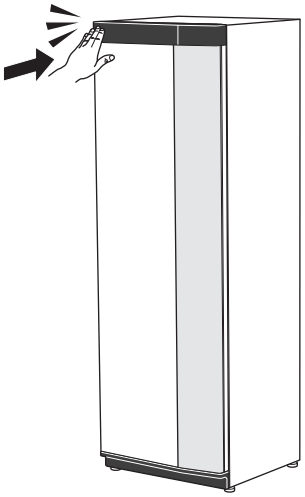
2. Hook the other corner in place.



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



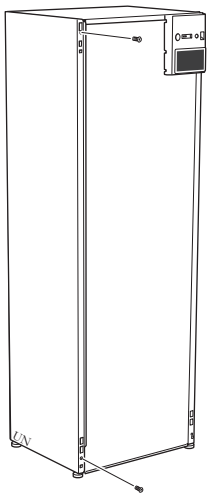
4. Press the top of the front section against the frame and screw it into place.



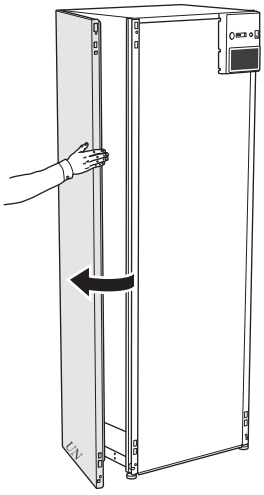
REMOVE SIDE PANEL

The side panels can be removed to facilitate the installation.

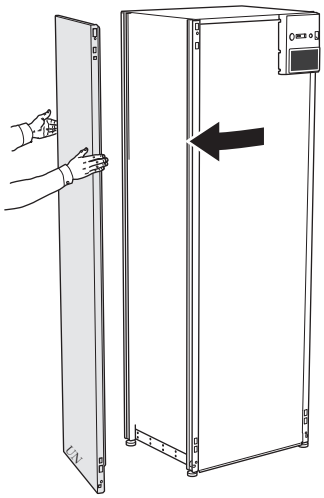
1. Remove the screws from the upper and lower edges.



2. Turn the panel outwards slightly.



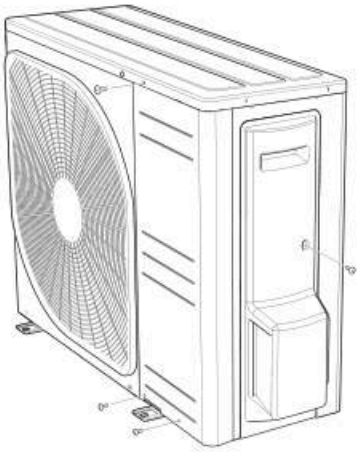
3. Move the panel outwards and backwards.

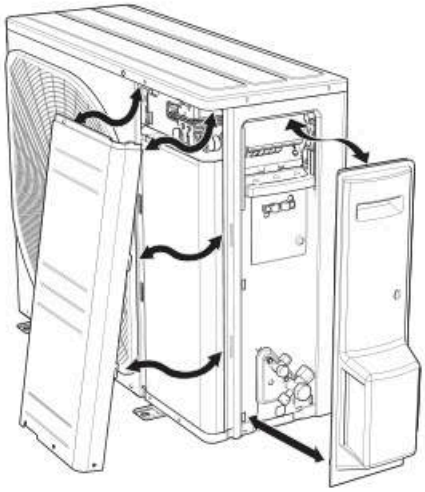


4. Assembly takes place in the reverse order.

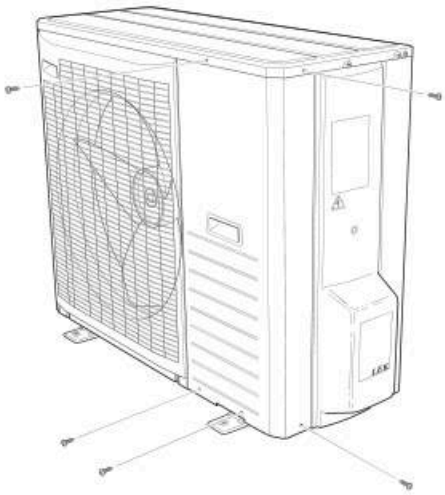
Handling the panels, outdoor unit

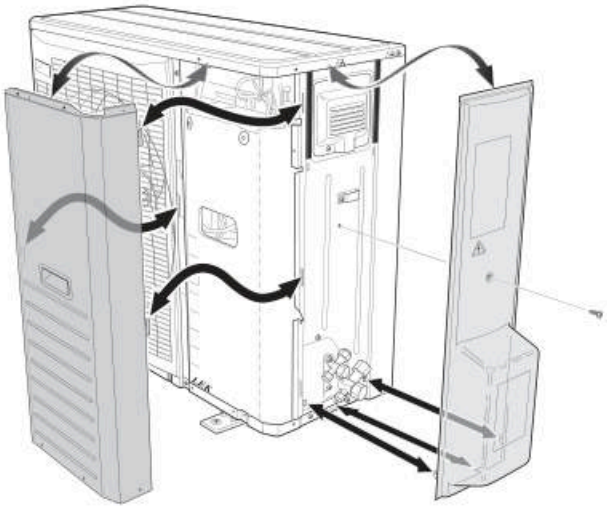
AMS 20-6

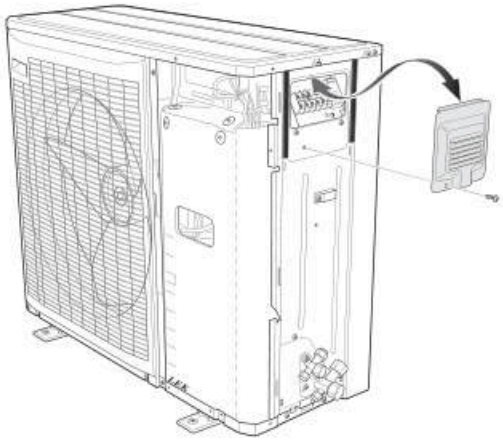




AMS 20-10



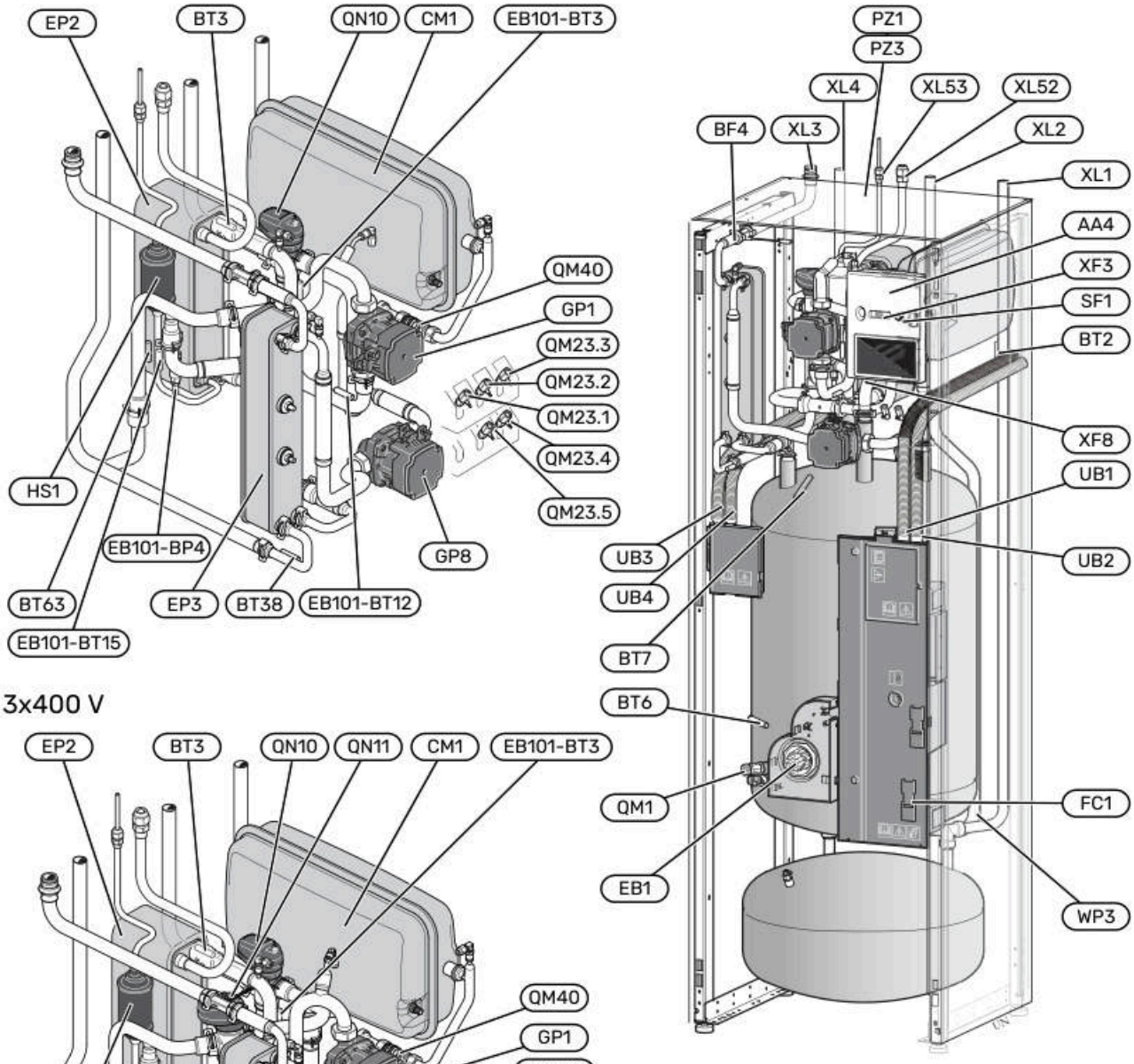




The split system's design

Indoor module's design

1x230 V



3x400 V

Pipe connections

XL1	Heating medium connection, supply
XL2	Heating medium connection, return
XL3	Cold water connection
XL4	Hot water connection
XL52	Gas line connection, supply, from outdoor unit
XL53	Liquid line connection, return, to outdoor unit

HVAC components

CM1	Expansion vessel, climate system
EP3	Hot water heat exchanger
GP1	Circulation pump
GP8	Charge pump hot water
QM1	Drain valve, heating medium
QM23.1	Vent valve, buffer vessel
QM23.2	Vent valve, expansion vessel
QM23.3	Vent valve, hot water heat exchanger
QM23.4	Vent valve, heating medium pump
QM23.5	Vent valve, condenser
QM40	Shut-off valve
QN10	Diverter valve, heating/hot water
QN11	Shunt valve[1]
WP3	Overflow pipe for condensation

1 Only SVM S332 3x400 V.

Sensors etc.

BF1	Flow meter[1]
BF4	Flow meter hot water
EB101-BP4	Pressure sensor, condenser
BT2	Flow line sensor
EB101-BT3	Return line sensor (connected to AA23)
BT6	Controlling hot water sensor
BT7	Display hot water sensor
EB101-BT12	Supply temperature sensor after condenser
EB101-BT15	Fluid line sensor
BT38	Hot water sensor, outgoing hot water
BT63	Supply temperature sensor after additional heat

1 Only SVM S332 3x400 V.

Electrical components

AA4	Display unit
EB1	Immersion heater
FC1	Miniature circuit breaker[1]
SF1	On/off button
XF3	USB socket
XF8	Network connection for myUplink

1 Only SVM S332 1x230 V

Cooling components

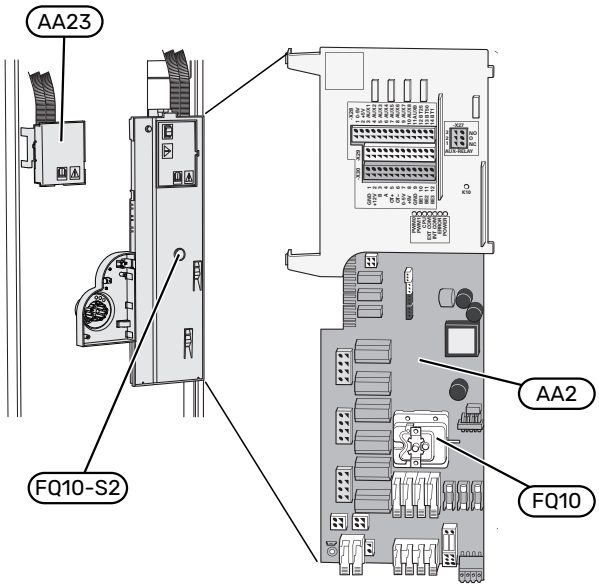
EP2	Condenser
HS1	Drying filter

Miscellaneous

PZ1	Rating plate
PZ3	Serial number
UB1–UB4	Cable gland

Designations according to standard EN 81346-2.

DISTRIBUTION BOXES

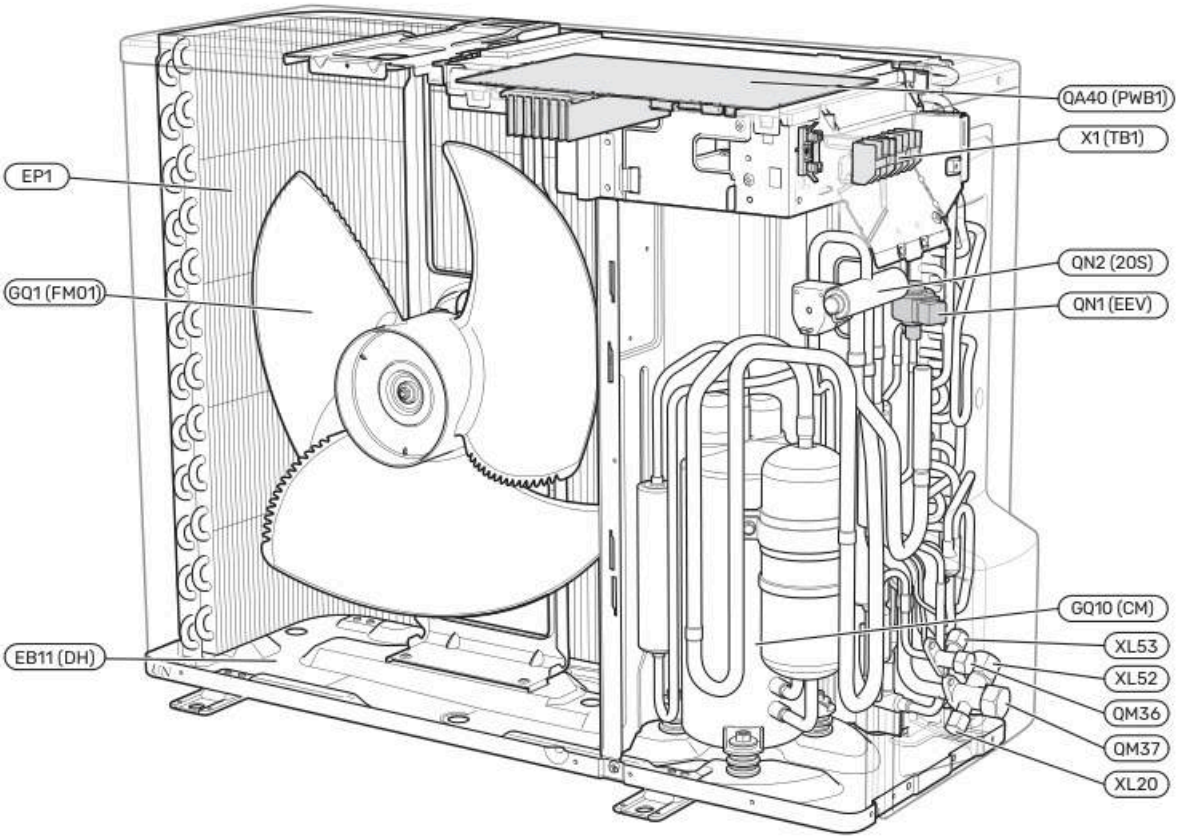


Electrical components

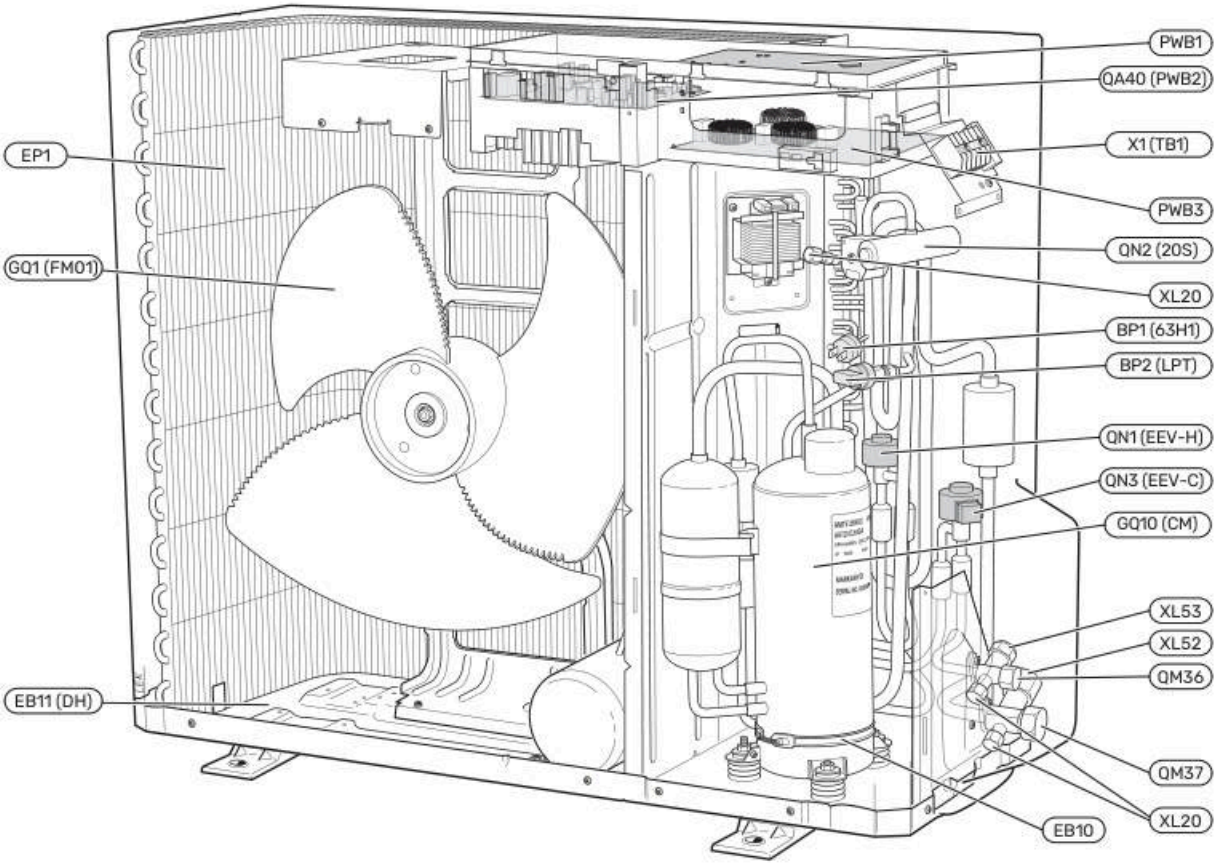
AA2	Base card
FQ10	Temperature limiter
	FQ10-S2 Reset button for temperature limiter
AA23	Communication board

The outdoor unit's design

AMS 20-6



AMS 20-10



Pipe connections

XL20	Service connection, high pressure
XL52	Gas line connection
XL53	Liquid line connection

Sensors etc.

BP1 (63H1)	High pressure switch

Electrical components

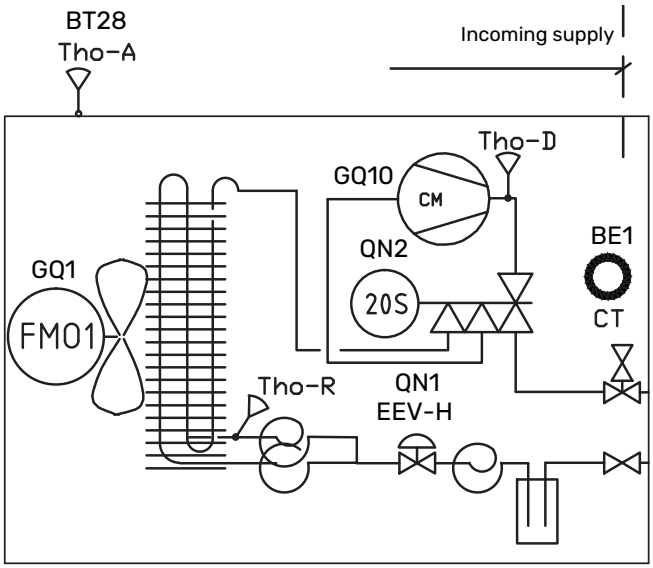
EB10 (CH)	Compressor heater
EB11 (DH)	Condensation water trough heater
GP1	Circulation pump
GQ1 (FM01)	Fan
QA40 (PWB1)	Control board with inverter unit
QA40 (PWB2)	Inverter module
(PWB3)	Filter board
X1 (TB)	Terminal block, incoming supply and communication

Cooling components

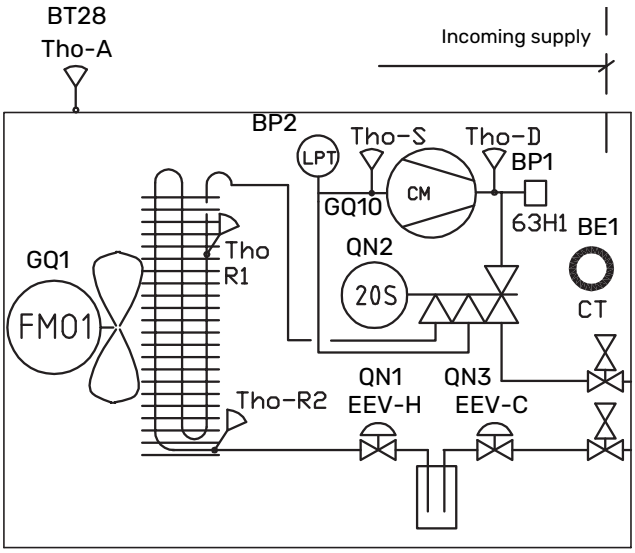
EP1	Evaporator
GQ10 (CM)	Compressor
QM36	Shut-off valve, liquid line
QM37	Shut-off valve, gas line
QN1 (EEV-H)	Expansion valve, heating
QN2 (20S)	Reversing valve
QN3 (EEV-C)	Expansion valve, cooling

Designations within brackets according to the supplier's standard.

SENSOR PLACEMENT AMS 20
Outdoor module AMS 20-6



Outdoor module AMS 20-10



BE1 (CT)	Current sensor
BT28 (Tho-A)	Ambient sensor
BP1 (63H1)	High pressure switch
BP2 (LPT)	Low-pressure sensor
GQ1 (FM01)	Fan
GQ10 (CM)	Compressor
QN1 (EEV-H)	Expansion valve, heating
QN2 (20S)	Reversing valve
QN3 (EEV-C)	Expansion valve, cooling
Tho-D	Hot gas sensor
Tho-R	Evaporator sensor, out
Tho-R2	Evaporator sensor, in
Tho-S	Suction gas sensor

Designations within brackets according to the supplier's standard.

Pipe connections

General

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

The system requires the dimensions of the radiator circuit to be designed for a low temperature heating medium. At the lowest dimensioned outdoor temperature (DOT), the highest recommended temperatures are 55 °C on the supply line and 45 °C on the return line, but SVM S332 can handle up to 70 °C.

NOTE!

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

CAUTION!

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

CAUTION!

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

CAUTION!

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

MINIMUM SYSTEM FLOW DEFROSTING

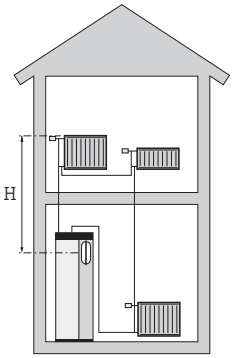
CAUTION!

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

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

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

SYSTEM VOLUME



SVM S332 is equipped with an expansion vessel (CM1).

The volume of the expansion vessel is 13 litres and it is pre-pressurised as standard to 0.5 bar. As a result, the maximum permitted height "H" between the expansion vessel and the highest installed radiator is 5 m, see figure.

If the pre-pressure is not high enough, it can be increased by filling with air via the valve in the expansion vessel. Any change in the pre-pressure affects the ability of the expansion vessel to handle the expansion of the water.

The maximum system volume, excluding SVM S332, is 60 litres at the above-mentioned pre-pressure.

SYMBOL KEY

Symbol	Meaning
	Unit box
	Shut-off valve
	Tapping valve
	Non-return valve
	Mixing valve
	Circulation pump
	Immersion heater
	Expansion vessel
	Filterball
	Safety valve
	Temperature sensor
	Trim valve
	Diverter valve/shunt
	Heat exchanger
	Overflow valve
	Indoor module
	Air/water heat pump
	Domestic hot water
	Hot water circulation
	Heating system
	Heating system with lower temperature

SYSTEM DIAGRAM

SVM S332 consists of hot water heat exchanger storage tank, hot water expansion vessel, immersion heater, circulation pumps, buffer vessel and control system. SVM S332 connects to the climate system. Hot water is produced via the hot water heat exchanger.

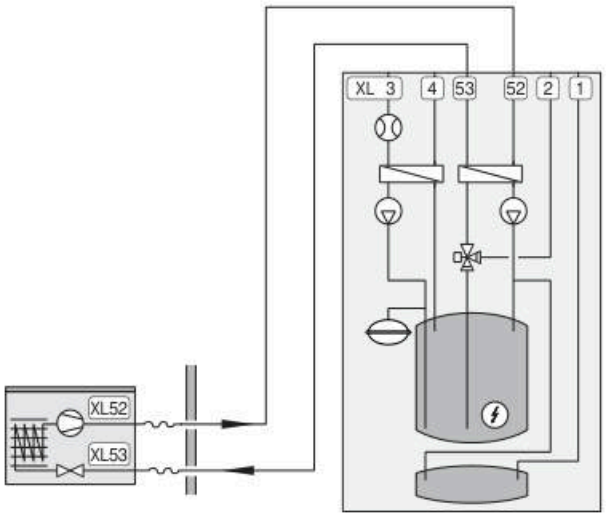
SVM S332 is designed for connection and communication with AMS 20, which together make up a complete heating installation.

When it is cold outdoors, the outdoor unit works with the indoor module, and if the outdoor air temperature falls below the outdoor unit's working range, all heating is performed by the immersion heater[1].

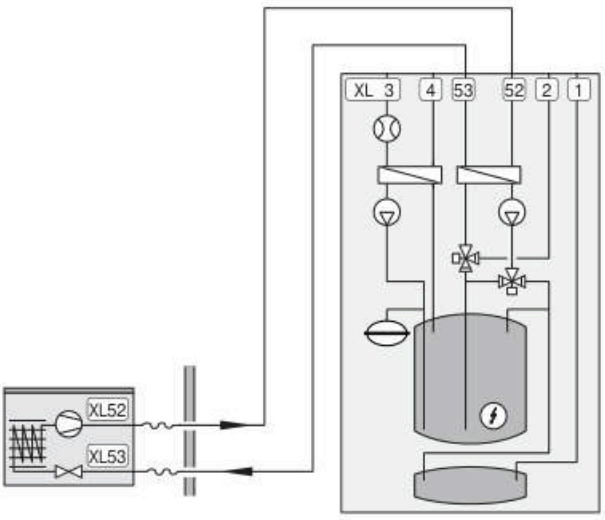
[1] Only SVM S332 3x400 V.

The indoor unit can produce hot water with the integrated immersion heater at the same time as the outdoor unit produces cooling with the compressor.

1x230 V



3x400 V



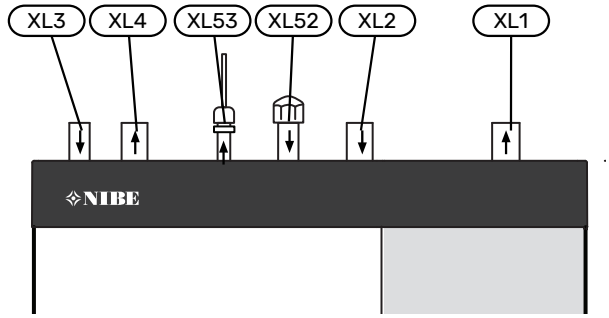
XL1	Connection, heating medium flow line
XL2	Connection, heating medium return line
XL3	Connection, cold water
XL4	Connection, hot water
XL52	Gas line connection
XL53	Liquid line connection

NOTE!

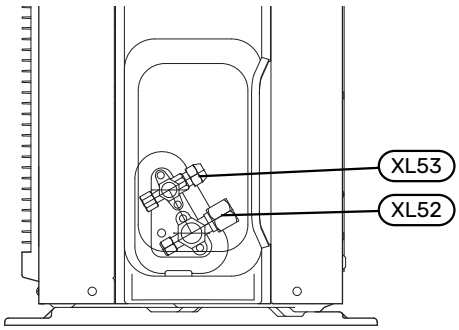
This is a principle of operation. For more detailed information about SVM S332, see section "The split system's design".

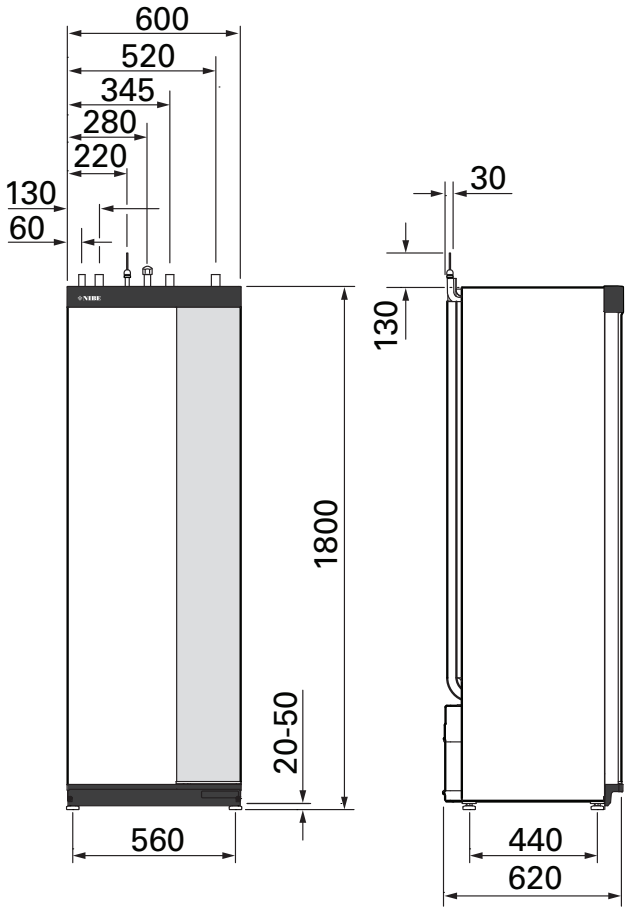
Dimensions and pipe connections

INDOOR MODULE



OUTDOOR MODULE





PIPE DIMENSIONS AND MATERIALS

Connection			SVM S332	
			6	10
XL1/XL2	Heating medium supply/return ϴ	mm	22 (7/8")	
XL3/XL4	Cold/hot water ϴ	mm	22 (7/8")	
XL52	Gas line connection, supply, from outdoor unit ϴ[1]	mm	12.7 (1/2")	15.88 (5/8")
XL53	Liquid line connection, return, to outdoor unit ϴ[2]	mm	6.35 (1/4")	

1 Copper grade SS-EN 12735-1 or C1220T, JIS H3300. Minimum material thickness 1.0 mm.

2 Copper grade SS-EN 12735-1 or C1220T, JIS H3300. Minimum material thickness

0.8 mm.

Connection of outdoor unit

Install refrigerant pipes between the outdoor unit and indoor unit.

LIMITATIONS, OUTDOOR UNIT

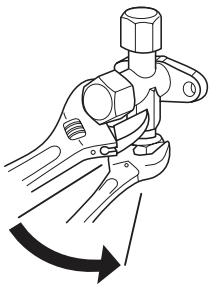
		SVM S332	
		6	10
Max. length, refrigerant pipe, one-way[1]	m	30	50
Max height difference, when SVM S332 is placed higher than outdoor unit	m	20	15
Max height difference, when SVM S332 is placed lower than outdoor unit	m	20	30

1 If the length of the refrigerant pipes exceeds 15 metres, extra refrigerant must be added at 0.02 kg/m.

PIPE CONNECTION, REFRIGERANT PIPE

- Carry out the pipe installation, on the refrigerant side between the outdoor unit (AMS 20) and the indoor module (SVM S332), with the shut-off valves (QM36, QM37) closed.
- Connect refrigerant pipes between the shut-off valves (QM36 and QM37) on the outdoor unit (AMS 20) and the connections (XL52 and XL53) on the indoor module (SVM S332).
- Ensure that water or dirt does not enter the pipes.
- Bend the pipes with as large a radius as possible (at least 4 times the pipe diameter). Do not bend a pipe repeatedly. Use a bending tool.
- Connect the flare connector and tighten to the following torque. Use the "Tightening angle" if a torque wrench is not available.

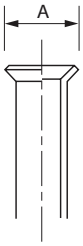
Outer diameter, copper pipe (mm)	Tightening torque (Nm)	Tightening angle (°)	Recommended tool length (mm)
Ø6.35 (1/4")	14~18	45~60	150
Ø9.52 (3/8")	34~42	30~45	200
Ø12.7 (1/2")	49~61	30~45	250
Ø15.88 (5/8")	68~82	15~20	300



> **CAUTION!**
>
> Gas shielding must be used when soldering.

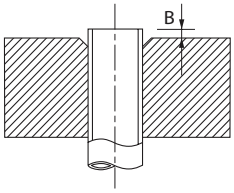
Flare connections

Expansion:



Outer diameter, copper pipe (mm)	A (mm)
Ø6.35 (1/4")	9.1
Ø9.52 (3/8")	13.2
Ø12.7 (1/2")	16.6
Ø15.88 (5/8")	19.7

Ejection:



Outer diameter, copper pipe (mm)	B, with a R32/410A tool (mm)	B, with a conventional tool (mm)
Ø6.35 (1/4")	0.0~0.5	1.0~1.5
Ø9.52 (3/8")	0.0~0.5	0.7~1.3
Ø12.7 (1/2")	0.0~0.5	1.0~1.5
Ø15.88 (5/8")	0.0~0.5	0.7~1.3

(Follow instructions for the tool used.)

Use without outdoor unit

The indoor module can be used without an outdoor unit, i.e. solely as an electric boiler, to produce heat[2] and hot water, for example before the outdoor unit is installed.

In order to use the indoor module alone, you need to adjust the software settings according to section "Commissioning without outdoor unit".

Climate system

A climate system is a system that regulates the indoor temperature with the help of the control system in SVM S332 and, for example, radiators, underfloor heating, underfloor cooling, fan coils, etc.

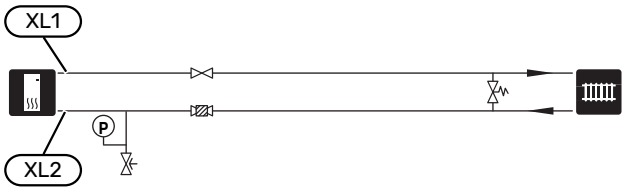
CONNECTING THE CLIMATE SYSTEM

Install as follows:

- enclosed combined safety valve (FL2) / pressure gauge (BP5)
- enclosed filterball (QZ2.2)

  Install the filterball as close to SVM S332 as possible. The filterball must be accessible for cleaning the filter and magnet.
- shut-off valve

  Install the shut-off valve as close to SVM S332 as possible.
- When connecting to a system with thermostats, either a bypass valve must be fitted or, alternatively, some of the thermostats must be removed to ensure there is sufficient flow and heat emission.



2 Only SVM S332 3x400 V with shunt valve QN11.

COOLING

Cooling is produced by the outdoor unit and then passes through the indoor module and is distributed in the property using, for example, fan coils or under floor cooling.

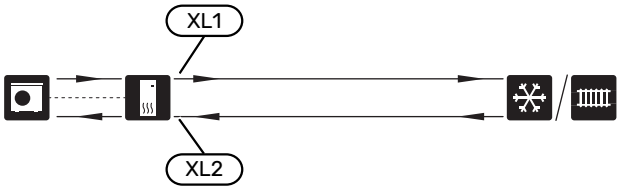
Condensation insulation

Effective insulation of cold pipes (down to 7 °C) requires the installation of insulation and vapour barriers, in order to avoid energy losses and the risk of damage to surrounding parts of the building or other problems due to condensation.

Take the necessary steps (e.g. adapt the supply temperature according to the property's conditions) to ensure that any condensation does not give rise to moisture damage in the property.

Heating and cooling in the same system

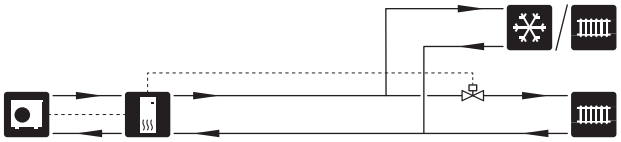
In installations where heat and cooling can be required at different times, heat and cooling can be distributed via the same climate system.



Separate systems for heating and cooling with shut-off valve

In installations where some climate systems are not protected against condensation, the flow to these climate systems can be shut off with a shut-off valve (QM31) during cooling operation.

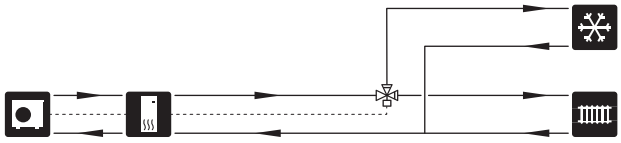
1. Connect in the shut-off valve to the AUX output in SVM S332.
2. In menu 7.4 - "Selectable in/outputs" select "Cooling mode indication".



Separate systems for heating and cooling with diverter valve

In installations where you want to heat and cool in separate climate systems, e.g. heating via under floor heating and cooling via fan coils, a diverter valve (QN12) is installed.

1. Connect the diverter valve on the AUX output in SVM S332.
2. In menu 7.4 - "Selectable in/outputs" select "Cooling mode indication".



Cold and hot water

The settings for hot water are made in menu 7.1.1 - "Hot water".

CONNECTING COLD AND HOT WATER

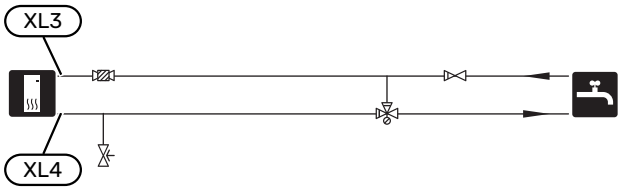
Install as follows:

- non-return valve
- enclosed filterball (QZ2.1)

  Install the filterball as close to SVM S332 as possible.
- pressure relief valve

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

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



Installation alternative

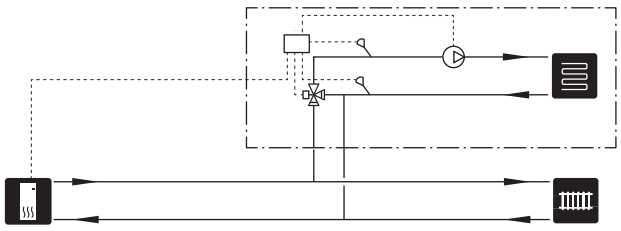
SVM S332 can be installed in several different ways, some of which are shown here.

Further option information is available at nibe.eu and in the respective assembly instructions for the accessories used. See page 78 for a list of the accessories that can be used with SVM S332.

EXTRA CLIMATE SYSTEM

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

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



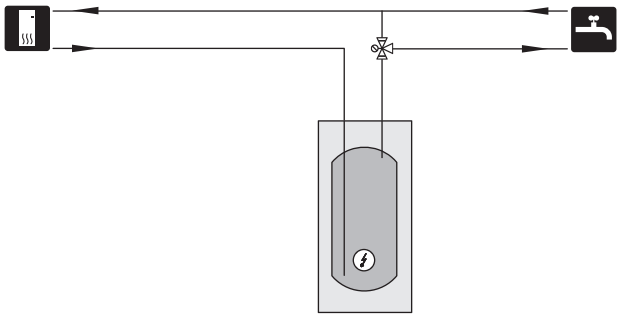
EXTRA HOT WATER HEATERS

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

Water heater with immersion heater

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

The water heater's flow is connected after SVM S332.



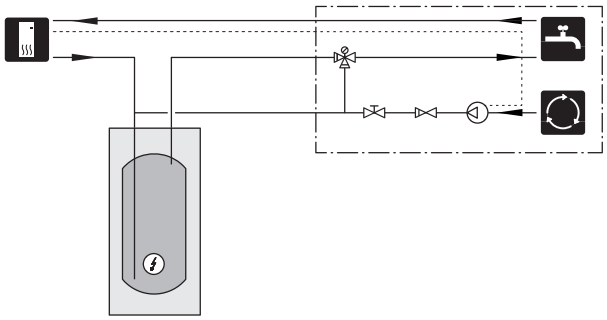
HOT WATER CIRCULATION

A circulation pump can be controlled by SVM S332 to circulate the hot water. The circulating water must have a temperature that prevents bacterial growth and scalding, and national standards must be satisfied.

The HWC return is connected to a freestanding water heater.

The circulation pump is activated via the AUX output in menu 7.4 -"Selectable in/outputs".

HWC can be supplemented with a hot water sensor for HWC (BT70) and (BT82), which is connected via the AUX input and activated in menu 7.4 -"Selectable in/outputs".

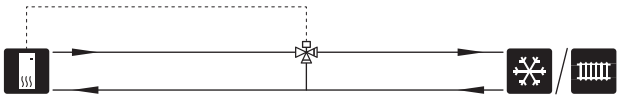


DELAYED SUPPLY LINE FOR COOLING

When the installation switches to cooling production e.g. from hot water production, a certain amount of heat escapes into the cooling system. To avoid this, a diverter valve is installed (QN44) in the system.

Via the diverter valve, the supply line circulates back to the indoor unit until the temperature in the charge circuit starts to approach the desired supply temperature, at which point the valve switches to the climate system. The temperature is measured with an internal sensor in the outdoor unit, no additional sensor is needed.

The diverter valve is activated via the AUX output in menu 7.4 -"Selectable in/outputs", "Cool. mode ind. w delay".

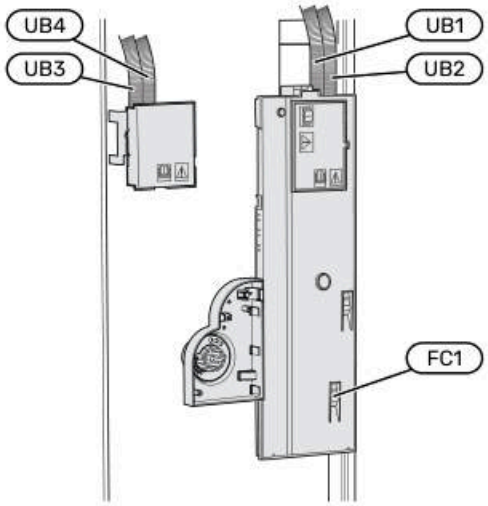


Electrical connections

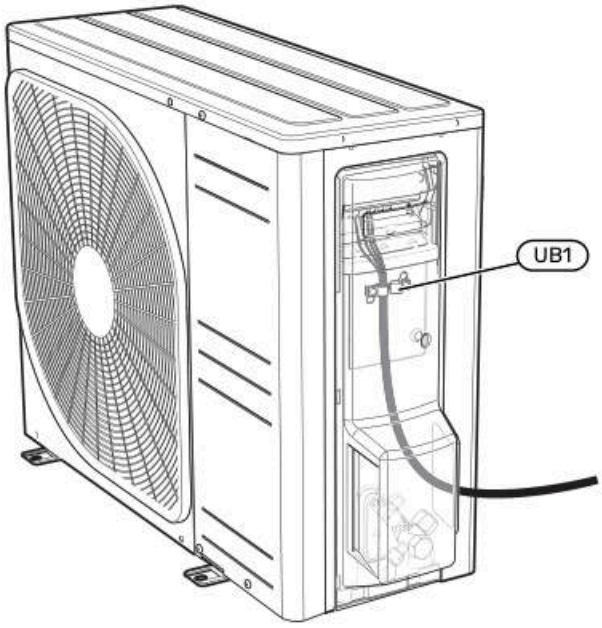
General

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

- Electrical installation and wiring must be carried out in accordance with national provisions.
- Prior to insulation testing the house wiring, disconnect the air/water heat pump installation.
- If the property has residual current devices (RCDs) NIBE SPLIT should be equipped with two separate RCDs, one for the outdoor unit and one for the indoor unit.
- NIBE SPLIT must be installed via isolator switches, one for the outdoor unit and one for the indoor unit. The cable area must be dimensioned based on the fuse rating used.
- If a miniature circuit breaker is used, this must have at least triggering characteristic "C". See section "Technical specifications" for fuse size.
- Use a screened cable for communication with the outdoor unit.
- To prevent interference, communication cables to external connections must not be laid in the vicinity of high voltage cables.
- The minimum area of communication and sensor cables to external connections must be 0.5 mm² up to 50 m, for example EKKX, LiYY or equivalent.
- For an electrical wiring diagram for NIBE SPLIT, see the "Technical specifications" section.
- When routing a cable into SVM S332, the cable grommets (UB1–UB4) must be used.



When routing a cable into AMS 20, the cable holder (UB1) must be used.



CAUTION!

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

CAUTION!

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

CAUTION!

To prevent damage to the installation's electronics, check the connections, main voltage and phase voltage before NIBE SPLIT is started.

CAUTION!

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

MINIATURE CIRCUIT-BREAKER

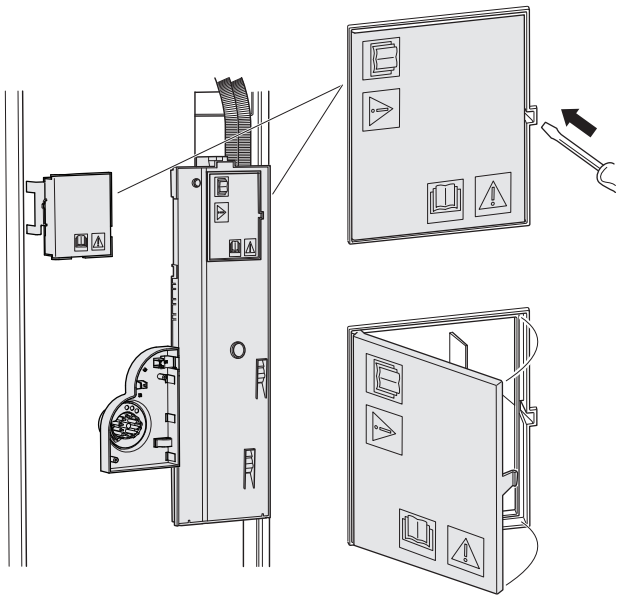
The operating circuit in SVM S332 and some of its internal components are fused internally by a miniature circuit-breaker (FC1).

Only SVM S332 1x230 V.

ACCESSIBILITY, ELECTRICAL CONNECTION

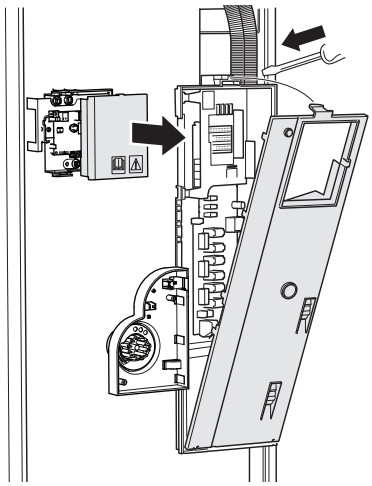
Removing the cover

The hatch is opened using a screwdriver.



Removing the covers

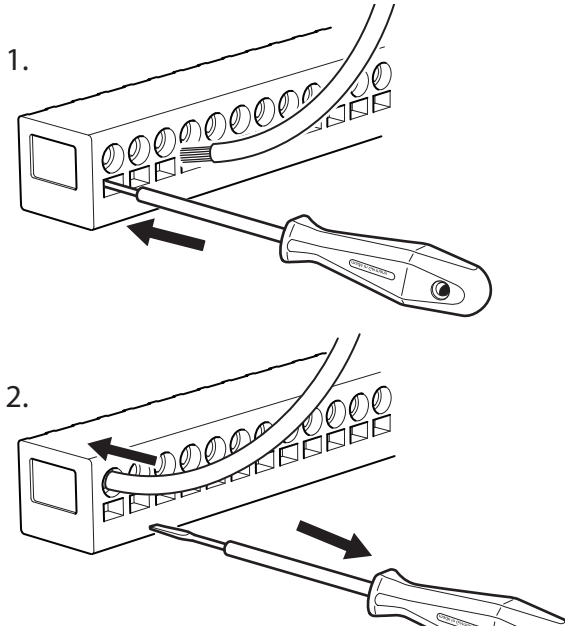
The cover is opened using a screwdriver.



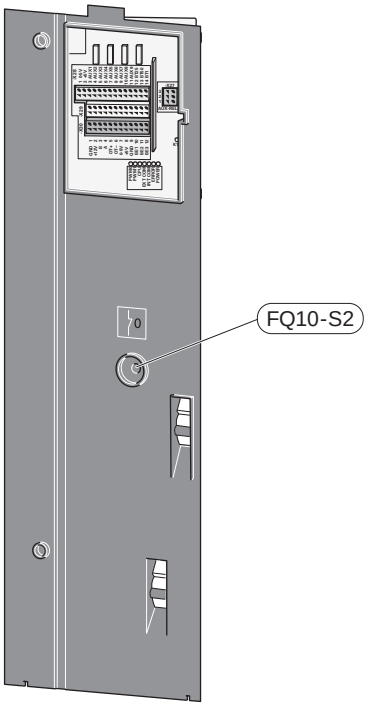
CABLE LOCK

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

Terminal block



TEMPERATURE LIMITER



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

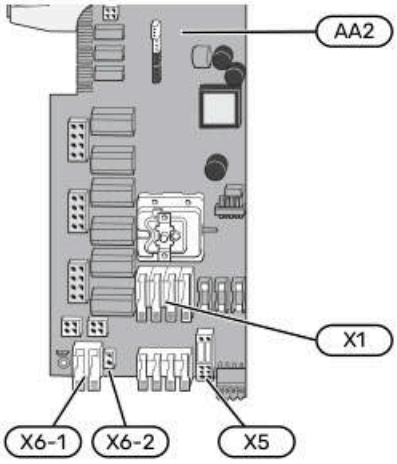
Resetting

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

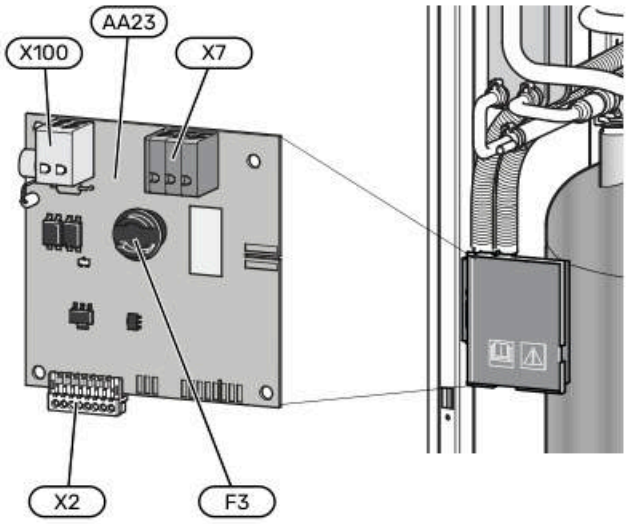
Connections

TERMINAL BLOCKS SVM S332

The following terminal blocks are used on the base board (AA2).

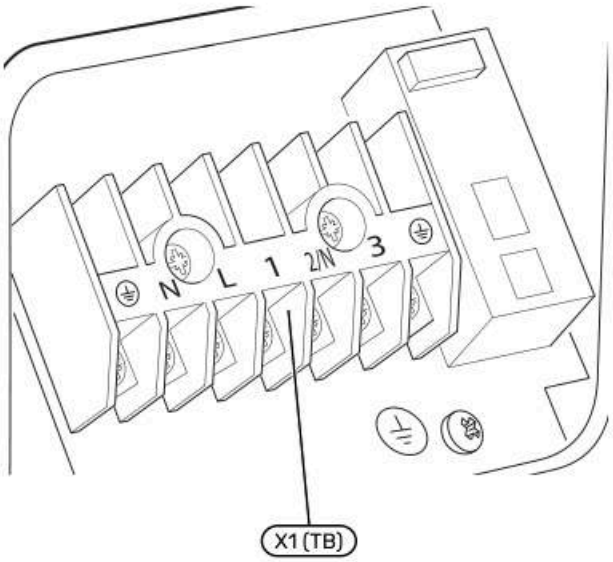


The following terminal blocks are used on the communication board (AA23).



TERMINAL BLOCK AMS 20

The following terminal block is used as a terminal block for power supply and communication X1 (TB).

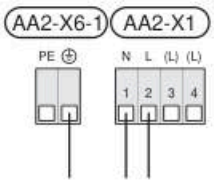


POWER CONNECTION SVM S332

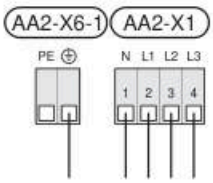
Supply voltage

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

Connection 1x230 V



Connection 3x400 V

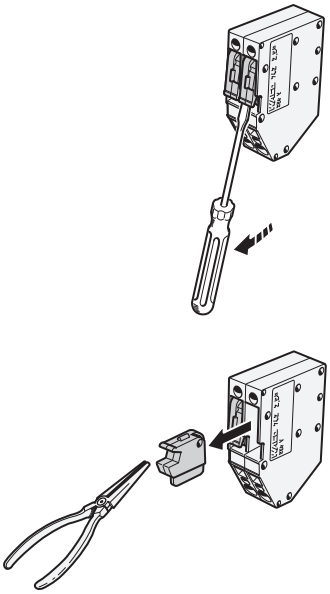


External control voltage for the control system

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

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

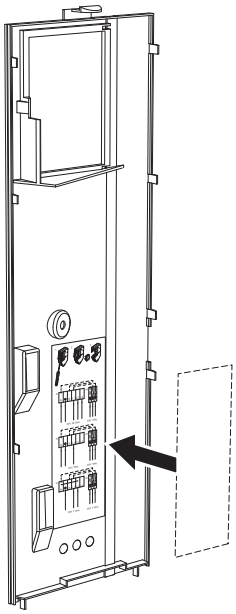
1. Remove the bridges from terminal block AA2-X5.



2. Connect control voltage (230 V ~ 50Hz) to AA2-X5:N, AA2-X5:L and AA2-X6-2 (PE).

Enclosed label

The enclosed label is placed on the electrical connection's cover.



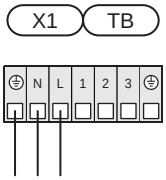
Tariff control

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

POWER CONNECTION AMS 20

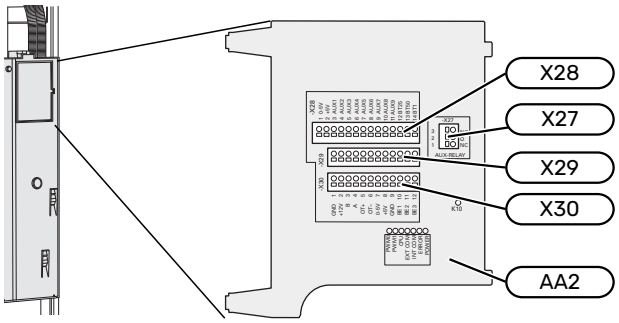
Connect the cable for the external supply to terminal block X1 (TB).

Connection 1 x 230 V



EXTERNAL CONNECTIONS

Connect external connections on terminal blocks X28, X29 and X30 on the base board (AA2).



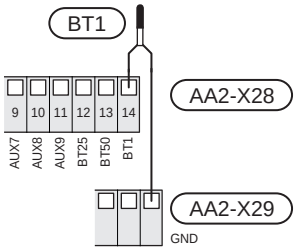
Sensors

Outside sensor

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

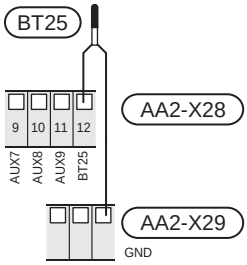
Connect the outdoor temperature sensor to terminal block AA2-X28:14 and AA2-X29:GND.

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



External supply temperature sensor

If an external supply temperature sensor (BT25) needs to be used, connect it to terminal block AA2-X28:12 and to terminal block AA2-X29:GND.



Room sensor

SVM S332 is supplied with an enclosed room sensor (BT50) that makes it possible to display and control the room temperature in the display on SVM S332.

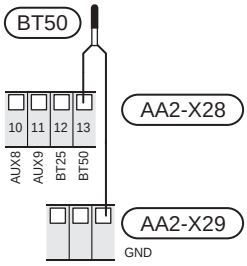
SVM S332 operates without the room sensor, but if you want to read the property's indoor temperature from the display on SVM S332, the room temperature sensor must be fitted.

The room temperature sensor is installed in a neutral location where the 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 temperature sensor is not prevented from measuring the correct room temperature, for example by being located in a recess, between shelves, behind a curtain, above or close to a heat source, in a draught from an external door or in direct sunlight. Closed radiator thermostats can also cause problems.

Connect the room temperature sensor to terminal blocks X28:13 and AA2-X29:GND.

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.

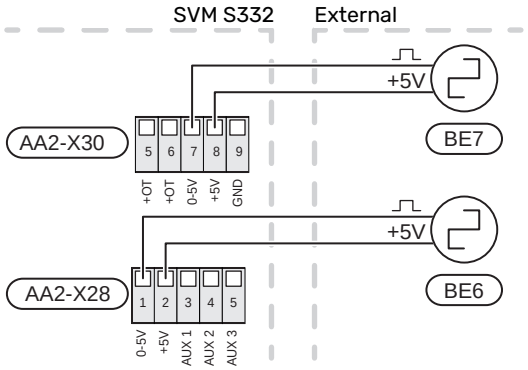


> **NOTE!**
>
> Changes of temperature in the property take a long time. For example, short periods of time combined with under floor heating will not give a noticeable difference in room temperature.

Pulse energy meter

Up to two electricity meters or energy meters for heating (BE6, BE7) can be connected to SVM S332 via terminal blocks AA2-X28:1-2 and AA2-X30:7-8.

> **NOTE!**
>
> The EMK accessory is connected to the same terminal blocks as electricity meters/energy meters.



Activate the meter(s) in menu 7.2 - "Accessory settings" and then set the desired value ("Energy per pulse" or "Pulses per kWh") in menu 7.2.19 -"Pulse energy meter".

Load monitor

Integrated load monitor

SVM S332 is equipped with a simple form of integrated load monitor, which limits the power steps for the electric additional heat by calculating whether future power steps can be connected to the relevant phase without exceeding the current for the specified main fuse.

If the current would exceed the specified main fuse, the power step is not permitted. The size of the property's main fuse is specified in menu 7.1.9 - "Load monitor".

Load monitor with current sensor

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

SVM S332 is equipped with a load monitor that, with the help of a current sensor, controls the power steps for the electric additional heat by redistributing the power between the different phases or, alternatively, disengages the electric additional heat step-by-step if there is an overload in a phase.

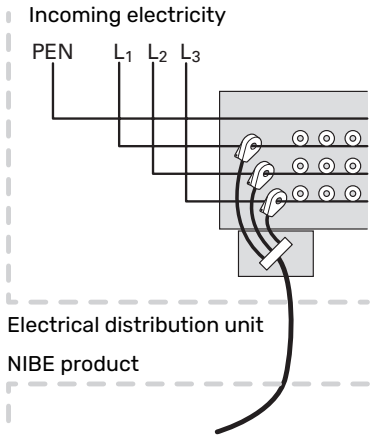
If the overload remains despite the electric additional heat being disengaged, the compressor is limited.

Reconnection occurs when the other current consumption is reduced.

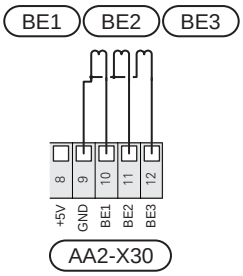
The building's phases can have different loads. If the compressor has been connected to a heavily loaded phase, there is a risk that the compressor output will be restricted and the electric additional heat will operate longer than expected. This means that the savings will not be as expected.

Connection and activation of current sensors

1. Install a current sensor on each incoming phase conductor into the electrical distribution unit. This is best done in the electrical distribution unit.
2. Connect the current sensors to a multi-core cable in an enclosure directly adjacent to the electrical distribution unit. The multi-core cable between the enclosure and SVM S332 must have a cable area of at least 0.5 mm².



3. Connect the cable to terminal block AA2-X30:9-12, where X30:9 is the common terminal block for the three current sensors.



4. Specify the size of the property's main fuse in menu 7.1.9 - "Load monitor".
5. Activate phase detection in menu 7.1.9 - "Load monitor". Read more about phase detection in section "Menu 7.1.9 - Load monitor".

External heating cable KVR 12 (Accessory)

SVM S332 is equipped with a terminal block for external heating cable (EB14, not enclosed). The connection is fused for a 3-metre cable length with 250 mA (F3 on communication board AA23). If a different cable length is to be used, the fuse must be replaced in accordance with table.

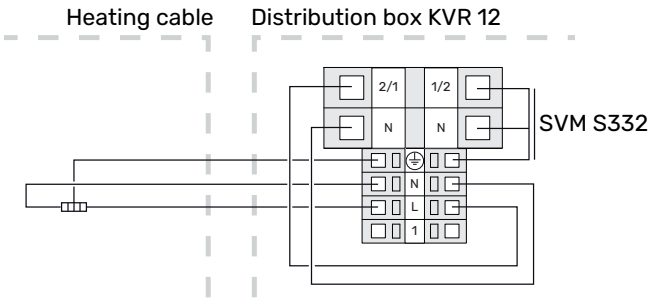
> **CAUTION!**
>
> Self regulating heating cables must not be connected.

Length (m)	Total power (W)	Fuse (F3)	NIBE Part no. Fuse
1	15	T100mA/250V	718 085**
3	45	T250mA/250V	518 900*
6	90	T500mA/250V	718 086**

*Fitted at the factory.

**Enclosed with the accessory KVR 12.

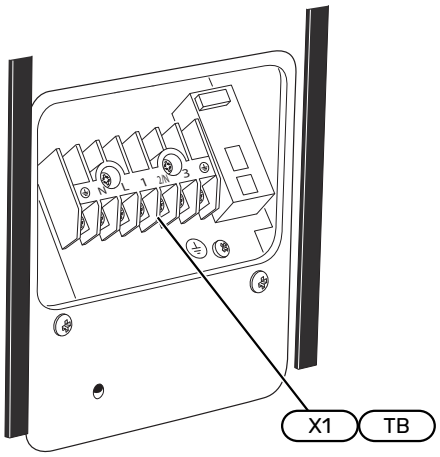
Connect the heating cable to terminal block PE, N and L in the enclosed electrical distribution box. Connect supply voltage from SVM S332 AA23-X7 to terminal block 1/2, N and PE. See following image:



> **CAUTION!**
>
> The pipe must be able to withstand the heat from the heating cable.
>
> To guarantee the function, the accessory KVR 12 should be used. See instructions in the Installer Manual for KVR 12.

COMMUNICATION

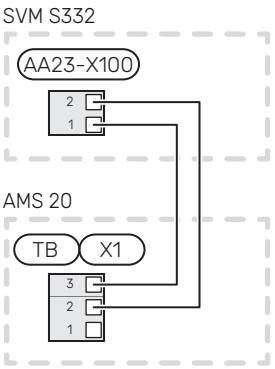
Communication connection AMS 20



Communication is connected on terminal block X1(TB).

Air/water heat pump

The outdoor unit is connected to terminal block AA23-X100:1-2.



Connecting accessories

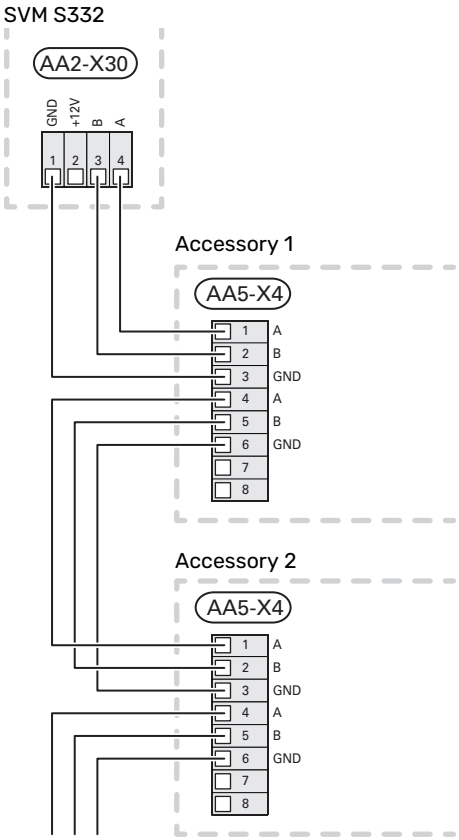
Instructions for connecting accessories are provided in the manual accompanying the accessory. See section "Accessories" for a list of the accessories that can be used with SVM S332. Connection for communication with the most common accessories is shown here.

Accessories with accessory board (AA5)

Accessories with accessory board (AA5) connect to terminal block AA2-X30:1, 3, 4 in SVM S332.

If several accessories are to be connected, or are already installed, the boards are connected in series.

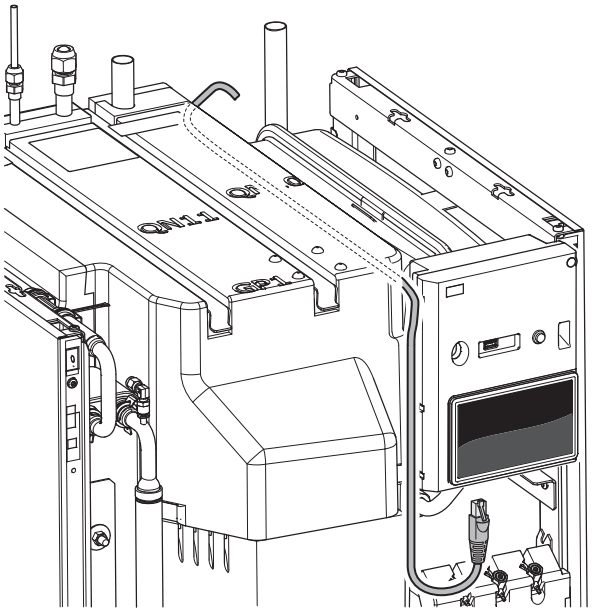
Because there can be different connections for accessories with accessory board (AA5), you should always read the instructions in the manual for the accessory that is to be installed.



Network cable for myUplink (W130)

In instances when you want to connect to myUplink using a network cable instead of via wifi.

1. Connect the shielded network cable to the display.
2. Route the network cable to the top of SVM S332.



SELECTABLE IN/OUTPUTS

SVM S332 has software-controlled AUX inputs and outputs for connecting the external switch function (contact has to be potential-free) or sensor.

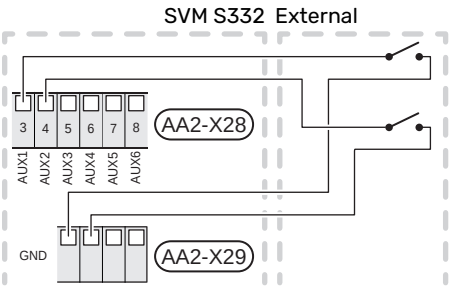
In menu 7.4 - "Selectable in/outputs", you select the AUX connection to which each function has been connected.

For certain functions, accessories may be required.

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

Selectable inputs

Selectable inputs on the base board (AA2) 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).

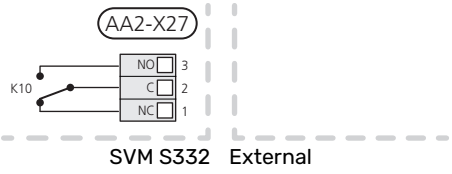
Selectable output

A selectable output is AA2-X27.

The output is a potential-free switching relay.

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

If SVM S332 is switched off or in emergency mode, the relay is in C-NC position.



NOTE!

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

TIP!

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

Possible selection for AUX inputs

Temperature sensor

Available options are:

- Cool/ht sensor (BT74), determines when it is time to switch between cooling, heating and hot water mode.
- Ext. HW out temp. (BT70) (displayed hot water sensor for HWC. Placed on the supply line.)

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

  Can be selected when "HW circulation" is activated in menu 7.4 - "Selectable in/outputs".
- 6 dedicated sensors (BT37.1 – BT37.6) for optional placement and naming.

Monitor

Available options are:

- External alarm (NO), External alarm (NC)
  The alarm is connected to the control, which means that the malfunction is presented as an information message in the display.
- Stove monitor. To the ERS HRV unit.
  A stove monitor is a thermostat that is connected to the chimney. If the negative pressure is too low, the fans in ERS (NC) are closed.

External activation of functions

An external switch function can be connected to SVM S332 to activate various functions. The function is activated during the time the switch is closed.

Possible functions that can be activated:

- Temp. more hot water
- Act. dmnd. mode small
- “External adjustment”

  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" ("Offset") is set with the number of steps selected. The value is adjustable between -10 and +10. Setting the value for the change is performed in menu 1.30.3 - "External adjustment".
- activation of one of four fan speeds.

  (Can be selected if ventilation accessory is activated.)

  The following options are available:

  – "Activate fan speed 1 (NO)" - "Activate fan speed 4 (NO)"
  – “Activate fan speed 1 (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

NOTE!

"SG Ready" requires two AUX inputs.

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

"SG Ready" is a smart form of tariff control where your electricity supplier can affect the indoor and hot water temperatures or simply block the additional heating and/or the 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 - "Selectable in/outputs" (SG Ready A and SG Ready B).

Closed or open switch means one of the following:

– *Blocking (A: Closed, B: Open)*

  "SG Ready" is active. The compressor in the outdoor unit and additional heating are blocked.

– *Normal mode (A: Open, B: Open)*

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

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

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

– *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. B = SG Ready B)

External blocking of functions

An external switch function can be connected to SVM S332 for blocking various functions. The switch must be potential-free and a closed switch results in blocking.

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

Functions that can be blocked:

- Block heating
- Block hot water (any hot water circulation (HWC) remains in operation)
- Block (EB101) (outdoor unit (EZ101))
- Block additional heat
- Tariff blocking (NO), Tariff blocking (NC) (additional heat, compressor, heating, cooling and hot water are disconnected)
- "External power limiting"

  For markets where the mains network operator requires dynamic control of the mains network's load, the compressor's and the immersion heater's operating power can be limited.

  You set the power limit in menu 7.4.2 - "External power limiting".

Possible selections for AUX output

Indications

- Alarm outp.
- Group alarm
- Cooling mode indication
- Cool. mode ind. w delay
- Holiday
- Away mode
- SPA (Smart Price Adaption: low electricity price)

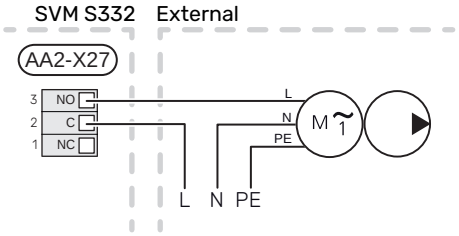
Control

- HW circulation (circulation pump for hot water circulation)
- Ext. HM pump (external heating medium pump)

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

Connecting external circulation pump

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



Settings

ELECTRICAL ADDITION - MAXIMUM OUTPUT

The immersion heater is set at the factory to max power.

The immersion heater's power is set in menu 7.1.5.1 - "Int elec add heat".

Power steps of the immersion heater

The table(s) displays the total phase current for the immersion heater.

1x230 V

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[1]	30.4

[1] Factory setting

3x400 V

Electrical addition (kW)	Max L1 (A)	Max L2 (A)	Max L3 (A)	N (A)
0	0.0	0.0	0.0	0.0
1	0.0	4.3	0.0	4.3
2	0.0	0.0	8.7	8.7
3	0.0	4.3	8.7	7.5
4	0.0	8.7	8.7	8.7
5	4.3	8.7	8.7	4.3
6	8.7	8.7	8.7	0.0
7	8.7	8.7	13.0	4.3
8	8.7	13.0	13.0	4.3
9[1]	13.0	13.0	13.0	0.0

[1] Factory setting

Current sensor

When the current sensors are connected, SVM S332 monitors the phase currents and allocates the power steps automatically to the least loaded phase.

> **CAUTION!**
>
> If the current sensors are not connected, SVM S332 calculates how high the currents will be if the relevant power steps are added. If the currents are higher than the set fuse size, the power step is not allowed to cut in.

EMERGENCY MODE

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

When SVM S332 is put into emergency mode, the system works as follows:

- The compressor is blocked.
- SVM S332 prioritises heating production[3].
- Hot water is produced if possible.
- The load monitor is not active.
- Max output for the immersion heater in emergency mode, limited according to the setting in menu 7.1.8.2 - "Emergency mode".
- Fixed supply temperature if the system has no value from the outdoor temperature sensor (BT1).

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

You can activate the emergency mode both when SVM S332 is running and when it is switched off.

To activate when SVM S332 is running: press and hold the on/off button (SF1) for 2 seconds and select "Emergency mode" from the shutdown menu.

To activate emergency mode when SVM S332 is switched off: press and hold the on/off button (SF1) for 5 seconds. (Deactivate the emergency mode by pressing once).

SINGLE PHASE COMPRESSOR

AMS 20 is equipped with a single phase compressor. This means that one of the phases will be loaded with a number of amperes (A) during compressor operation. Check the maximum load in the table below.

Outdoor module	Maximum current (A)
AMS 20-6	15
AMS 20-10	16

Maximum permitted phase loading can be restricted to a lower maximum current in the indoor unit.

[3] Only SVM S332 3x400 V with shunt valve QN11.

Commissioning and adjusting

Compressor heater

AMS 20 is equipped with a compressor heater (EB10) (CH) that heats the compressor when it is cold and at start-up. (Does not apply to AMS 20-6.)

> **CAUTION!**
>
> The compressor heater must have been active for 6 – 8 hours before the first start.

Preparations

1. Check that the externally mounted filling valves are fully closed.
2. Check that SVM S332 is closed.
3. Check the miniature circuit-breaker (FC1)[4]. It may have tripped during transport.
4. Check that the draining valve (QM1) is fully closed and that the temperature limiter (FQ10) has not tripped. See section "Temperature limiter".

[4] Only SVM S332 1x230 V.

Filling and venting

FILLING THE HOT WATER HEAT EXCHANGER

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

FILLING THE CLIMATE SYSTEM

The climate system and SVM S332 are filled by an external filling hose (incl. filling valve) being connected in the product's draining valve (QM1).

1. Open all vent valves (QM23.1–QM23.5).
2. Connect a filling hose to the draining valve for heating medium (QM1).
3. Open the draining valve (QM1) and the external filling valve. SVM S332 and the climate system fill with water.
4. When the water exiting the vent valves (QM23) is no longer mixed with air, close the valves.
5. After a while the pressure rises on the externally mounted pressure gauge (BP5). When the pressure reaches approx. 2.5 bar (025 MPa) the externally mounted safety valve (FL2) starts to release water. Then close the draining valve (QM1).
6. Reduce the climate system's pressure to the normal working range (approx. 1 bar) by opening the vent valves (QM23.1–QM23.5) or the safety valve (FL2).

VENTING THE CLIMATE SYSTEM

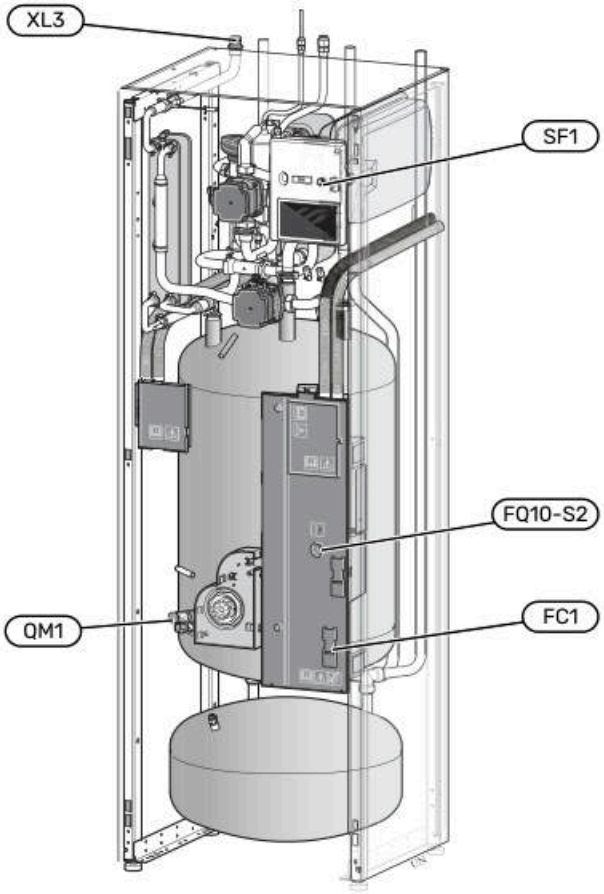
TIP!

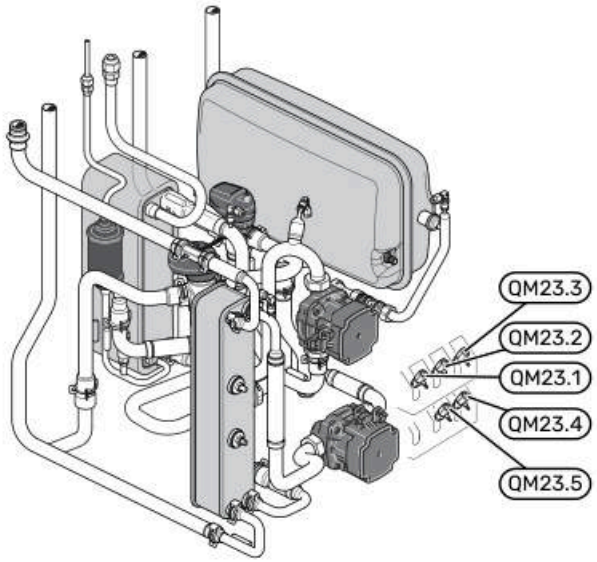
Use the enclosed venting hose for simpler and easier venting.

NOTE!

Insufficient venting can damage internal components in SVM S332.

1. Turn off SVM S332 using the on/off button. Wait for about 30 seconds.
2. Open all the vent valves (QM23.1–QM23.5–).
3. Fill SVM S332 via the drain connection (QM1) to a pressure of 1.0 bar.
4. Open and close the vent valves (QM23.1–QM23.5) until the pressure drops to 0 bar.
5. Repeat steps 1–4 until no more air emerges from the vent valves.
6. Close the vent valves and fill the product to a pressure of 1.5 bar.
7. Start SVM S332.
8. Follow the instructions in the start guide to vent.
9. The venting procedure can also be activated in menu 4.30.1.





Commissioning

START GUIDE

> **CAUTION!**
> There must be water in the climate system before SVM S332 is started.

> **CAUTION!**
> Do not start SVM S332 if there is a risk that the water in the system has frozen.

1. Power-up the outdoor unit.
2. Start SVM S332 by pressing the on/off button (SF1).
3. Follow the instructions in the display's start guide. If the start guide does not start when you start the SVM S332, you can 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.).

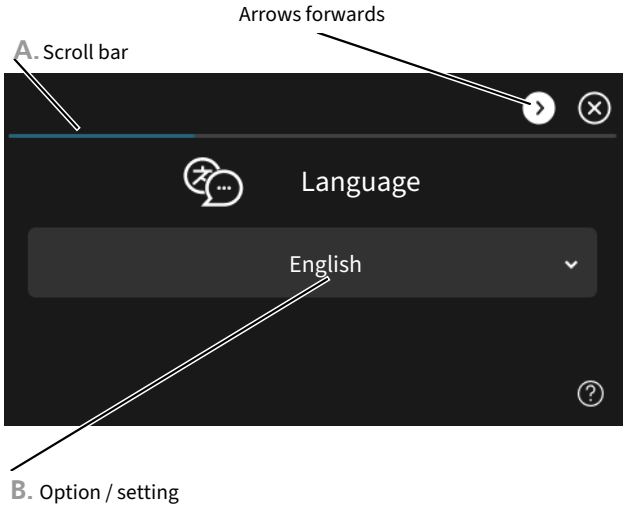
Commissioning

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.

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

Operation in the start guide



A. Scroll bar

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. Option / setting

Make settings for the system here.

COMMISSIONING WITHOUT OUTDOOR UNIT

The indoor module can be used without an outdoor unit, i.e. solely as an electric boiler, to produce heat[5] and hot water, for example before the outdoor unit is installed.

1. Go to menu 4.1 - "Operating mode" and select "Add. heat only".
2. Go to menu 7.3.2 - "Installed heat pump" and deactivate the heat pump..

NOTE!

When commissioning without NIBE outdoor unit the "communication error" alarm may appear in the display.

The alarm is reset if the relevant heat pump is deactivated in menu 7.3.2 - "Installed heat pump"

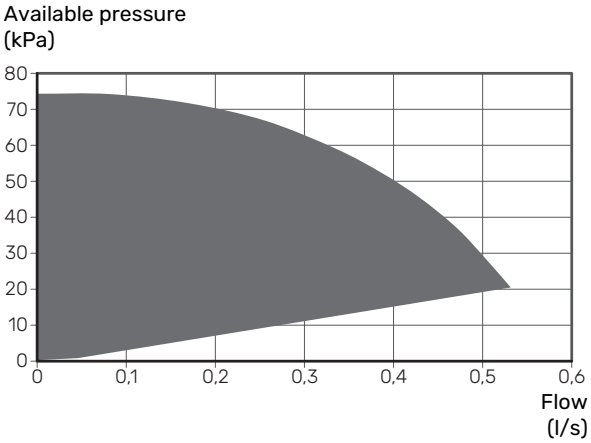
CAUTION!

Select operating mode "Auto" or "Manual" when the indoor unit is once again to be used with the outdoor unit.

PUMP SPEED

The heating medium pump (GP1) in SVM S332 is frequency controlled and adjusts automatically using control and based on heating demand.

Capacity, heating medium pump (GP1)



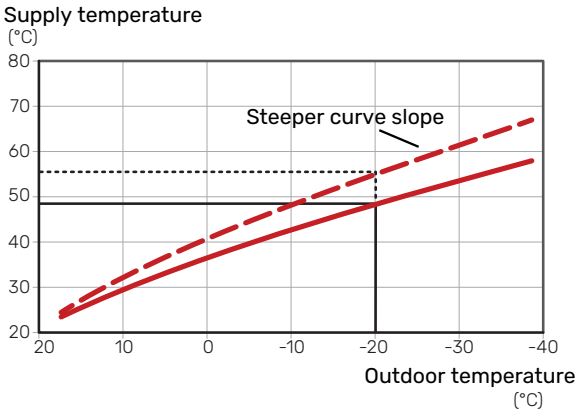
Setting the cooling/heating curve

In the menus "Curve, heating" and "Curve, cooling", you can see the heating and cooling curves for your house. The purpose of the curves is to provide an even indoor temperature, regardless of the outdoor temperature, and thereby energy-efficient operation. Based on these curves, SVM S332 determines the temperature of the water to the climate system (the supply temperature) and thus the indoor temperature.

CURVE COEFFICIENT

The slopes of the heating /cooling curves indicate 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 for heating or a lower supply temperature for cooling at a certain outdoor temperature.

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



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

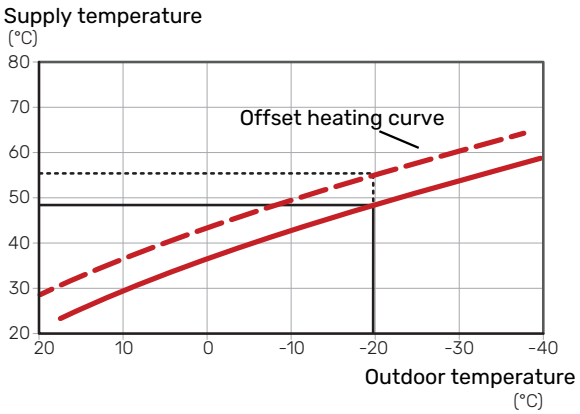
For houses with radiators or fan coils, a higher heating curve (e.g. curve 9) is suitable, for houses with under floor heating, a lower curve (e.g. curve 5) is suitable.

The heating/cooling curves are set when the heating/cooling system is installed, but may need adjusting later. Thereafter, the curves should not need further adjustment.

CURVE OFFSET

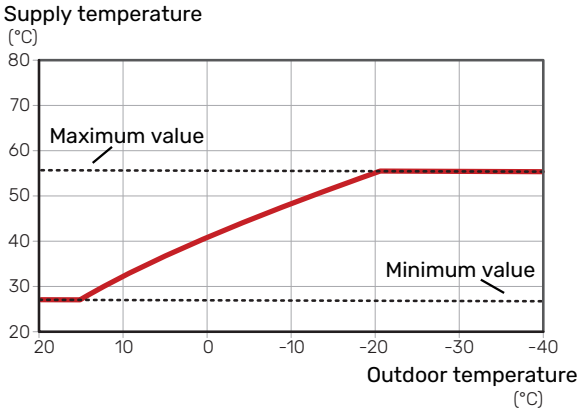
An offset of the heating curve means that the supply temperature changes by the same amount for all outdoor temperatures, e.g. a curve offset of +2 steps increases the supply temperature by 5 °C at all outdoor temperatures. A corresponding change to the cooling curve results in a lowering of the supply temperature.

[5] Only SVM S332 3x400 V with shunt valve QN11.



SUPPLY TEMPERATURE – MAXIMUM AND MINIMUM VALUES

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



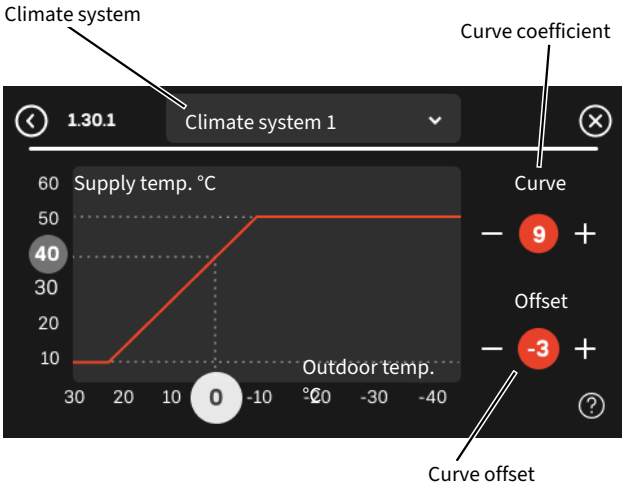
NOTE!

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

NOTE!

With underfloor cooling, "Min. supply temp. cooling" must be restricted to prevent condensation.

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.

NOTE!

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.

Accessories

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

Not all accessories are available on all markets.

AUTOMATIC GAS SEPARATOR AGS 10

This automatic gas separator needs to be installed when the pipe length between the outdoor unit NIBE AMS 20-10 and indoor unit SVM S332 is longer than 15 metres. In cases where additional filling with refrigerant is required.

Part no. 067 829

ENERGY MEASUREMENT KIT EMK 300

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

Part no. 067 314

EXTERNAL ELECTRIC ADDITIONAL HEAT ELK

These accessories require accessories card AXC 40 (step controlled addition).

ELK 5
Electric heater
5 kW, 1 x 230 V
Part no. 069 025

ELK 8
Electric heater
8 kW, 1 x 230 V
Part no. 069 026

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

ELK 26
26 kW, 3 x 400 V
Part no. 067 074

ELK 42
42 kW, 3 x 400 V
Part no. 067 075

ELK 213
7–13 kW, 3 x 400 V
Part no. 069 500

EXTRA SHUNT GROUP ECS

This accessory is used when SVM S332 is installed in houses with two or more different climate systems that require different supply temperatures.

ECS 40
Max 80 m²
Part no 067 287

ECS 41
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

HRV UNIT 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[1]
Part no. 066 163

ERS 20-250[2]
Part no. 066 068

ERS 30-400[3]
Part no. 066 165

ERS S40-400
Part no. 066 242

1 A preheater may be required.
2 A preheater may be required.
3 A preheater may be required.

BASE EXTENSION EF 45

This accessory can be used to create a larger area under SVM S332.

Part no. 067 152

AUXILIARY RELAY

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

HR 10
Recommended max fuse for control current 10 A.
Part no 067 309

COMMUNICATION MODULE FOR SOLAR ELECTRICITY EME 20

EME 20 is used to enable communication and control between inverters for solar cells from NIBE and SVM S332.

Part no. 057 215

CONDENSATION WATER PIPE KVR

Condensation water pipe with heating cable, different lengths.

KVR 12-10
1 metres
Part no. 067 932

KVR 12-30
3 metres
Part no. 067 933

KVR 12-60
6 metres
Part no. 067 934

REFRIGERANT PIPE KIT

Refrigerant pipe, different lengths.

RPK 10-120
1/4'' / 1/2'', 12 metres, insulated, for SVM S332-6
Part no. 067 889

RPK 12-120
1/4" / 5/8", 12 metres, insulated, for SVM S332-10
Part no. 067 830

ROOM UNIT RMU S40

The room unit is an accessory with a built-in room temperature sensor and humidity sensor, which allows the control and monitoring of SVM S332 to be carried out in a different part of the property to where it is located.

Part no. 067 650

SOLAR PACKAGE NIBE PV

NIBE PV is a modular system comprising solar panels, assembly parts and inverters, which is used to produce your own electricity.

ACCESSORY CARD AXC 40

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

Part no. 067 060

WIRELESS ACCESSORIES

It is possible to connect wireless accessories to SVM S332, e.g. room, humidity, CO_2 sensors.

BUFFER VESSEL UKV

A buffer vessel is an accumulator tank that is suitable for connection to a heat pump or another external heat source, and can have several different applications.

UKV 40
Part no. 088 470

UKV 100
Part no. 088 207

UKV 200
Part no. 080 300

UKV 300
Part no. 080 301

UKV 200 Cooling
Part no. 080 321

UKV 300 Cooling
Part no. 080 330

TOP CABINET TOC 30

Top cabinet, which conceals any pipes/ventilation ducts.

Height 245 mm
Part no. 067 517

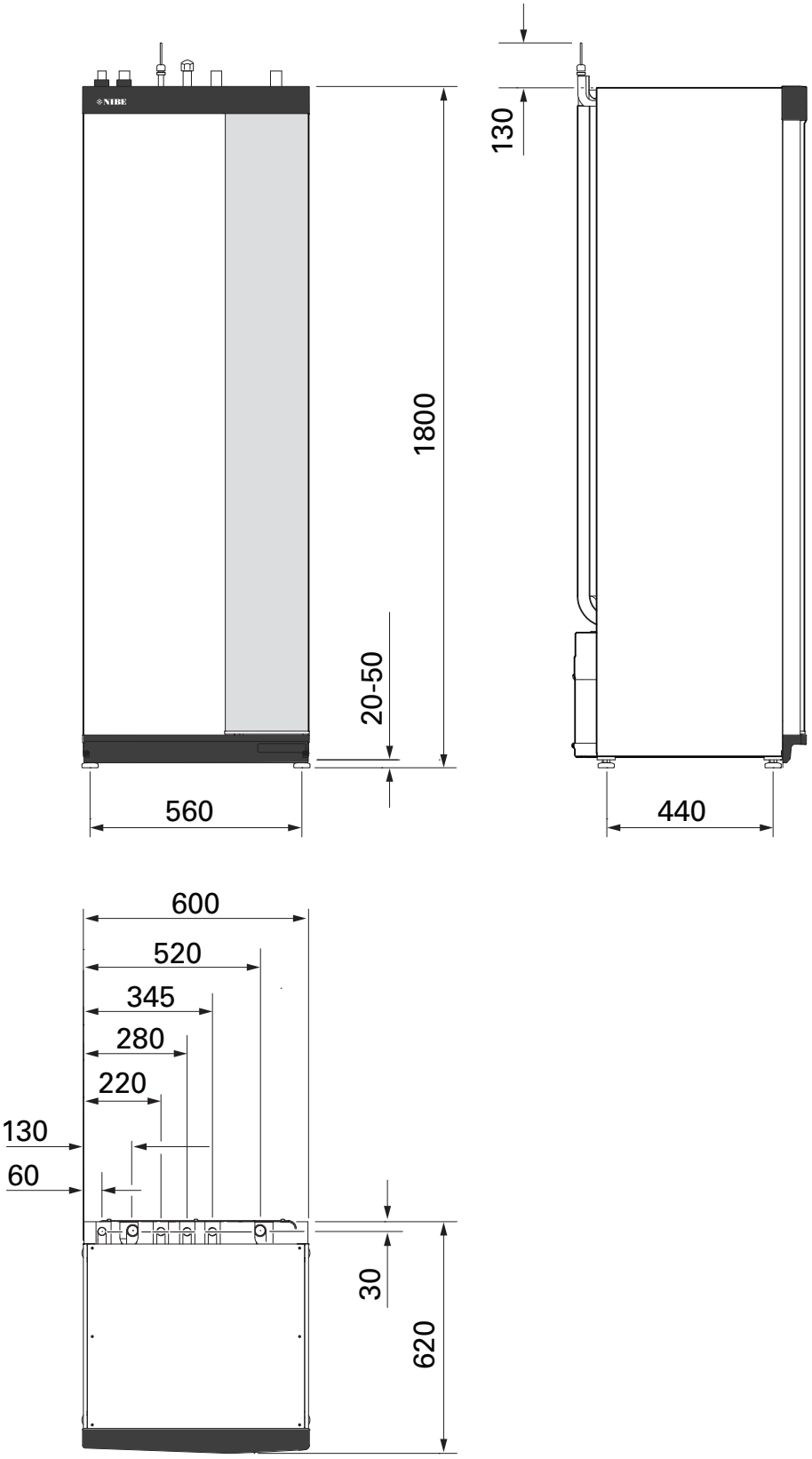
Height 345 mm
Part no. 067 518

Height 385-635 mm
Part no. 067 519

Technical data

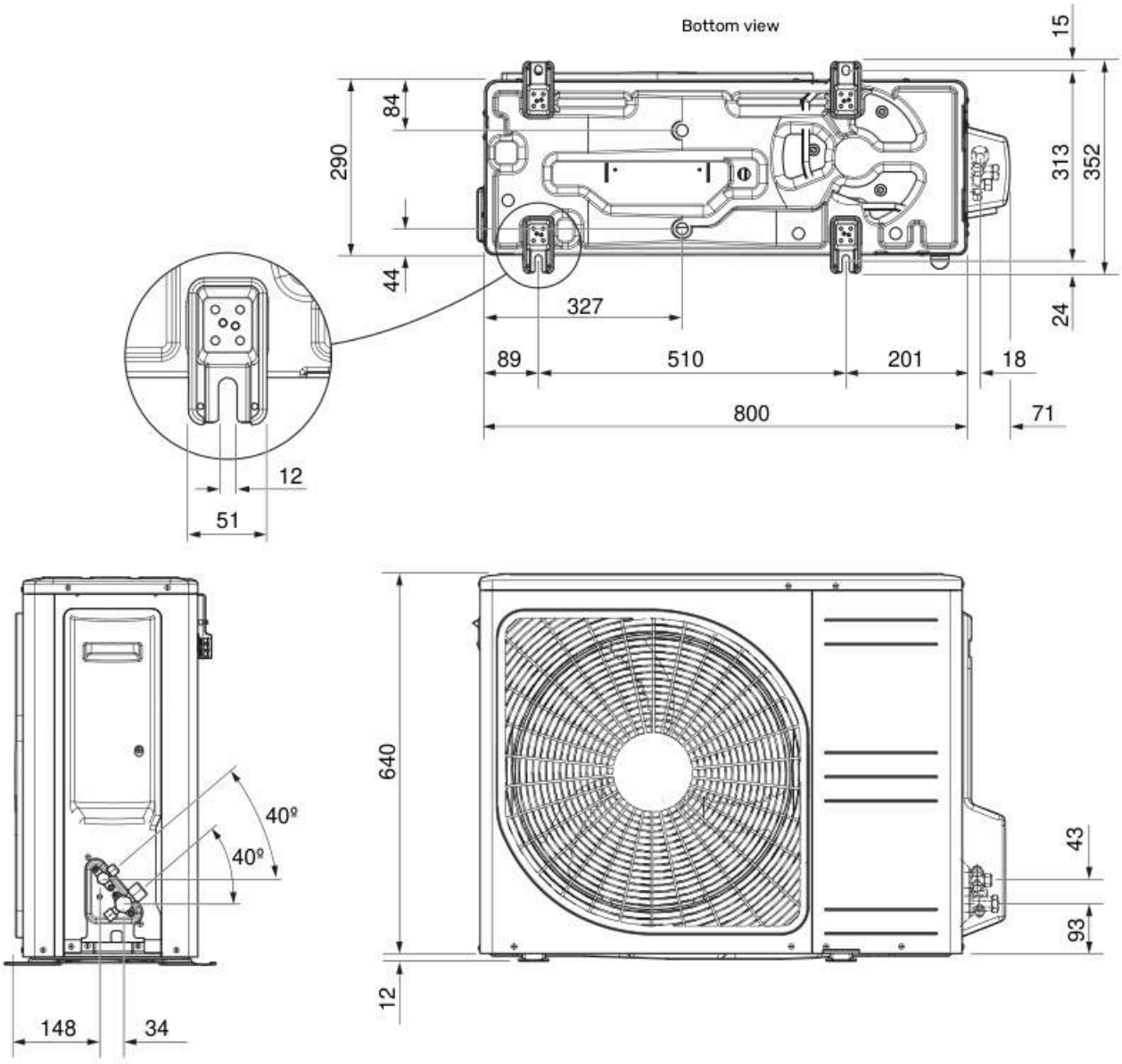
Dimensions

Dimensions, indoor unit

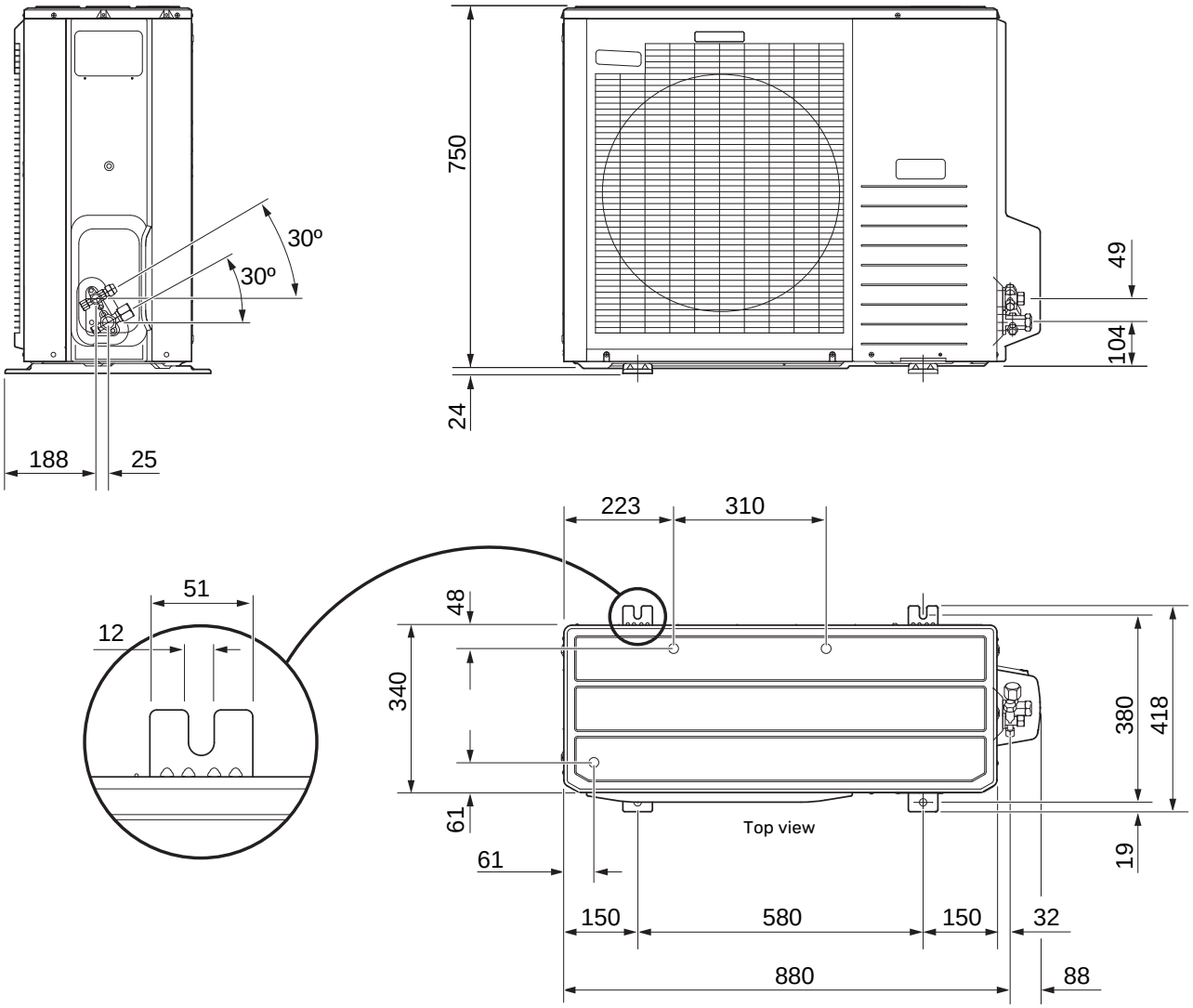


Dimensions, outdoor unit

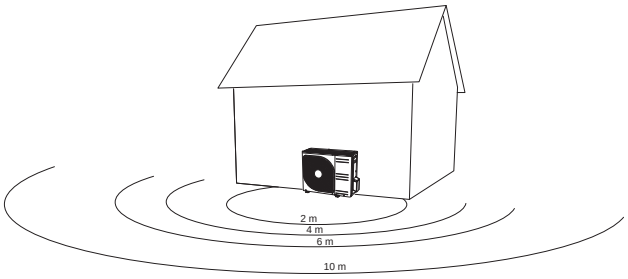
AMS 20-6



AMS 20-10


30º
30º
188
25
750
24
49
104
223
310
51
12
48
340
61
61
Top view
380
418
19
150
580
150
32
880
88

Sound levels



AMS 20 is usually placed next to a house wall, which gives a directed sound distribution that should be considered. Accordingly, you should always attempt to find a placement on the side that faces the least sound sensitive neighbouring area.

The sound pressure levels are further affected by walls, bricks, differences in ground level, etc and should therefore only be seen as guide values.

		Sound power[1]	Sound pressure at distance (m)[2]									
			1	2	3	4	5	6	7	8	9	10
AMS 20-6	Nominal sound value	54	49.0	43.0	39.5	37.0	35.0	33.5	32.1	31.0	29.9	29.0
	Max. sound value	62	57.0	51.0	47.5	45.0	43.0	41.5	40.1	39.0	37.9	37.0
	Max. sound value, silent mode	54	48.0	42.0	38.5	36.0	34.0	32.5	31.1	30.0	28.9	28.0
AMS 20-10	Nominal sound value	54	49.0	43.0	39.5	37.0	35.0	33.5	32.1	31.0	29.9	29.0
	Max. sound value	65	60.0	54.0	50.5	48.0	46.0	44.5	43.1	42.0	40.9	40.0
	Max. sound value, silent mode 60 Hz	54	49.0	43.0	39.5	37.0	35.0	33.5	32.1	31.0	29.9	29.0

1 Sound power level, $L_W(A)$, according to EN12102

2 Sound pressure calculated according to directivity factor Q=4

Installation requirements

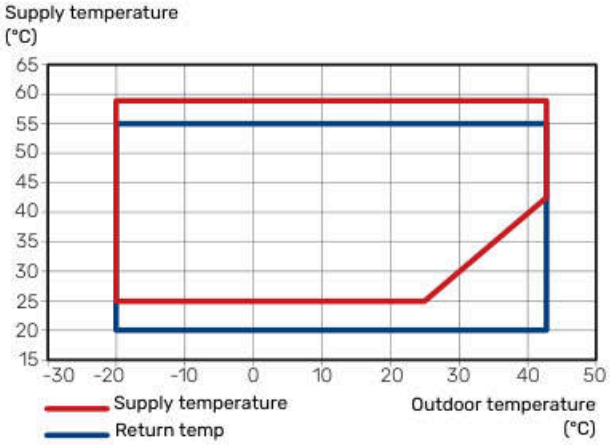
SVM S332	SVM S332-6	SVM S332-10
Compatible outdoor module	AMS 20-6	AMS 20-10
Requirements		
Max system pressure heating medium	0.3 (3)	
Highest recommended supply/return temperature at dimensioned outdoor temperature	55 / 45°C	
Max flow line temperature with compressor	58 °C	60 °C
Min supply temperature cooling	7 °C	
Max supply temp. cooling	25 °C	
Min flow, climate system, 100 % circulation pump speed (defrosting flow)	0.19 l/s	
Recommendations		
Heating/cooling: Min. circulating volume of climate system, in addition to internal buffer vessel (52 litres)	0 l	0 l
Under floor heating: Min. circulating volume of climate system, in addition to internal buffer vessel (52 litres)	0 l	30 l
Max flow, climate system	0.29 l/s	0.38 l/s
Min flow, heating system	0.09 l/s	0.12 l/s
Min flow, cooling system	0.11 l/s	0.16 l/s

Technical specifications

WORKING RANGE, HEATING

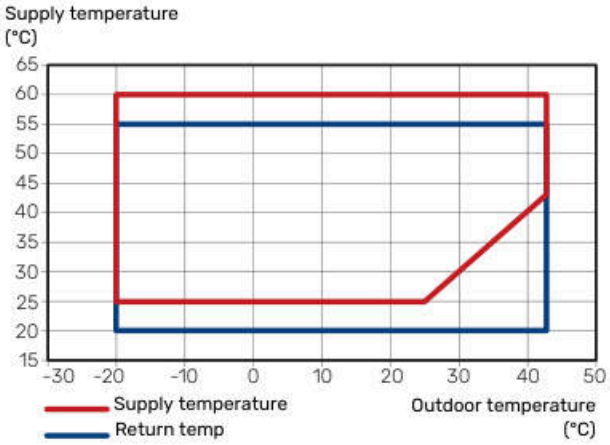
AMS 20-6

The supply temperature is permitted to be lower for a short period, e.g. at start-up.

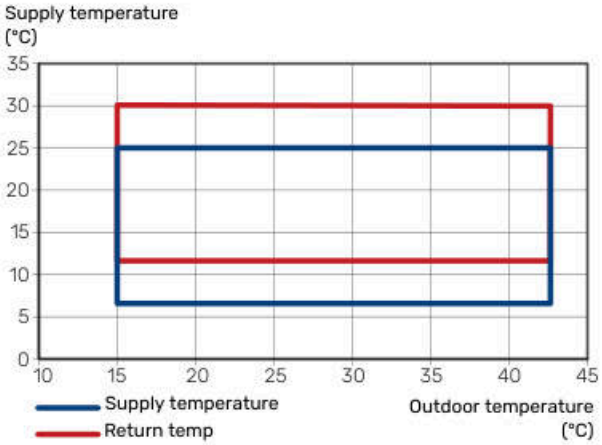


AMS 20-10

The supply temperature is permitted to be lower for a short period, e.g. at start-up.



WORKING RANGE, COOLING



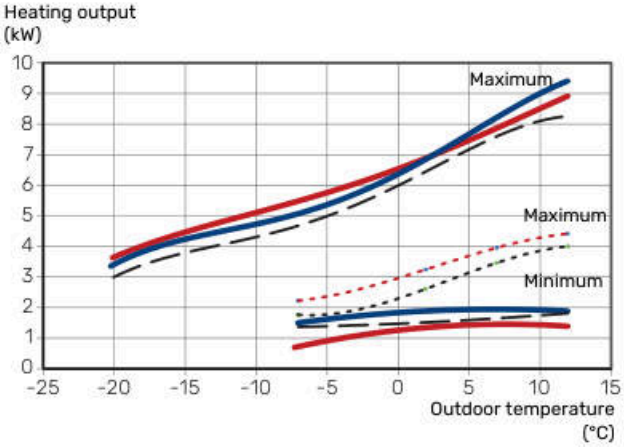
CAPACITY AND COP

Power and COP at different supply temperatures during continuous operation (excluding defrosting).

Power during heating operation

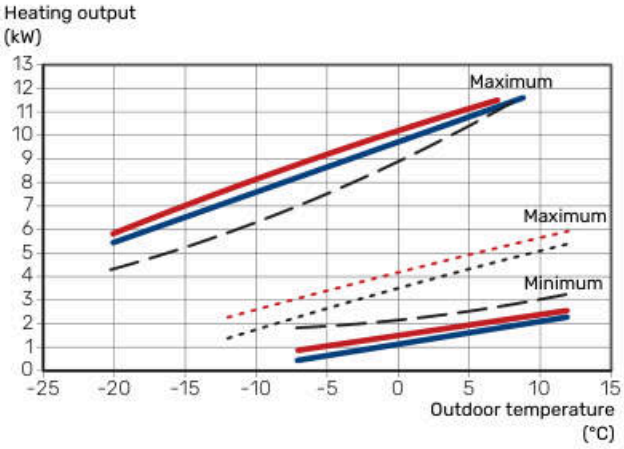
Maximum and minimum capacity during continuous operation.

AMS 20-6



Flow line temperature 35 °C
Flow line temperature 45 °C
Flow line temperature 55 °C
Silent mode, supply temperature 35°C
Silent mode, supply temperature 55°C

AMS 20-10

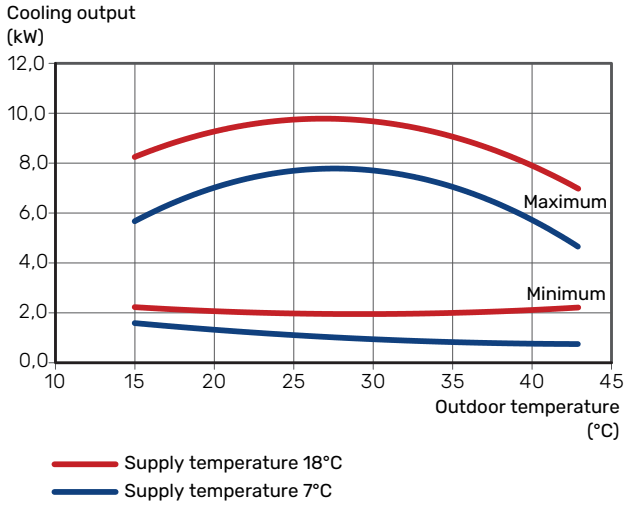


Flow line temperature 35 °C
Flow line temperature 45 °C
Flow line temperature 55 °C
Silent mode, supply temperature 35°C
Silent mode, supply temperature 55°C

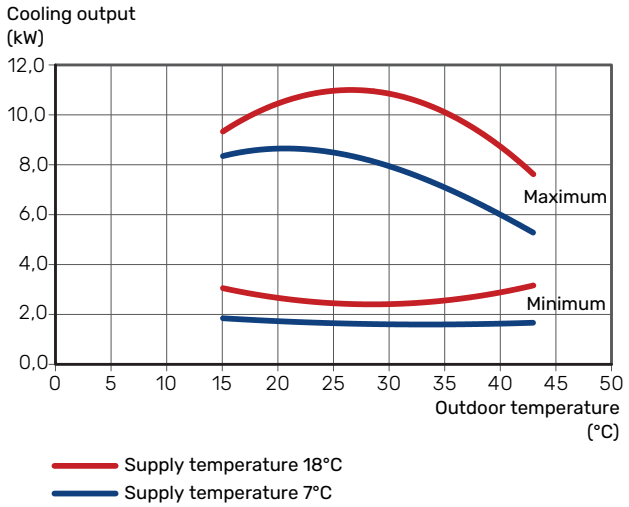
Power during cooling operation

Maximum and minimum capacity during continuous operation.

AMS 20-6

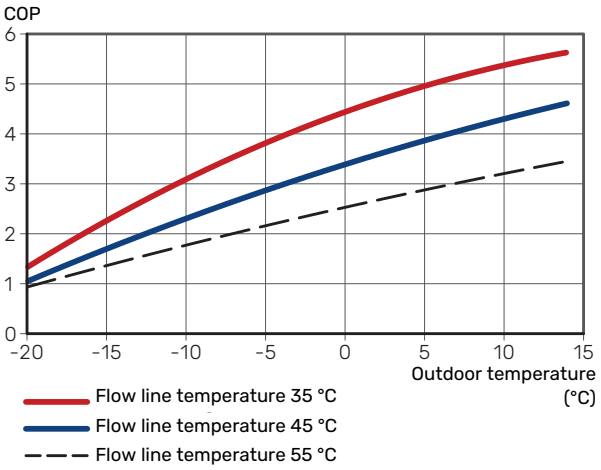


AMS 20-10

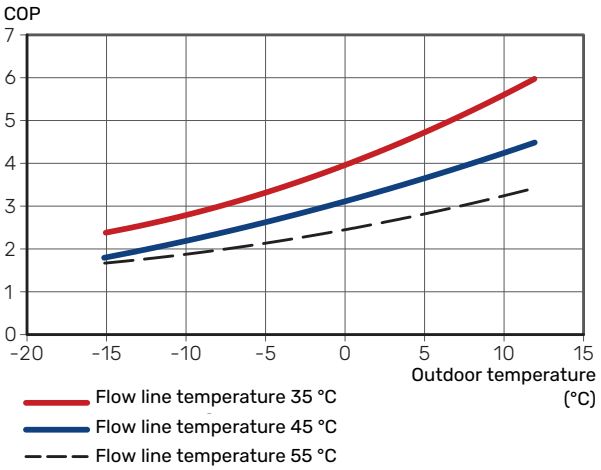


COP during heating operation

AMS 20-6



AMS 20-10



Indoor unit SVM S332		6	10	6	10
Voltage		**1 x 230 V**	**1 x 230 V**	**3 x 400 V**	**3 x 400 V**
Electrical data					
Max power, immersion heater (factory setting)	kW	7 (7)	7 (7)	9 (9)	9 (9)
Rated voltage		230 V ~ 50 Hz	230 V ~ 50 Hz	400 V 3N ~ 50 Hz	400 V 3N ~ 50 Hz
Max operating current	A	30.1	30.1	13.5	13.5
Fuse	A	32	32	16	16
Output, heating medium pump (GP1)	W	2 – 75	2 – 75	2 – 75	2 – 75
Output, heating medium pump (GP1)	W	-			
Output, charge pump for hot water (GP8)	W	2 – 45	2 – 45	2 – 45	2 – 45
Enclosure class		IPX1B			
Equipment Compliant with IEC 61000-3-12					
For Connection Design Purposes, Compliant with IEC 61000-3-3 technical requirements					
WLAN					
2.412 - 2.484 GHz max power	dbm	11			
Wireless units					
2.405 - 2.480 GHz max power	dbm	4			
Heating medium circuit					
Min pressure in the heating medium circuit	MPa (bar)	0.05 (0.5)			
Max pressure in the heating medium circuit	MPa (bar)	0.3 (3)			
Max. pressure in brine system	MPa (bar)	4 (40)			
Opening pressure, safety valve	MPa (bar)	0.25 (2.5)			
Max. heating medium temperature	°C	80			
Pipe connections					
Heating medium ext Ø	mm	22			
Hot water connection ext Ø	mm	22			
Cold water connection ext Ø	mm	22			
Connection, gas pipe (Cu) Ø	mm	12.7 (1/2")	15.9 (5/8")	12.7 (1/2")	15.9 (5/8")
Connection, liquid pipe (Cu) Ø [1]	mm	6.35 (1/4")			
Hot water and heating section					
Volume storage tank hot water	litre	140			
Volume, total indoor	litre	192			
Volume buffer vessel	litre	52			
Min. permitted pressure in hot water heat exchanger	MPa (bar)	0.01 (0.1)			
Max. permitted pressure in hot water heat exchanger	MPa (bar)	1.0 (10)			
Capacity, hot water heating according to EN 16 147					
Tap volume 40 °C (comfort mode Medium) [2]	litre	185			
Dimensions and weight					
Width	mm	600			
Depth	mm	620			
Height [3]	mm	1,800			
Required ceiling height [4]	mm	2,010			
Weight	kg	125	127	128	130
Corrosion protection in the hot water heat exchanger		Stainless			
Part no.					
Part no.		069 247	069 248	069 255	069 256

1 If the length of the refrigerant pipes exceeds 15 metres, extra refrigerant must be added at 0.02 kg/m.

2 This applies at a tap flow of 10 l/min.

3 Enclosed filterball valve (QZ2.1) is 120 mm high.

4 With feet removed, the height is approx. 1,940 mm.

Outdoor module AMS 20		6	10
Output data according to EN 14 511, partial load [1]			
Heating Capacity / power input / COP (kW/kW/-) at nominal flow Outdoor temp. / Supply temp.	-7 / 35 °C	5.55 / 2.05 / 2.71	7.18 / 2.93 / 2.45
	2 / 35 °C	2.31 / 0.56 / 4.13	3.46 / 0.83 / 4.17
	2 / 45 °C	2.02 / 0.67 / 3.01	3.24 / 1.12 / 3.24
	7 / 35 °C	2.64 / 0.49 / 5.42	4.00 / 0.75 / 5.33
	7 / 45 °C	2.43 / 0.65 / 3.74	5.00 / 1.28 / 3.91
Cooling Capacity / power input / EER (kW/kW/-) at maximum flow Outdoor temp: / Supply temp.	35 / 7 °C	5.32 / 1.94 / 2.74	7.07 / 2.40 / 2.95
	35 / 18 °C	7.55 / 2.11 / 3.58	10.79 / 3.00 / 3.60
SCOP according to EN 14 825			
$P_{designc}$/SEER 7 / 12 / 35 °C	kW/-	5.3 / 4.12	7.1 / 4.03
$P_{designc}$/SEER 18 / 23 / 35 °C	kW/-	7.6 / 6.08	10.8 / 5.17
Nominal heat output ($P_{designh}$) average climate 35 °C / 55 °C (Europe)	kW	5.20 / 5.60	6.30 / 6.45
Nominal heat output ($P_{designh}$) cold climate 35 °C / 55 °C	kW	5.80 / 5.70	6.50 / 6.20
Nominal heat output ($P_{designh}$) warm climate 35 °C / 55 °C	kW	5.57 / 5.48	6.80 / 6.60
SCOP average climate, 35 °C / 55 °C (Europe)		5.08 / 3.56	4.59 / 3.36
SCOP cold climate, 35 °C / 55 °C		4.10 / 3.05	3.95 / 2.94
SCOP warm climate, 35 °C / 55 °C		6.70 / 4.53	6.59 / 4.49
Energy rating, average climate [2]			
The product's room heating efficiency class 35 C / 55 C [3]		A+++ / A++	
The system's room heating efficiency class 35 C / 55 C [4]		A+++ / A++	
Electrical data			
Rated voltage		230 V ~ 50 Hz	
Max. operating current outdoor unit	A_{rms}	15	16
Max operating current, compressor	A_{rms}	14	15
Max. power, fan	W	50	86
Drain pan heating (integrated)	W	110	100
Fuse	A_{rms}	16	
Starting current	A_{rms}	5	
Enclosure class		IP24	
Refrigerant circuit			
Type of refrigerant		R32	
GWP refrigerant		675	
Filling amount	kg	1.3	1.84
Type of compressor		Twin Rotary	
CO_2 equivalent	t	0.88	1.24
Cut-out value pressure switch HP (BP1)	MPa (bar)	-	4.15 (41.5)
Cut-out value pressure switch LP (BP2)	MPa (bar)	-	0.079 (0.79)
Max. length, refrigerant pipe, one way	m	30	50
Max height difference, when AMS 20 is placed higher than SVM S332	m	20	30
Max height difference, when AMS 20 is placed lower than SVM S332	m	20	15
Dimensions, refrigerant pipes, Gas pipe/Liquid pipe (Cu) ⌀ [5]	mm	12.7 (1/2") / 6.35 (1/4")	15.88 (5/8") / 6.35 (1/4")
Airflow			
Max airflow	m^3/h	2,530	3,000
Working area			
Min./max. air temperature, heating	°C	-20 / 43	
Min./max. air temperature, cooling	°C	15 / 43	
Defrosting system		Reverse cycle	
Pipe connections			
Pipe connection option		Right-hand side	
Pipe connections		Flare	
Dimensions and weight			
Width	mm	800 (+71 valve protection)	880 (+88 valve protection)
Depth	mm	290	340 (+ 110 with foot rail)
Height with stand	mm	640	750
Weight	kg	46	60
Miscellaneous			
Part no.		064 235	064 319
EPREL		174 28 96	175 65 17

1 Power statements including defrosting according to EN 14511 at heating medium supply corresponding to DT=5 K at 7 / 45.

2 Reported efficiency for the system also takes the temperature regulator into account. If the system is supplemented with an external auxiliary boiler or solar heating, the total efficiency of the system must be recalculated.

3 Scale for the product's room heating efficiency class A+++ to D.
4 Scale for the system's room heating efficiency class A+++ to G.
5 If the length of the refrigerant pipes exceeds 15 metres, extra refrigerant must be added at 0.02 kg/m.

Energy labelling

INFORMATION SHEET

Supplier		NIBE	
Model		**AMS 20-6 / SVM S332-6**	**AMS 20-10 / SVM S332-10**
Temperature application	°C	35 / 55	35 / 55
Declared load profile for water heating		XL	XL
Seasonal space heating energy efficiency class, average climate		A+++ / A++	A+++ / A++
Water heating energy efficiency class, average climate		A	A
Rated heat output ($P_{designh}$), average climate	kW	5 / 6	6 / 6
Annual energy consumption space heating, average climate	kWh	2,116 / 3,250	2,834 / 3,961
Annual energy consumption water heating, average climate	kWh	1,558	1,627
Seasonal space heating energy efficiency, average climate	%	200 / 139	181 / 132
Water heating energy efficiency, average climate	%	107	103
Sound power level L_{WA} indoors	dB	35	35
Rated heat output ($P_{designh}$), cold climate	kW	6 / 6	7 / 6
Rated heat output ($P_{designh}$), warm climate	kW	6 / 5	7 / 7
Annual energy consumption space heating, cold climate	kWh	3,487 / 4,604	4,059 / 5,204
Annual energy consumption water heating, cold climate	kWh	1,869	2,030
Annual energy consumption space heating, warm climate	kWh	1,110 / 1,617	1,379 / 1,964
Annual energy consumption water heating, warm climate	kWh	1,300	1,336
Seasonal space heating energy efficiency, cold climate	%	161 / 119	155 / 114
Water heating energy efficiency, cold climate	%	90	82
Seasonal space heating energy efficiency, warm climate	%	265 / 178	260 / 177
Water heating energy efficiency, warm climate	%	129	125
Sound power level L_{WA} outdoors	dB	54	54

DATA FOR ENERGY EFFICIENCY OF THE PACKAGE

Model		AMS 20-6 / SVM S332-6	AMS 20-10 / SVM S332-10
Temperature application	°C	35 / 55	35 / 55
Controller, class		VI	
Controller, contribution to efficiency	%	4.0	
Seasonal space heating energy efficiency of the package, average climate	%	204 / 143	185 / 136
Seasonal space heating energy efficiency class of the package, average climate		**A+++ / A++**	**A+++ / A++**
Seasonal space heating energy efficiency of the package, cold climate	%	165 / 123	159 / 118
Seasonal space heating energy efficiency of the package, warm climate	%	269 / 182	264 / 181

Reported efficiency for the system also takes the temperature regulator into account. If the system is supplemented with external additional heat or solar heating, the total efficiency of the system must be recalculated.

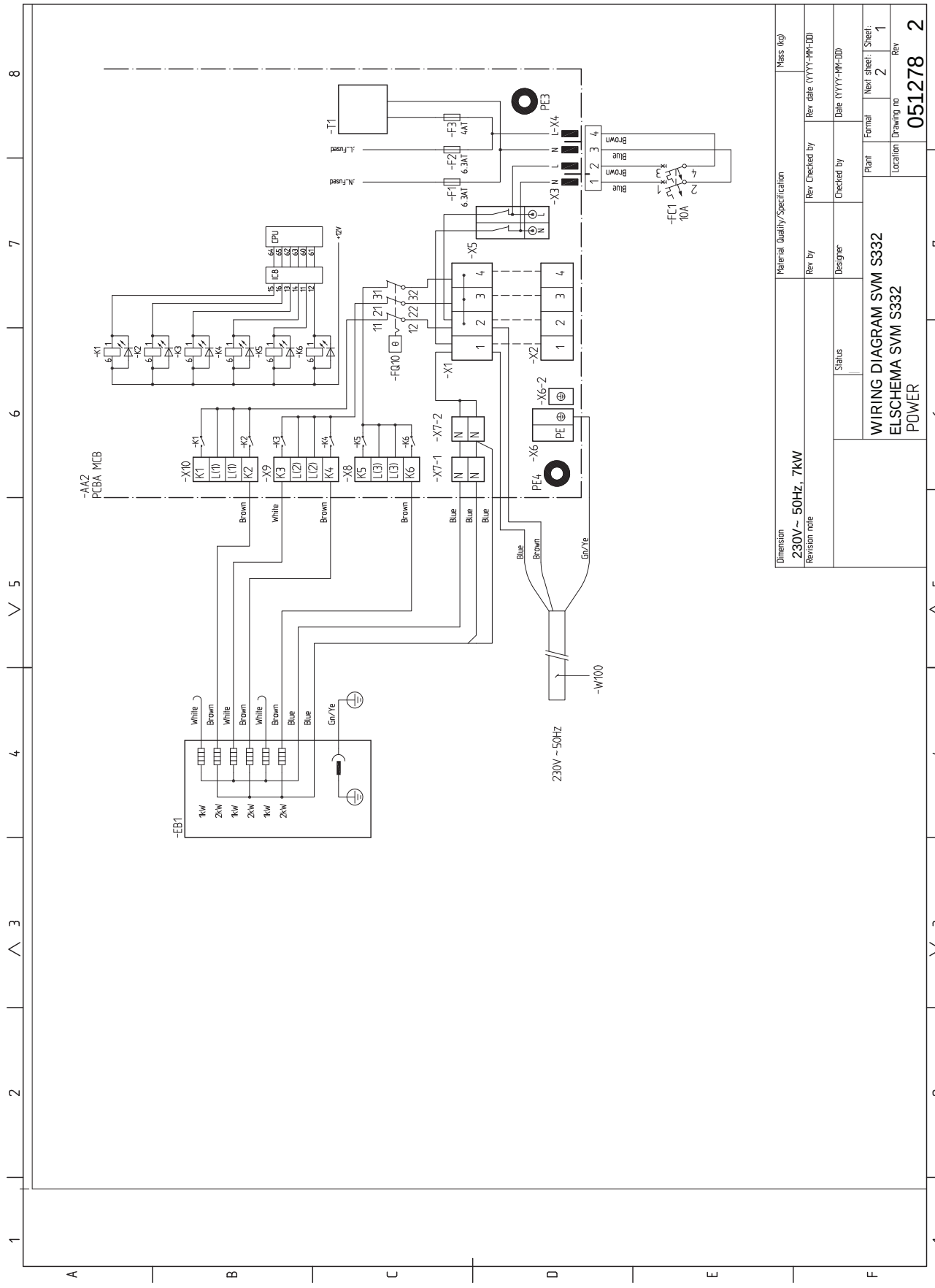
TECHNICAL DOCUMENTATION

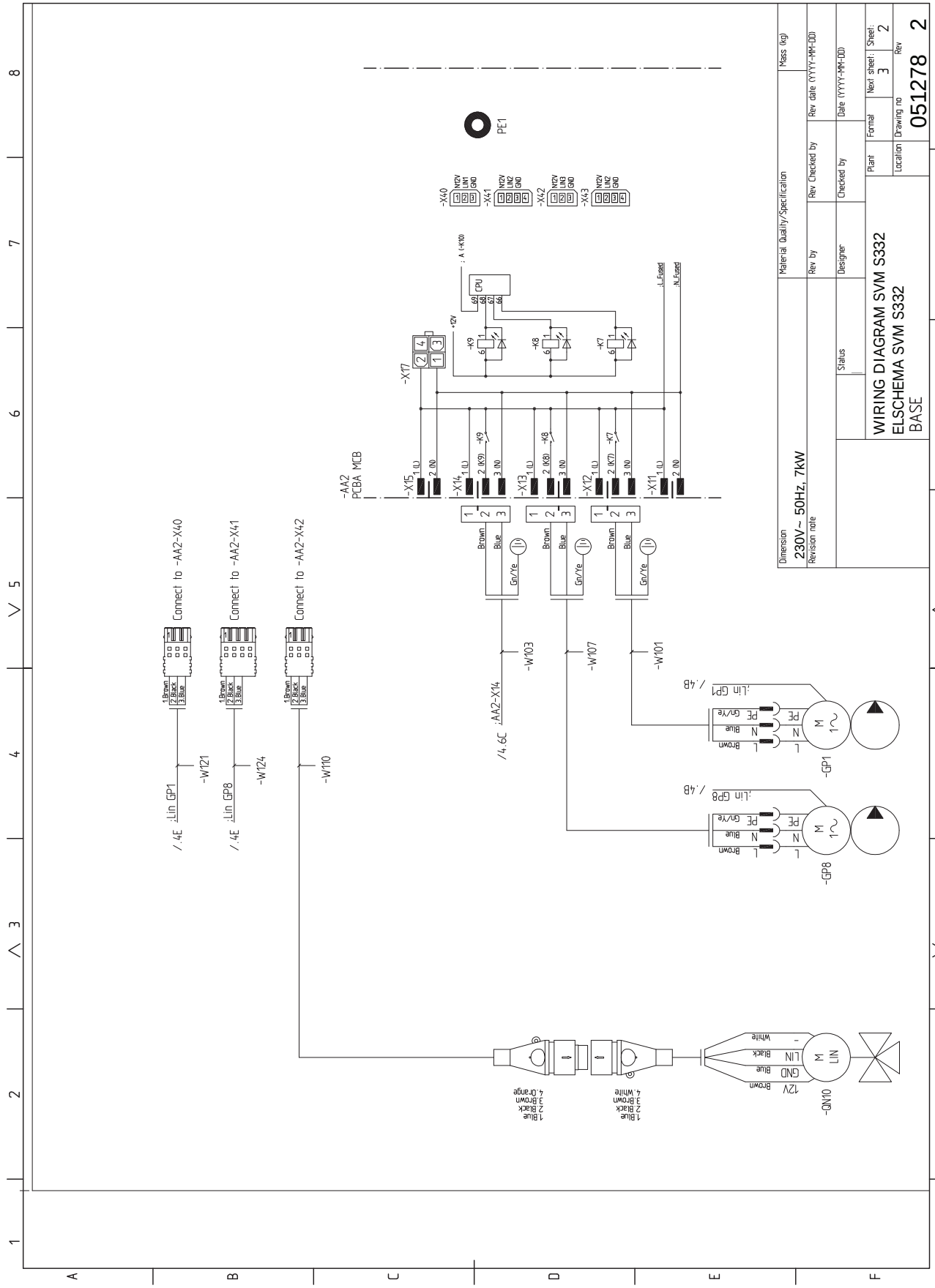
Model		AMS 20-6 / SVM S332-6					
Type of heat pump		☒ Air-water ☐ Exhaust-water ☐ Brine-water ☐ Water-water					
Low-temperature heat pump		☐ Yes ☒ No					
Integrated immersion heater for additional heat		☒ Yes ☐ No					
Heat pump combination heater		☒ Yes ☐ No					
Climate		☒ Average ☐ Cold ☐ Warm					
Temperature application		☒ Medium (55°C) ☐ Low (35°C)					
Applied standards		EN 14825:2022, EN 16147:2017+A1:2022, EN 12102-1:2022					
Rated heat output	Prated	5.6	kW	*Seasonal space heating energy efficiency*	η_s	139	%
Declared capacity for space heating at part load and at outdoor temperature Tj				*Declared coefficient of performance for space heating at part load and at outdoor temperature Tj*			
Tj = -7 °C	Pdh	5.0	kW	Tj = -7 °C	COPd	1.95	-
Tj = +2 °C	Pdh	2.9	kW	Tj = +2 °C	COPd	3.51	-
Tj = +7 °C	Pdh	1.9	kW	Tj = +7 °C	COPd	4.99	-
Tj = +12 °C	Pdh	1.7	kW	Tj = +12 °C	COPd	6.33	-
Tj = biv	Pdh	5.0	kW	Tj = biv	COPd	1.95	-
Tj = TOL	Pdh	4.6	kW	Tj = TOL	COPd	1.75	-
Tj = -15 °C (if TOL < -20 °C)	Pdh		kW	Tj = -15 °C (if TOL < -20 °C)	COPd		-
Bivalent temperature	T_{biv}	-7	°C	Min. outdoor air temperature	TOL	-10	°C
Cycling interval capacity	Pcych		kW	Cycling interval efficiency	COPcyc		-
Degradation coefficient	Cdh	0.96	-	Max supply temperature	WTOL	58	°C
Power consumption in modes other than active mode				*Additional heat*			
Off mode	P_{OFF}	0.007	kW	Rated heat output	Psup	1.0	kW
Thermostat-off mode	P_{TO}	0.011	kW				
Standby mode	P_{SB}	0.011	kW	Type of energy input	Electric		
Crankcase heater mode	P_{CK}	0.000	kW				
Other items							
Capacity control	Variable			Rated airflow (air-water)		2,340	m³/h
Sound power level, indoors/outdoors	L_{WA}	35 / 54	dB	Nominal heating medium flow			m³/h
Annual energy consumption	Q_{HE}	3,250	kWh	Brine flow brine-water or water-water heat pumps			m³/h
For heat pump combination heater							
Declared load profile for water heating	XL			*Water heating energy efficiency*	η_{wh}	107	%
Daily energy consumption	Q_{elec}	7.357	kWh	Daily fuel consumption	Q_{fuel}		kWh
Annual energy consumption	AEC	1,558	kWh	Annual fuel consumption	AFC		GJ
Contact information	*NIBE Energy Systems – Box 14 – Hannabadsvägen 5 – 285 21 Markaryd – Sweden*						

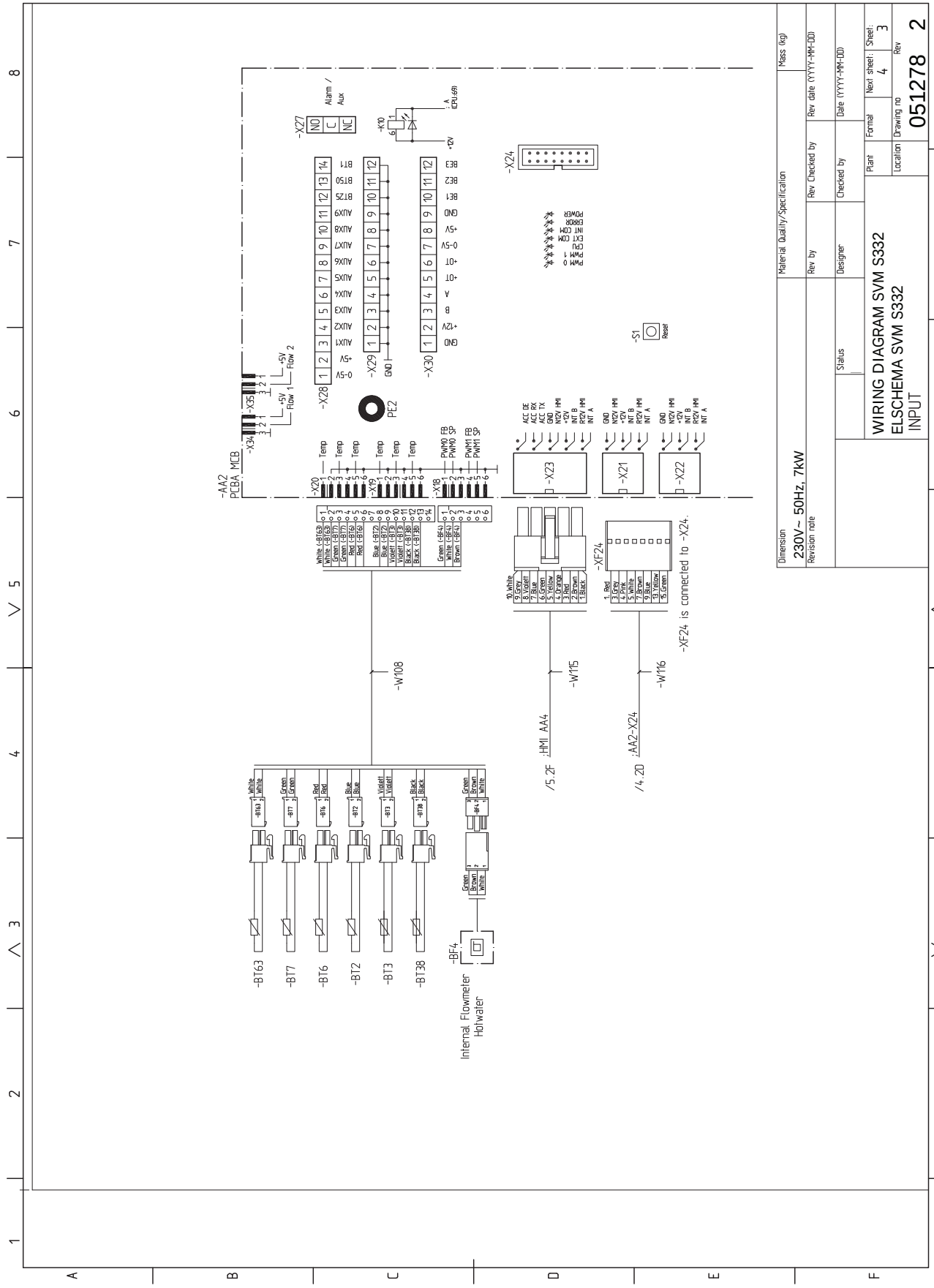
Model		AMS 20-10 / SVM S332-10					
Type of heat pump		☒ Air-water ☐ Exhaust-water ☐ Brine-water ☐ Water-water					
Low-temperature heat pump		☐ Yes ☒ No					
Integrated immersion heater for additional heat		☒ Yes ☐ No					
Heat pump combination heater		☒ Yes ☐ No					
Climate		☒ Average ☐ Cold ☐ Warm					
Temperature application		☒ Medium (55°C) ☐ Low (35°C)					
Applied standards		EN 14825:2022, EN 16147:2017+A1:2022, EN 12102-1:2022					
Rated heat output	Prated	6.5	kW	*Seasonal space heating energy efficiency*	η_s	132	%
Declared capacity for space heating at part load and at outdoor temperature Tj				*Declared coefficient of performance for space heating at part load and at outdoor temperature Tj*			
Tj = -7 °C	Pdh	5.8	kW	Tj = -7 °C	COPd	1.98	-
Tj = +2 °C	Pdh	3.5	kW	Tj = +2 °C	COPd	3.17	-
Tj = +7 °C	Pdh	2.3	kW	Tj = +7 °C	COPd	4.98	-
Tj = +12 °C	Pdh	2.2	kW	Tj = +12 °C	COPd	5.50	-
Tj = biv	Pdh	5.8	kW	Tj = biv	COPd	1.98	-
Tj = TOL	Pdh	5.8	kW	Tj = TOL	COPd	1.69	-
Tj = -15 °C (if TOL < -20 °C)	Pdh		kW	Tj = -15 °C (if TOL < -20 °C)	COPd		-
Bivalent temperature	T_{biv}	-7	°C	Min. outdoor air temperature	TOL	-10	°C
Cycling interval capacity	Pcych		kW	Cycling interval efficiency	COPcyc		-
Degradation coefficient	Cdh	0.98	-	Max supply temperature	WTOL	60	°C
Power consumption in modes other than active mode				*Additional heat*			
Off mode	P_{OFF}	0.003	kW	Rated heat output	Psup	0.7	kW
Thermostat-off mode	P_{TO}	0.008	kW				
Standby mode	P_{SB}	0.008	kW	Type of energy input	Electric		
Crankcase heater mode	P_{CK}	0.000	kW				
Other items							
Capacity control	Variable			Rated airflow (air-water)		3,000	m³/h
Sound power level, indoors/outdoors	L_{WA}	35 / 54	dB	Nominal heating medium flow			m³/h
Annual energy consumption	Q_{HE}	3,961	kWh	Brine flow brine-water or water-water heat pumps			m³/h
For heat pump combination heater							
Declared load profile for water heating	XL			*Water heating energy efficiency*	η_{wh}	103	%
Daily energy consumption	Q_{elec}	7.720	kWh	Daily fuel consumption	Q_{fuel}		kWh
Annual energy consumption	AEC	1,627	kWh	Annual fuel consumption	AFC		GJ
Contact information	*NIBE Energy Systems – Box 14 – Hannabadsvägen 5 – 285 21 Markaryd – Sweden*						

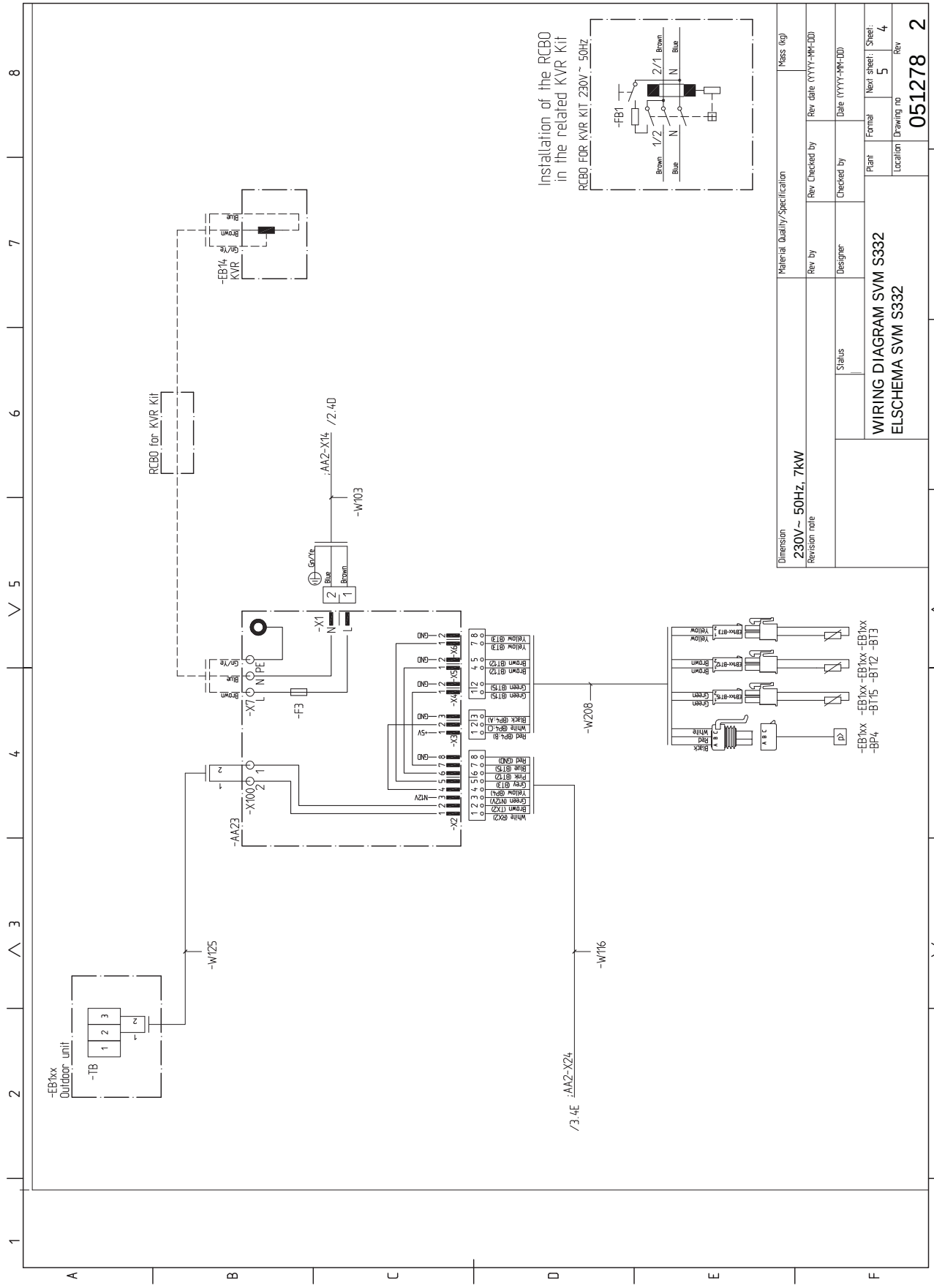
Electrical circuit diagram

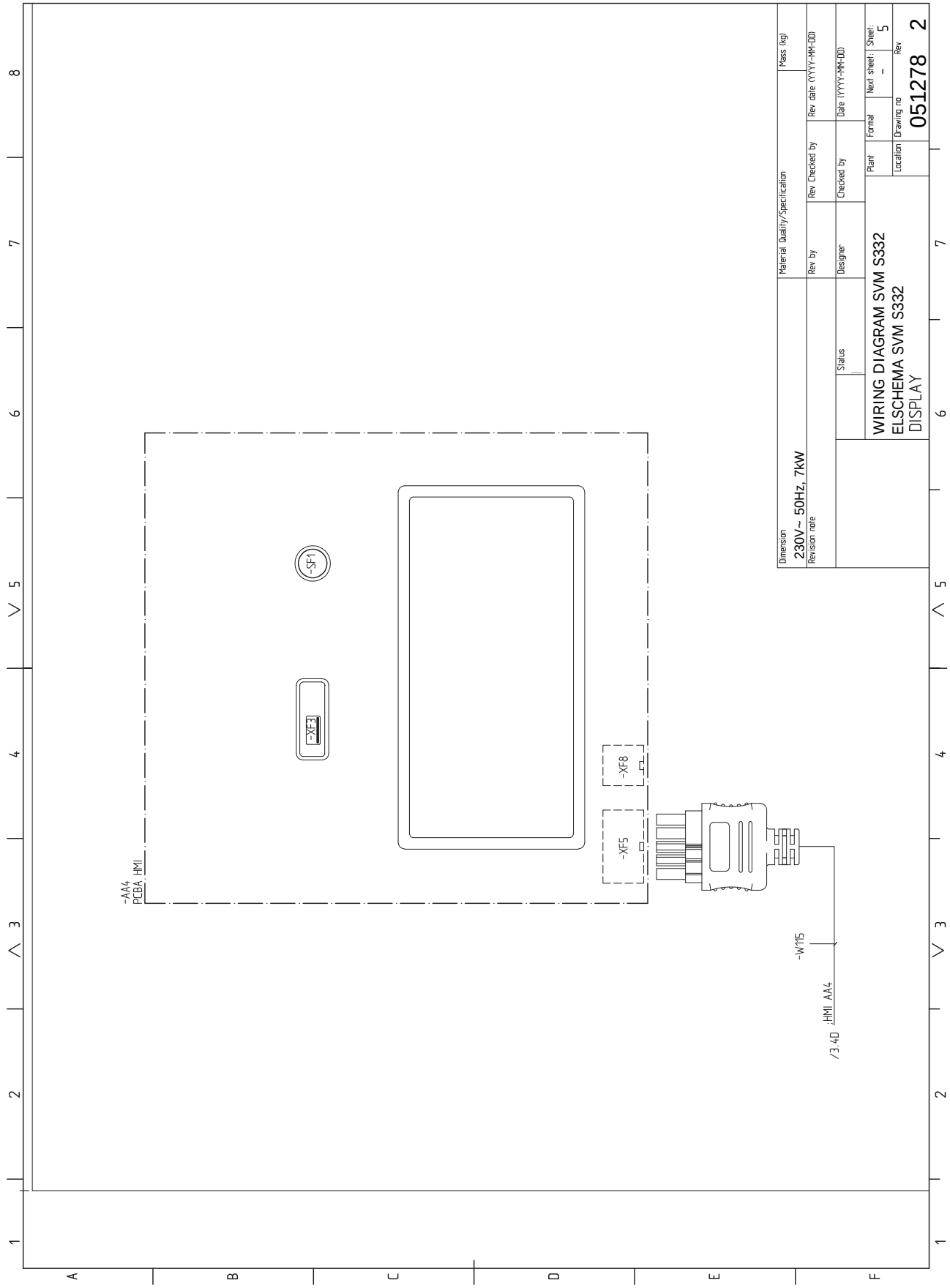
SVM S332, 1X230 V



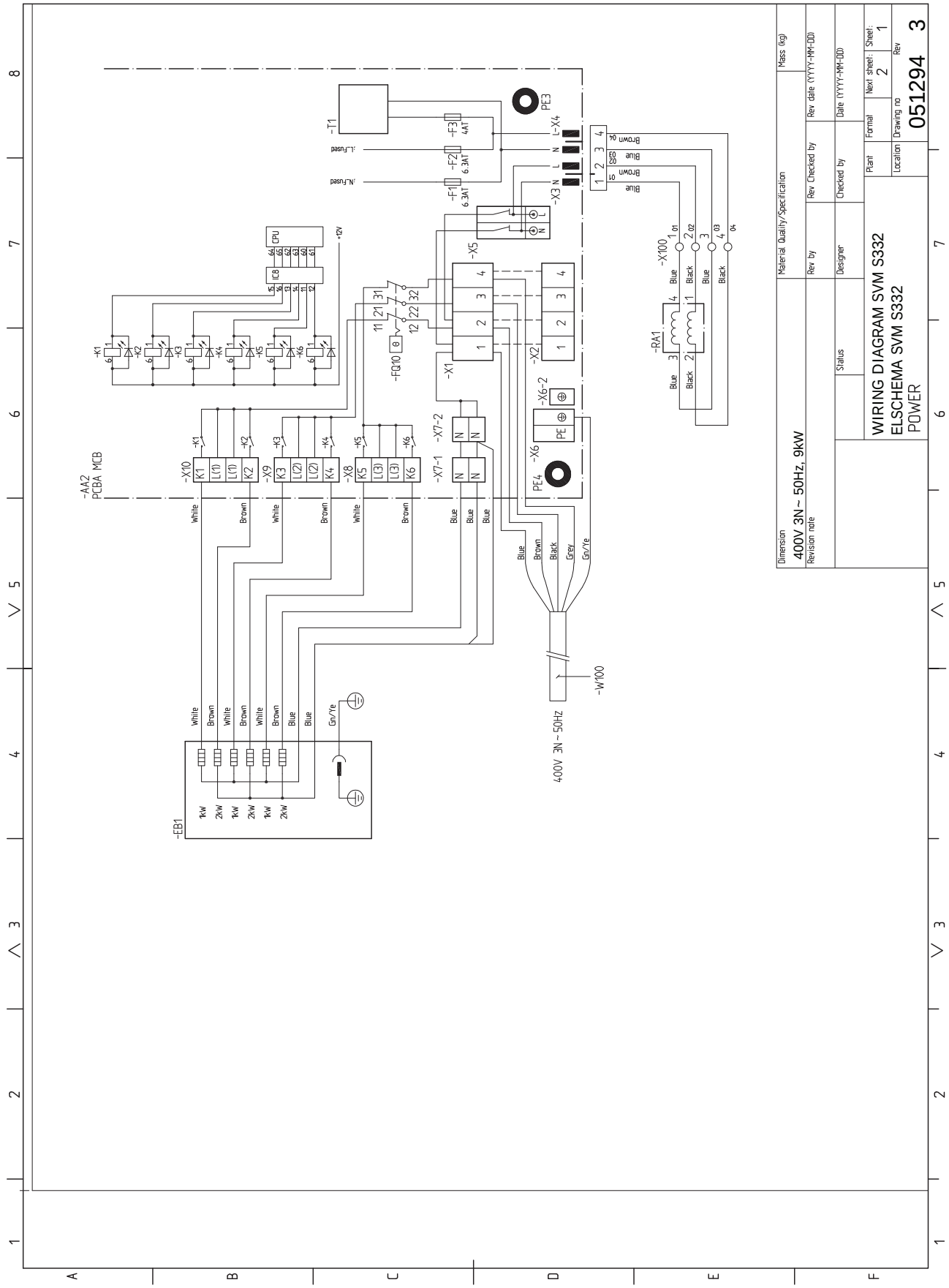

WIRING DIAGRAM SVM S332
ELSCHEMA SVM S332
BASE
051278 2
230V~ 50Hz, 7kW
-AA2
PCBA MCB
PE1
-X40
-X41
-X42
-X43
-X17
-X15
-X14
-X13
-X12
-X11
-K9
-K8
-K7
CPU
+12V
-W121
-W124
-W110
-W103
-W107
-W101
-GP1
-GP8
-QN10
Connect to -AA2-X40
Connect to -AA2-X41
Connect to -AA2-X42
:Lin GP1
:Lin GP8
:AA2-X14
Brown
Blue
Gn/Ye
Black
White
GND
LIN
12V

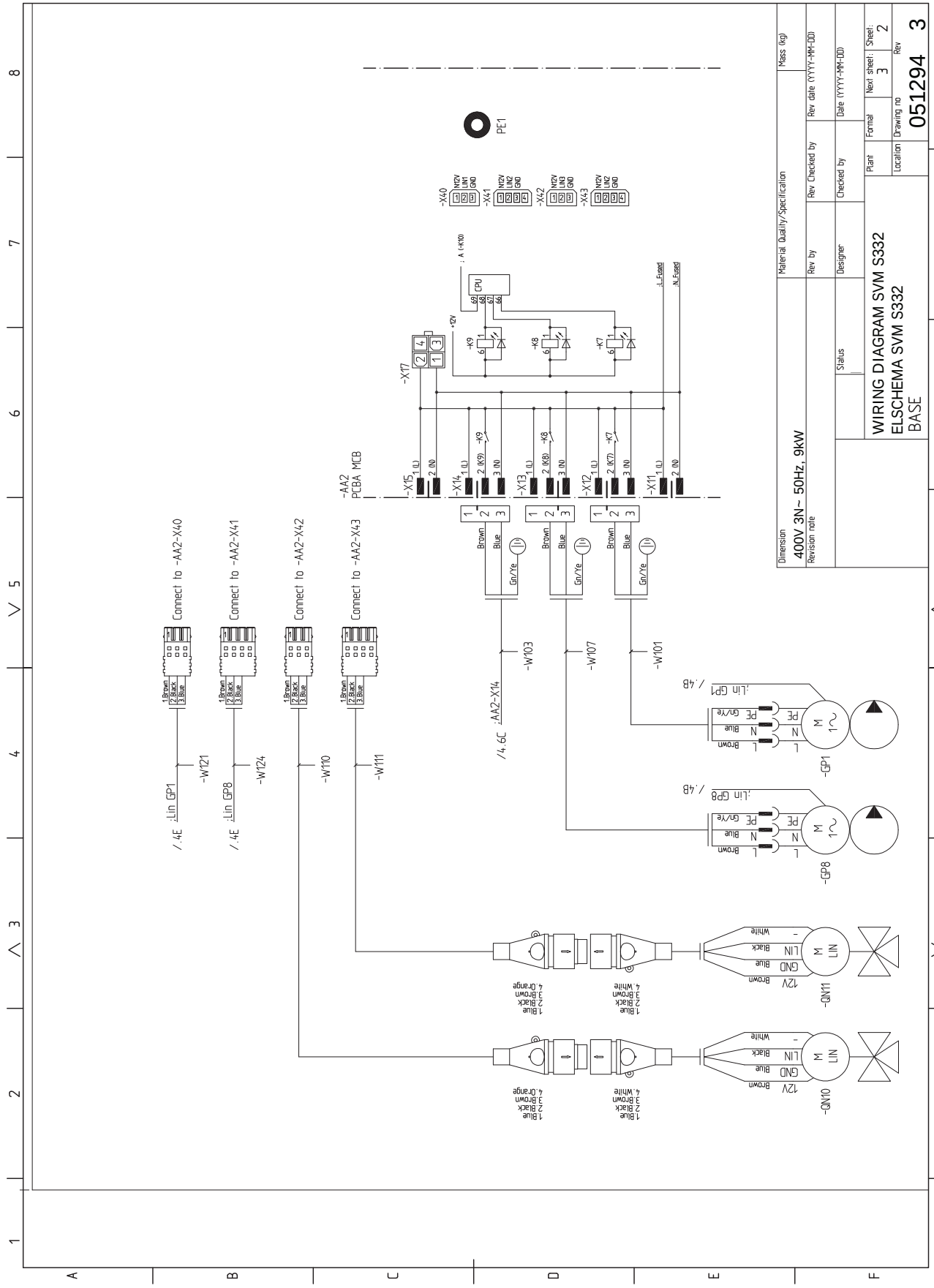

WIRING DIAGRAM SVM S332
ELSCHEMA SVM S332
INPUT
051278 2
230V~ 50Hz, 7kW
-AA2
PCBA MCB
-X23
-X21
-X22
-X24
-X20
-X9
-X8
-X28
-X29
-X30
-X34
-X35
-X27
-X10
-S1
-XF24
-BT163
-BT7
-BT6
-BT2
-BT3
-BT38
-BF4
-W108
-W115
-W116
Internal Flowmeter
Hotwater
-XF24 is connected to -X24.
/5.2F :HMI AA4
/4.2D :AA2-X24

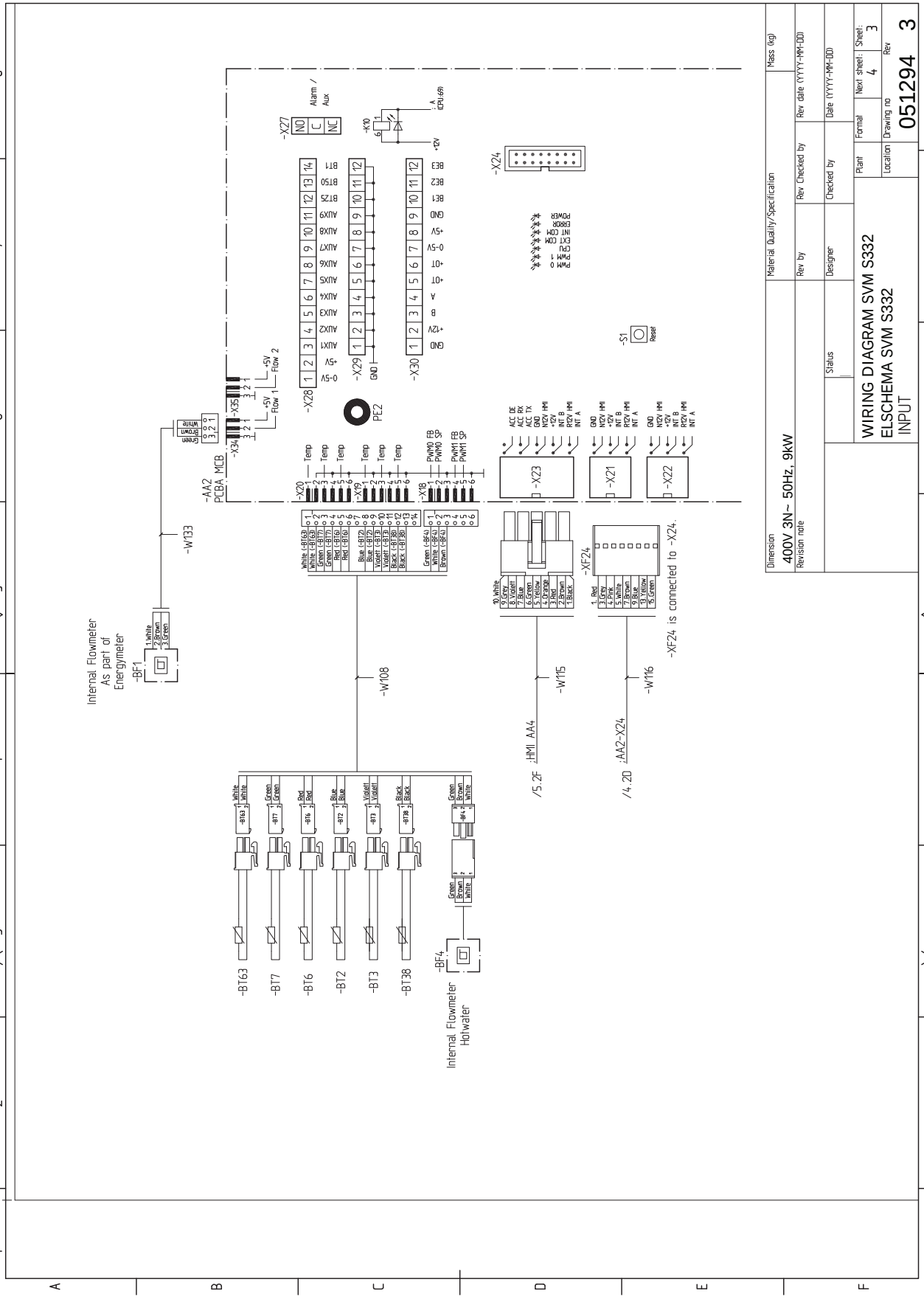

WIRING DIAGRAM SVM S332
ELSCHEMA SVM S332
051278 2
Installation of the RCBO in the related KVR Kit
RCBO FOR KVR KIT 230V ~ 50Hz
RCBO for KVR Kit
-EB1xx Outdoor unit
-TB
-W125
-W116
-W208
-W103
-AA23
-X100
-X2
-X3
-X4
-X5
-X6
-X7
-X1
-F3
-FB1
-EB14 KVR
:AA2-X14 /2.4D
:AA2-X24 /3.4E
-EB1xx -BP4
-EB1xx -EB1xx -EB1xx -BT15 -BT12 -BT13
Dimension 230V~ 50Hz, 7kW
Revision note
Material Quality/Specification
Mass (kg)
Rev by
Rev Checked by
Rev date (YYYY-MM-DD)
Designer
Checked by
Date (YYYY-MM-DD)
Status
Plant
Formal
Next sheet:
Sheet: 4
Location
Drawing no
Rev

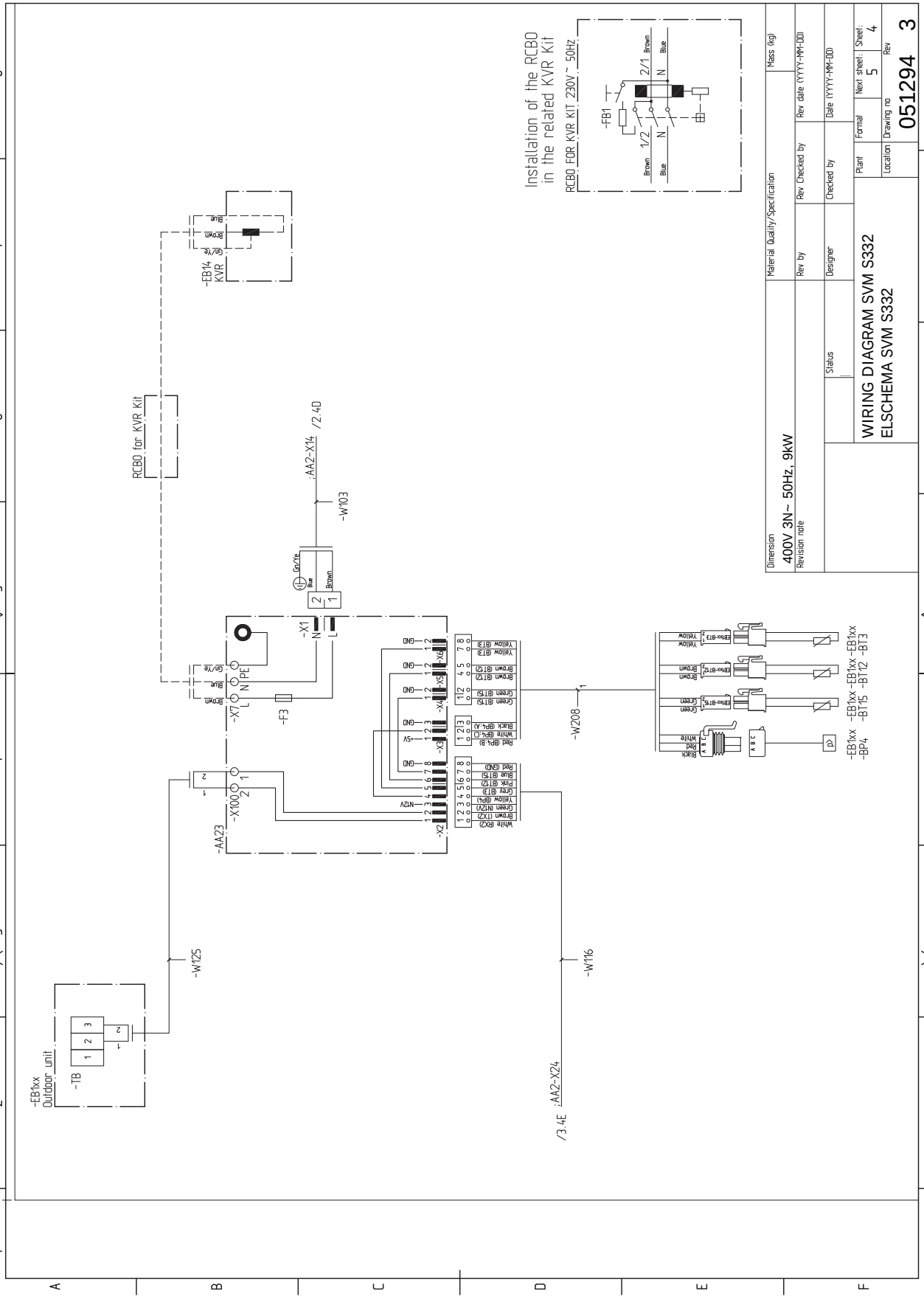

-AA4
PCBA HMI
-SF1
-XF3
-XF8
-XF5
-W115
/3.4D :HMI AA4
Dimension
230V~ 50Hz, 7kW
Revision note
Material Quality/Specification
Rev by
Designer
Status
Rev Checked by
Checked by
Rev date (YYYY-MM-DD)
Date (YYYY-MM-DD)
Mass (kg)
Plant
Format
Next sheet:
Sheet:
5
Location
Drawing no
051278
Rev
2
WIRING DIAGRAM SVM S332
ELSCHEMA SVM S332
DISPLAY

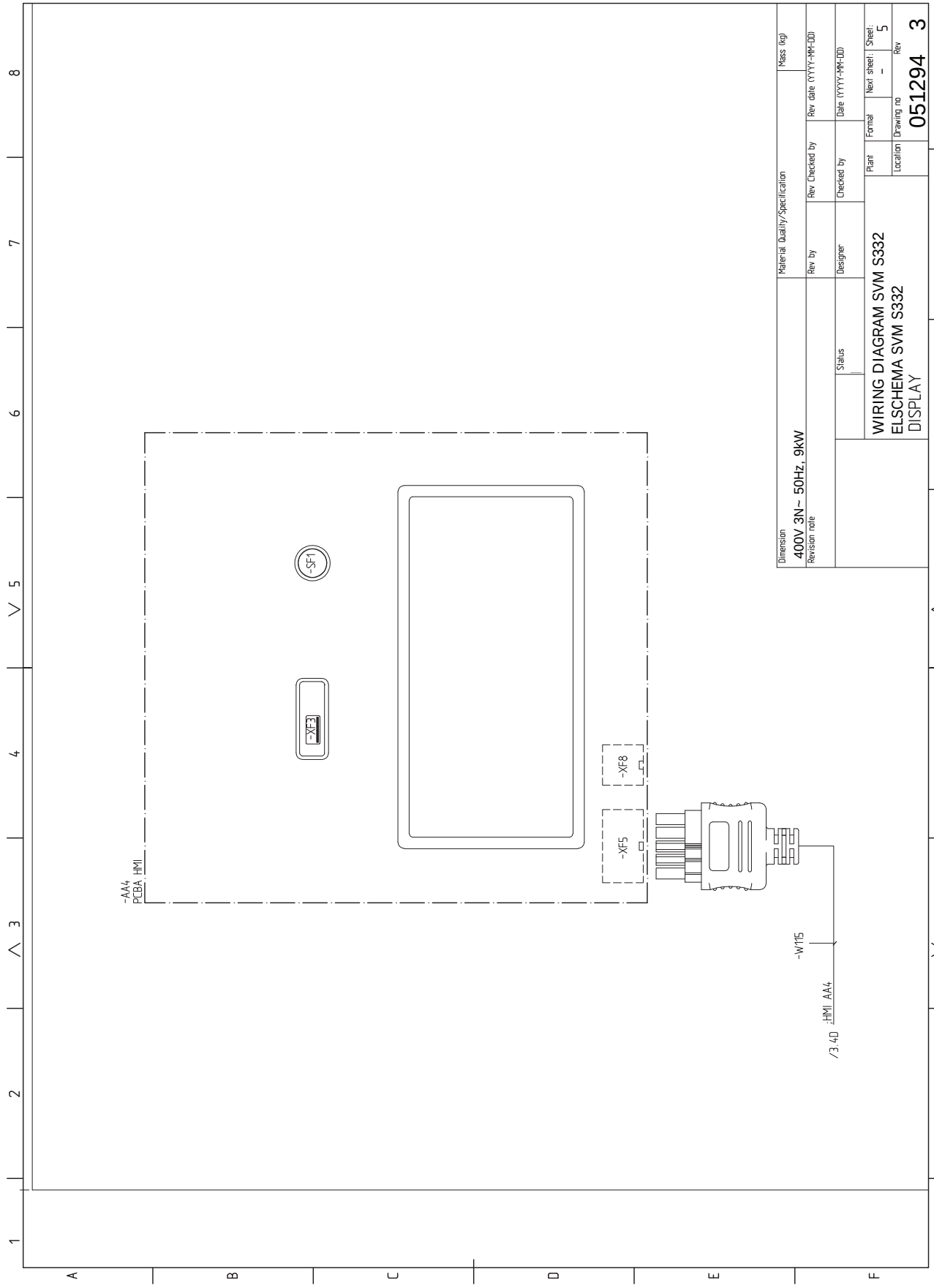
SVM S332, 3X400 V



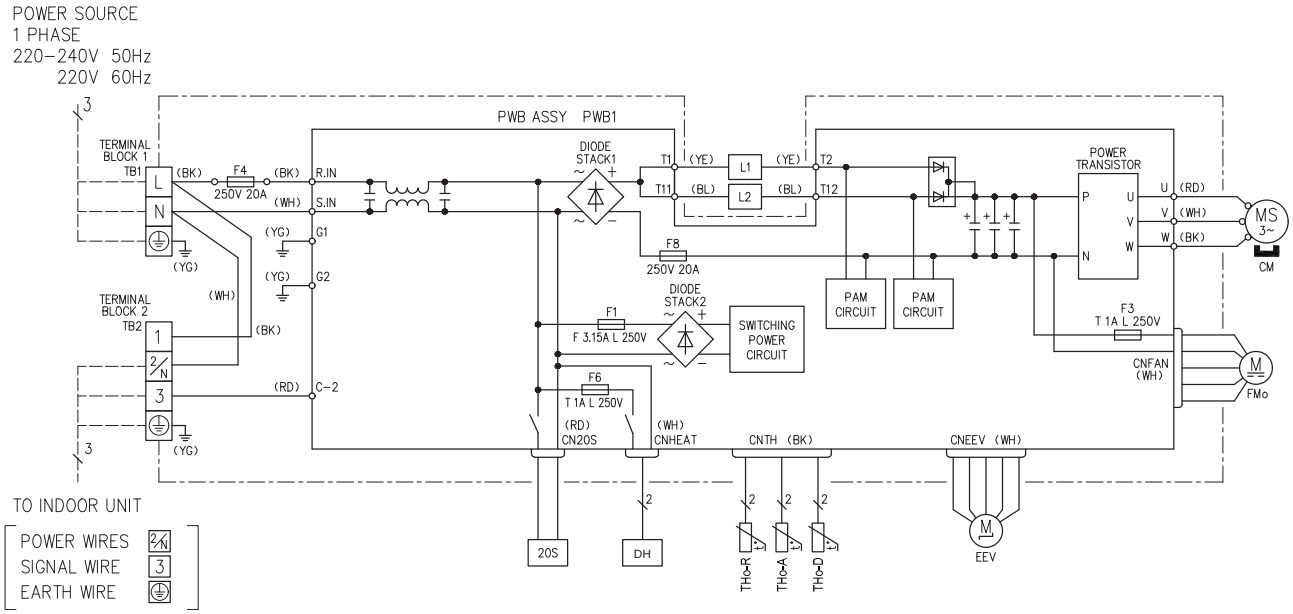

WIRING DIAGRAM SVM S332
ELSCHEMA SVM S332
BASE
051294 3
400V 3N~ 50Hz, 9kW
-AA2
PCBA MCB
PE1
-X40
-X41
-X42
-X43
-X17
-X15
-X14
-X13
-X12
-X11
-K9
-K8
-K7
CPU
+12V
-W121
-W124
-W110
-W111
-W103
-W107
-W101
-GP1
-GP8
-QN10
-QN11
Connect to -AA2-X40
Connect to -AA2-X41
Connect to -AA2-X42
Connect to -AA2-X43
:AA2-X14
:Lin GP1
:Lin GP8
Brown
Blue
Gn/Ye
Black
White
GND
LIN
12V


WIRING DIAGRAM SVM S332
ELSCHEMA SVM S332
INPUT
051294 3
400V 3N~ 50Hz, 9kW
Internal Flowmeter
As part of
Energymeter
-BF1
-W133
-AA2
PCBA MCB
-X34
-X35
-X28
-X29
-X30
-X27
-X10
-X24
-X20
-X9
-X8
-X23
-X21
-X22
-S1
Reset
PE2
-W108
-W115
-W116
-XF24
-XF24 is connected to -X24.
-BT163
-BT17
-BT6
-BT2
-BT3
-BT38
-BF4
Internal Flowmeter
Hotwater
/5.2F :HMI AA4
/4.2D :AA2-X24


WIRING DIAGRAM SVM S332
ELSCHEMA SVM S332
400V 3N~ 50Hz, 9kW
051294 3
Installation of the RCBO in the related KVR Kit
RCBO FOR KVR KIT 230V ~ 50Hz
RCBO for KVR Kit
-EB1xx Outdoor unit
-TB
-W125
-W116
-W208
-W103
-AA23
-X100
-X1
-X2
-X3
-X4
-X5
-X6
-X7
-F3
-FB1
-EB14 KVR
:AA2-X14 /2.4D
:AA2-X24 /3.4E
-EB1xx -BP4
-EB1xx -EB1xx -EB1xx -BT15 -BT12 -BT13

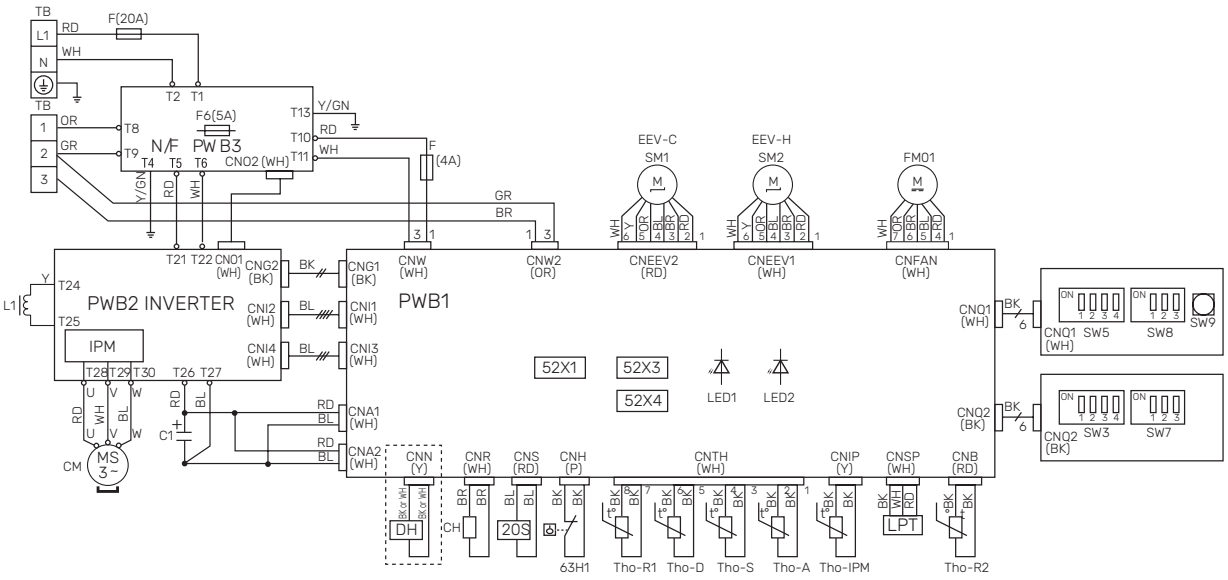

-AA4
PCBA HMI
-SF1
-XF3
-XF8
-XF5
-W115
/3.40 :HMI AA4
Material Quality/Specification
Mass (kg)
Dimension
400V 3N~ 50Hz, 9kW
Revision note
Rev by
Rev Checked by
Rev date (YYYY-MM-DD)
Status
Designer
Checked by
Date (YYYY-MM-DD)
WIRING DIAGRAM SVM S332
ELSCHEMA SVM S332
DISPLAY
Plant
Formal
Next sheet:
Sheet:
5
Location
Drawing no
Rev
051294
3

AMS 20-6



AMS 20-10

230V ~ 50Hz



Designation	Description
20S	Reversing valve
63H1	High pressure switch
C1	Capacitor
CH	Compressor heater
CM	Compressor
CnA~Z	Terminal block
CT	Current sensor
DH	Drip tray heater
F	Fuse
FM01	Fan
L/L1	Induction coil
LED1	Indication lamp (red)
LED2	Indication lamp (green)
LPT	Low-pressure sensor
EEV	Expansion valve
EEV-H	Expansion valve, heating
EEV-C	Expansion valve, cooling
TB	Terminal block, supply voltage and communication
BT28 (Tho-A)	Ambient sensor
Tho-D	Hot gas sensor
Tho-R	Evaporator sensor, out
Tho-R2	Evaporator sensor, in
Tho-S	Suction gas sensor