

Indoor module for air to water split systems NIBE BA-SVM 10-200

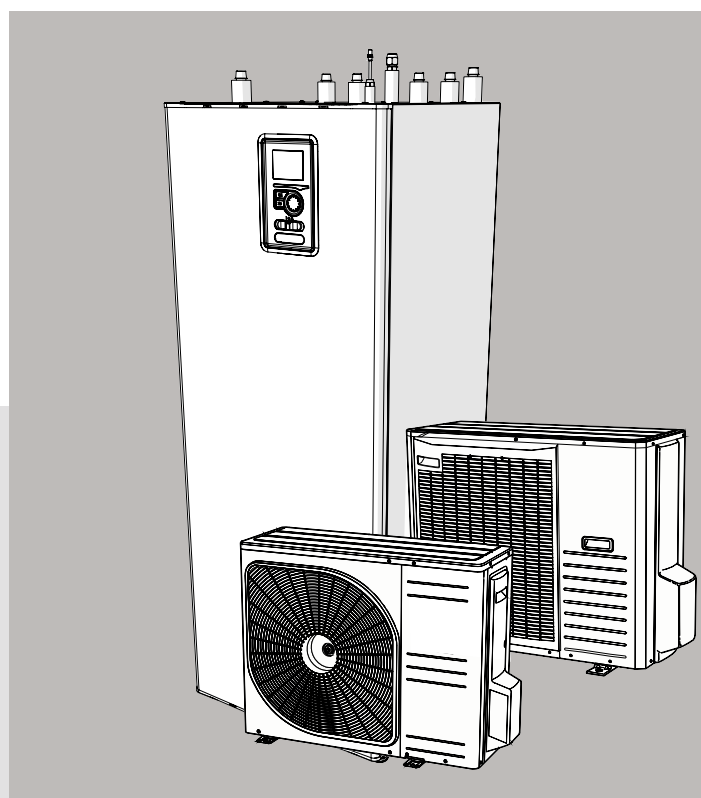


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1 Important information

Safety information

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

This appliance can be used by children aged 8 years and above and persons with reduced physical, sensory or mental capacity or lack of experience and knowledge, if they will be supervised or have received instruction concerning safe use of the appliance, and if they understand the danger involved in its use. Children must not play with the appliance. Cleaning and basic maintenance of the appliance must not be carried out by children unsupervised.

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Symbols



CAUTION

This symbol indicates danger to the appliance or person.



TIP

This symbol indicates tips that will make it easier to operate the product.



NOTE

This symbol indicates important information to note while operating or maintaining the appliance.

Marking

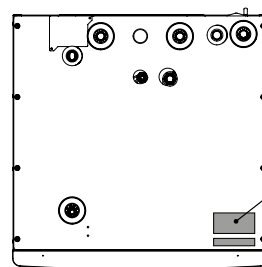
BA-SVM 10-200 is CE marked and has an IP21 protection rating.

The CE mark confirms that NIBE has ensured that the product conforms to all applicable regulations specified by the relevant EU directives. The CE mark is mandatory for most products sold in the EU, regardless of where they are made.

IP21 means that objects with a diameter greater than or equal to 12.5 mm cannot penetrate and cause damage and that the product is protected against vertically falling drops of water.

Serial number

The serial number is located at the bottom of the identification plate, on the top cover BA-SVM 10-200 and consists of 14 digits.



Serial number
BA-SVM
(PF3)

Waste disposal



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

Do not dispose of used products with normal household waste. It must be transported to a special

waste disposal facility or to a vendor who provides this type of service.

Improper disposal of the product by the user may result in administrative penalties in accordance with the applicable legislation.

Inspection of the installation

The climate system must be inspected before commissioning. The inspection must be carried out by a suitably qualified person. In addition, fill in the page for the installation data in the User Manual.

Checklist

	Description	Notes	Signature	Date
	Heating medium			
	Flushing the system			
	System vented			
	Expansion vessel			
	Particulate filter			
	Safety valve			
	Shut-off valves			
	Pressure in the climate system			
	Connected according to outline diagram			
	Hot water			
	Shut-off valves			
	Mixing valve			
	Safety valve			
	Electric power supply			
	Connecting communication			
	Circuit fuses			
	Fuses, indoor unit			
	Mains fuse			
	Outdoor temperature sensor			
	Room sensor			
	Current sensor			
	Safety circuit breaker			
	Residual-current device			
	Setting the thermostat to emergency mode			
	Miscellaneous			
	Docked to			

2 Delivery and handling

Available models

BA-SVM 10-200 units include the following separate models:

- BA-SVM 10-200/6 E - unit dedicated for use with AMS 10-6, enamelled tank equipped with a titanium anode,
- BA-SVM 10-200/12 E - unit dedicated for use with AMS 10-8 and AMS 10-12, enamelled tank equipped with a titanium anode,
- BA-SVM 10-200/6 E EM - unit dedicated for use with AMS 10-6, enamelled tank equipped with a titanium anode, and energy meter,
- BA-SVM 10-200/12 E EM - unit dedicated for use with AMS 10-8 and AMS 10-12, enamelled tank equipped with a titanium anode and energy meter,
- BA-SVM 10-200/6 R - unit dedicated for use with AMS 10-6, stainless steel tank,
- BA-SVM 10-200/12 R - unit dedicated for use with AMS 10-8 and AMS 10-12, stainless steel tank.

Compatibility

The BA-SVM 10-200 indoor unit can be used with Split type outdoor units. The compatible NIBE SPLIT heat pumps are:

Symbol	Application
AMS 10-6	BA-SVM 10-200/6
AMS 10-8	BA-SVM 10-200/12
AMS 10-12	

You can find more information on NIBE SPLIT heat pumps at www.nibe.eu and in the relevant instructions for installation and use.

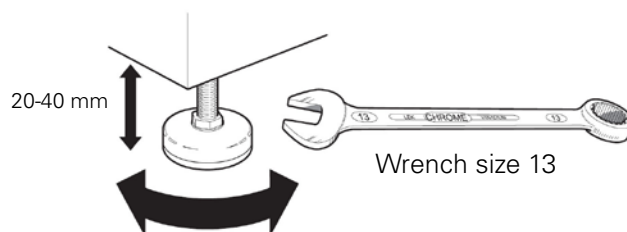
In the Accessories section, you can check the list of accessories that can be used with BA-SVM 10-200.

Transport

The BA-SVM 10-200 indoor unit should be transported and stored vertically in a dry place. However, BA-SVM 10-200 may be carefully laid on its back when being moved into a building.

Assembly

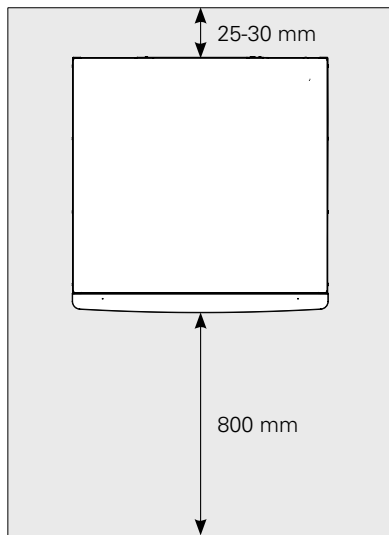
- BA-SVM 10-200 must be placed on a solid, water-proof surface that will support the weight of the filled indoor unit. Use the adjustable feet of the indoor unit for horizontal and stable positioning of the appliance.



- Since BA-SVM 10-200 has condensation water drainage, the set-up location of the indoor unit should be equipped with a floor drain leading to the sewage system.

Installation location

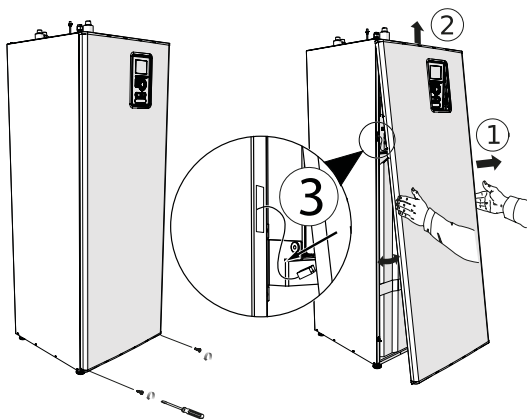
Leave a free space of 800 mm in front of the indoor unit. All servicing of BA-SVM 10-200 can be carried out from the front.



CAUTION

If connecting an additional heat source, leave sufficient space behind the appliance for problem-free completion of the connections and future maintenance.

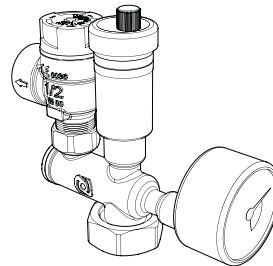
Removing the covers



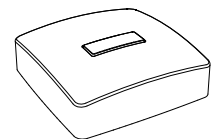
1. Remove the screws from the lower edge of the front cover.
2. Tilt back the cover at the lower edge paying special attention not to damage the connecting cables, then remove the front cover by lifting it upwards.
3. Disconnect the cable connecting the front cover to the unit.

Supplied components

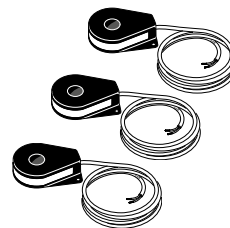
- Safety group (1 pc.)
- Outdoor / indoor temperature sensor (2 pcs)
- Current sensor (3 pcs.)
- 230V connection jumper (1 pc.)
- Built-in energy meter (BA-SVM 10-200 E EM only)
- Installation and user manual



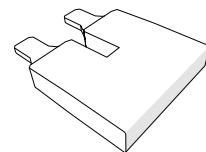
Safety group with safety valve (3 bar), pressure gauge and automatic air vent (1 pc.)



Temperature sensor
Outdoor and indoor
(2 pcs)
Connection p.27



Current sensor (3 pcs)



230V connection
jumper (1 pc.)

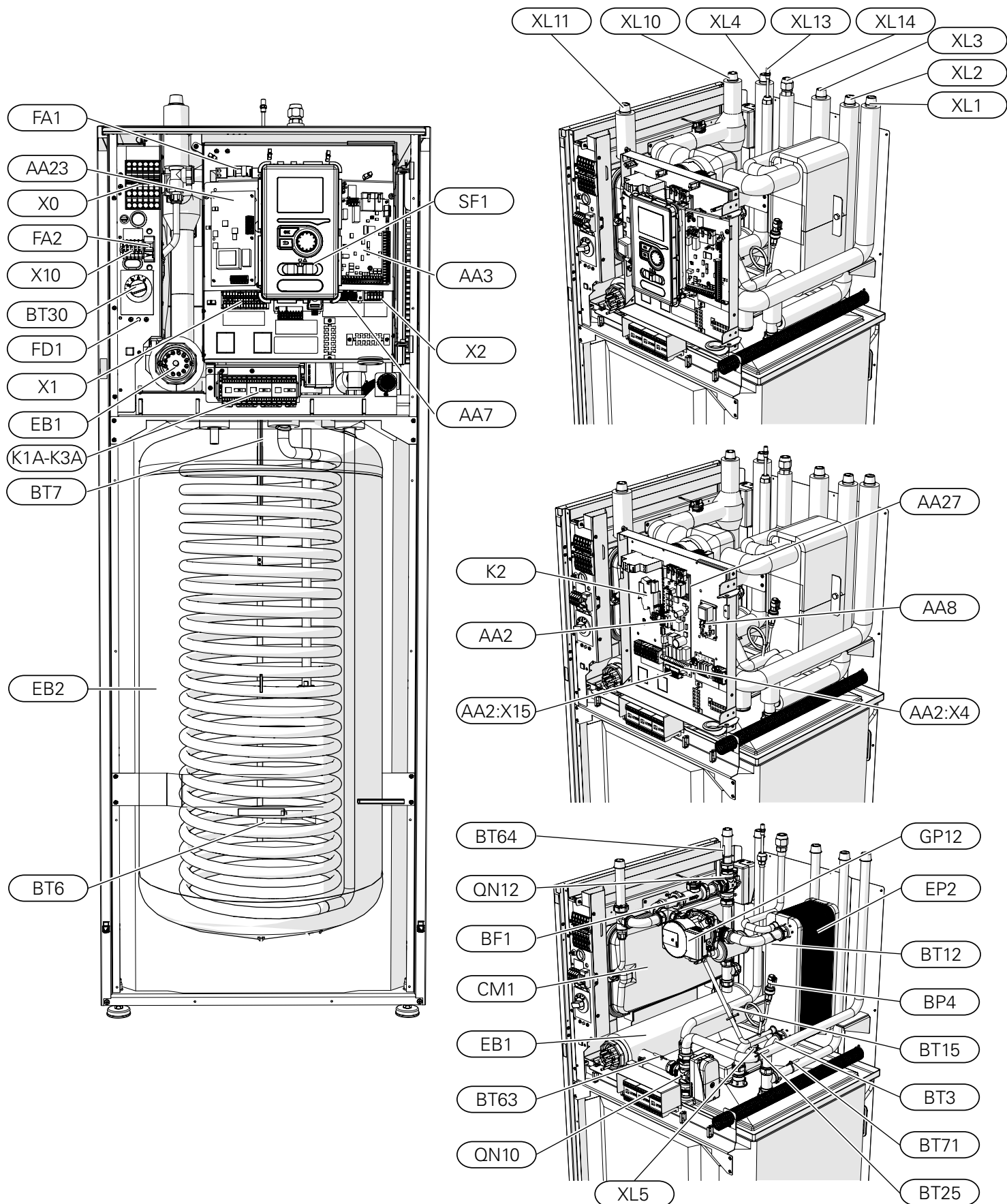


CAUTION

The rated opening pressure of the safety valve is 3 bar.

3 Design of the indoor unit

BA-SVM10-200



Pipe connections

XL1	Connection, heating medium, supply
XL2	Connection, heating medium, return
XL3	Connection, cold water
XL4	Connection, hot water
XL5	Connection, hot water circulation
XL10	Connection, cooling operation
XL11	Connection, safety assembly, pressure gauge
XL13	Connection, liquid refrigerant
XL14	Connection, gas refrigerant

HVAC components

CM1	Expansion vessel, closed
QN10	Reversing valve, hot water/climate system
QN12	Reversing valve, heating system/cooling system
GP12	Circulation pump
EP2	Heat exchanger

Sensors

BP4	Pressure sensor, high pressure
BT3	Temp. sensor, heating medium return
BT6	Temp. sensor, hot water charging
BT7	Temp. sensor, hot water heater top
BT12	Temp. sensor, condenser out
BT15	Temp. sensor, liquid line
BT25	Temp. sensor, heating medium supply
BT63	Temp. sensor, supply heating medium behind immersion heater
BT64	Temp. sensor, cooling operation system supply
BT71	Temp. sensor, heating medium return

Electrical components

X0	Terminal block- 400V~
X1	Terminal block- 230V~
X2	Terminal block- 230V~
X10	Terminal block- 230V~
AA2:X4	Terminal block- low voltage
AA2:X15	Terminal block- low voltage
K1A-K3A	Contactor for immersion heater
K2	Alarm relay
BT30	Standby mode thermostat
AA2	Main board
AA3	Sensor board
AA23	Communication board
AA7	Relay board
AA8	Titanium anode board (Does not apply to BA-SVM 10-200 R)
AA27	Relay board
FD1	Thermal circuit breaker
FA1	Miniature circuit breaker (protecting the indoor unit)
FA2	Miniature circuit breaker (protecting the outdoor unit)
EB1	Electric additional heat

Miscellaneous

BF1	Energy meter (BA-SVM 10-200 E EM only)
SF1	Controller switch
EB2	Hot water tank

4 Pipe connections

General information

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

The pipe dimensions should not be less than the recommended pipe diameter according to the table below. However, in order to achieve the recommended flow, each installation must be dimensioned individually.

Minimum system flow

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

Air/water heat pump	Minimum flow during defrosting (100% pump capacity [l/s])	Minimum recommended pipe dimension (DN)	Minimum recommended pipe dimension (mm)
BA-SVM 10-200/6 + AMS 10-6	0,19	20	22
BA-SVM 10-200/12 + AMS 10-8	0,19	20	22
BA-SVM 10-200/12 + AMS 10-12	0,29	20	22



CAUTION

An incorrectly dimensioned climate system can result in damage to the appliance and lead to malfunctions.

The system can be used with a low- and medium-temperature climate system. The recommended temperature of the heating medium at the dimensioned outdoor temperature DOT must not exceed 55°C on the supply and 45°C on the return circulation from the climate system. BA-SVM 10-200 can reach up to 65°C when using the electric additional heat or another peak heat source.

An overflow pipe must be routed from the safety valve to a suitable drain. The entire length of the overflow pipe must be inclined towards the floor drain to prevent water pockets and must also be frost-proof. In order to reach maximum system efficiency, we recommend installing BA-SVM 10-200 as close as possible to the outdoor heat pump.

The BA-SVM 10-200 unit is not equipped with a shut-off valve for the climate system. In order to facilitate future servicing, the shut-off valves should be installed on the outside of the indoor unit.

The BA-SVM 10-200 unit can be docked to the central heating, cooling operation and hot water systems. It is absolutely necessary to install the supplied safety assembly on connection XL11.



CAUTION

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



CAUTION

In the installation before the BA-SVM 10-200, a particulate filter should be used, dedicated for heating installations. The filter will protect the unit against pollution.



CAUTION

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



CAUTION

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



CAUTION

Until the system's heating/cooling circuit has been filled with heating medium, the switch (SF1) in the controller must not be set to "I" or „Δ“. If you do not comply with the above instructions, many components of the BA-SVM 10-200 unit may be damaged.

Expansion vessel

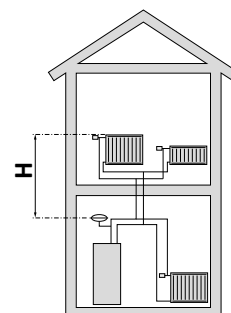
The expansion vessel's volume must be at least 5% of the system's total volume. BA-SVM 10-200 appliances have been equipped with an expansion vessel with a 10l volume. If the capacity of the built-in expansion vessel is insufficient, an additional expansion vessel meeting the above requirements should be added to the installation.

Table with examples:

Total volume [l] (indoor unit and climate system)	Volume [l], expansion vessel
500	10+15
750	10+25
1000	10+40

BA-SVM 10-200 is equipped with an expansion vessel with a 10l capacity. The pressure setting in the level vessel should be set according to the maximum height (H) between the vessel and the highest-positioned radiator, see drawing.

An initial pressure of 0.5 bar (5 mvp) means a maximum permissible height difference of 5 m. The maximum volume of the system without a boiler is 220 l at the above initial pressure.



If the standard initial pressure in the expansion vessel is too low, this can be increased by filling it via the installed valve. The expansion vessel's standard initial pressure must be entered in the checklist on page 5.


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

Buffer vessel

The heat pump installation requires an appropriate volume of heating medium (approx. 10l/kW heat pump power) and a minimum, undisturbed flow.


In case of an insufficient amount of heating medium in the installation, an additional buffer vessel must be used, which will ensure adequate system volume, see subsection "Minimum climate system volumes".

An insufficient flow in the central heating system will cause malfunction of the heat pump installation and could lead to serious damage of the product.



CAUTION

In order to obtain the minimum undisturbed flow in the climate system, use the appropriate hydraulic solutions (e.g. relief valve, low loss header, parallel buffer and/or open heating loops). Remember to always maintain the minimum required flow in the system - see the subsection "Minimum system flow".



NOTE

It is recommended to have an expansion vessel in the hot water system. However, it is required to install a safety valve with the required opening pressure.

Minimum climate system volumes

AMS 10	6	8	12
Minimum climate system volume during heating/cooling	50l	80l	100l

System diagram


The BA-SVM 10-200 indoor unit is equipped with a storage tank with a hot water coil, expansion vessel, safety group, electric additional heat, reversing valves, plate heat exchanger, energy meter, electronic circulation pump and controller. Combined together with the NIBE SPLIT (AMS 10) outdoor air heat pump unit, it forms a complete climate system.

The AMS 10 outdoor unit supplies thermal energy for heating domestic water, powering the climate system, heating swimming pools and cooling operation, using free energy contained in the air outside, working efficiently in the low temperature range, as low as -20°C.

The connection of the outdoor unit and the indoor unit BA-SVM 10-200, with a system of pipes filled with refrigerant, protects the connection against freezing in the event of interruptions in the electric power supply to appliances. The system's operations are controlled using an advanced controller.


The control mechanism of BA-SVM 10-200 allows for two cooling operation systems to be used:

- 2-pipe cooling system,
- 4-pipe cooling system.



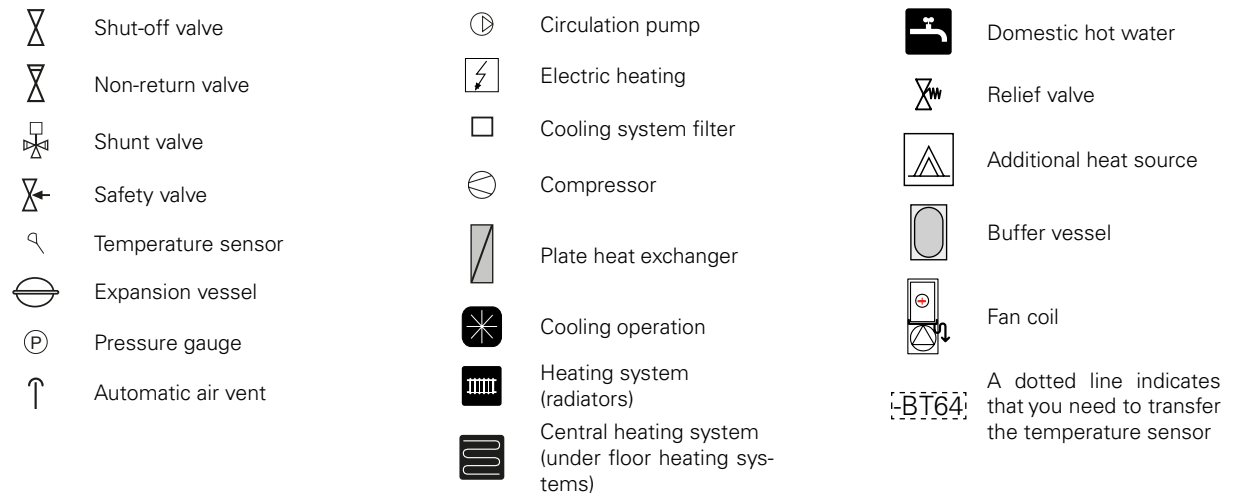
NOTE

BA-SVM is equipped with all temperature sensors as standard. In some system layouts, the sensors must be transferred to other parts of the system. For location of the sensors, see the relevant point on docking the system.



NOTE

In the event that the water volume of the central heating system is increased using a buffer vessel, you will need to check the system volume and possibly increase the volume of the existing expansion vessel.



Basic diagram

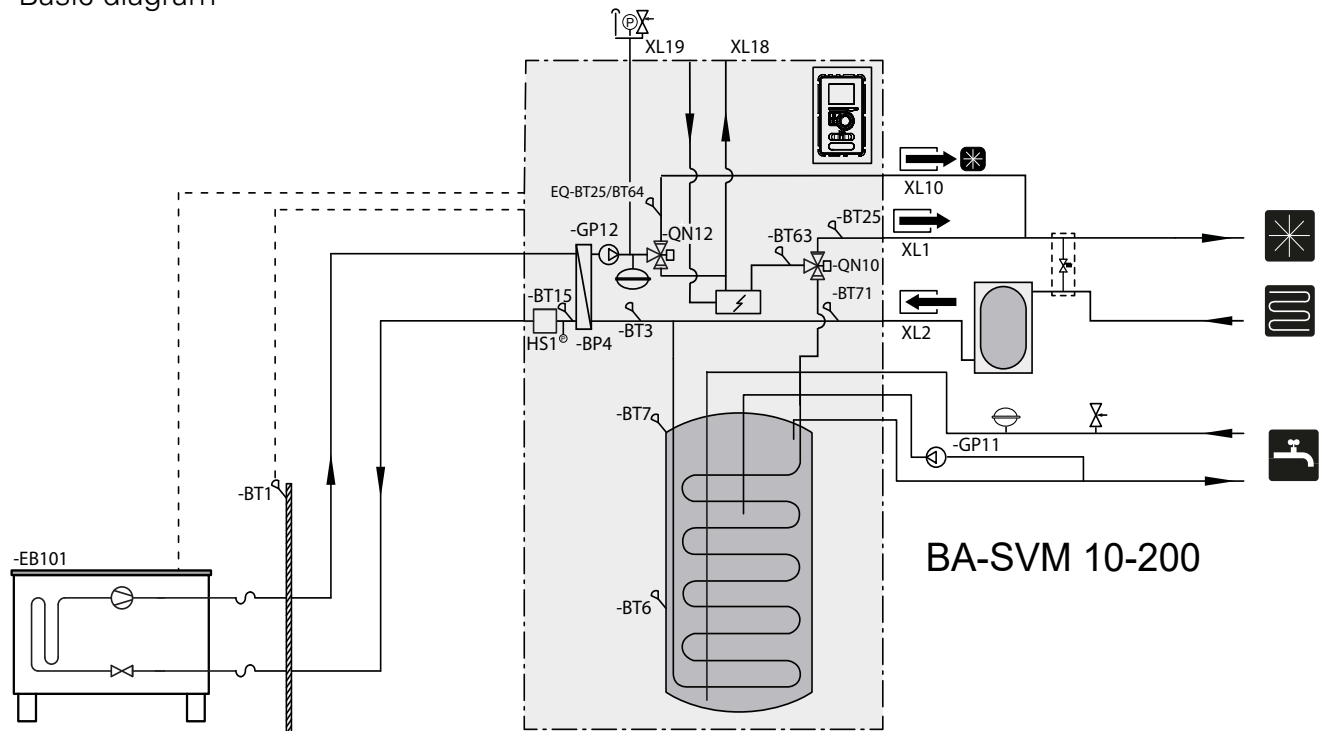
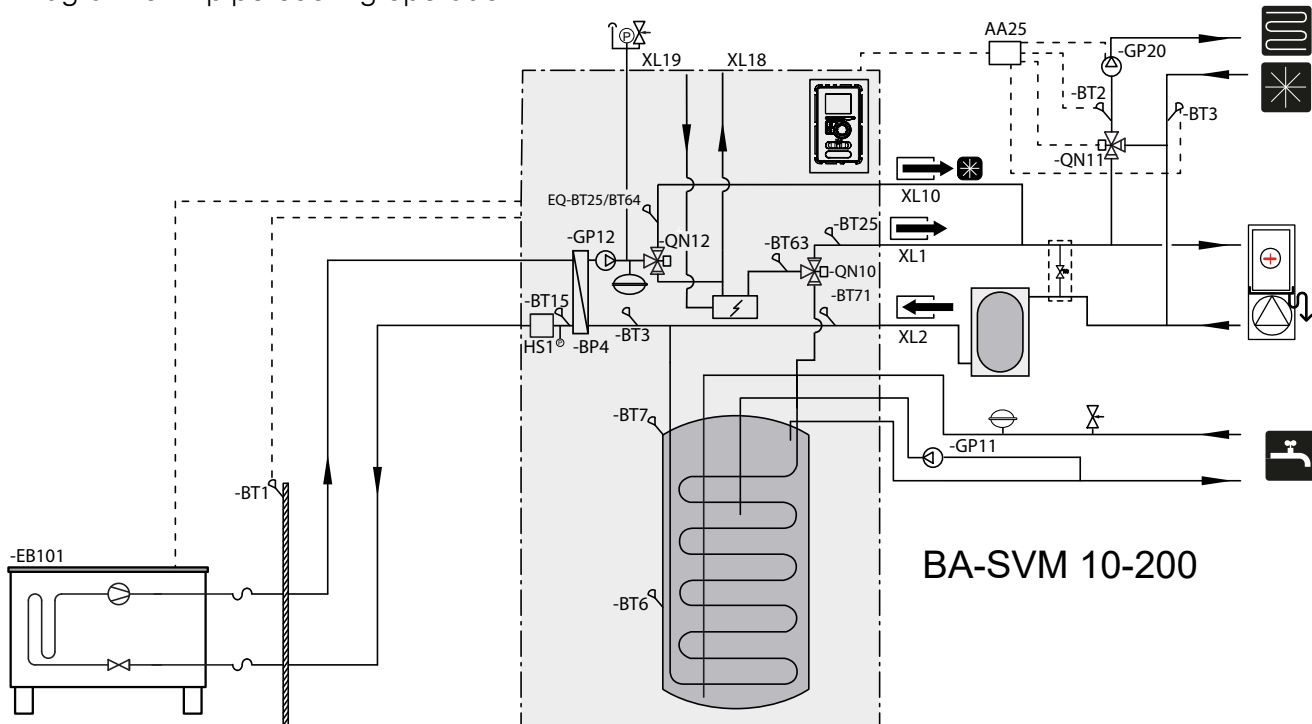


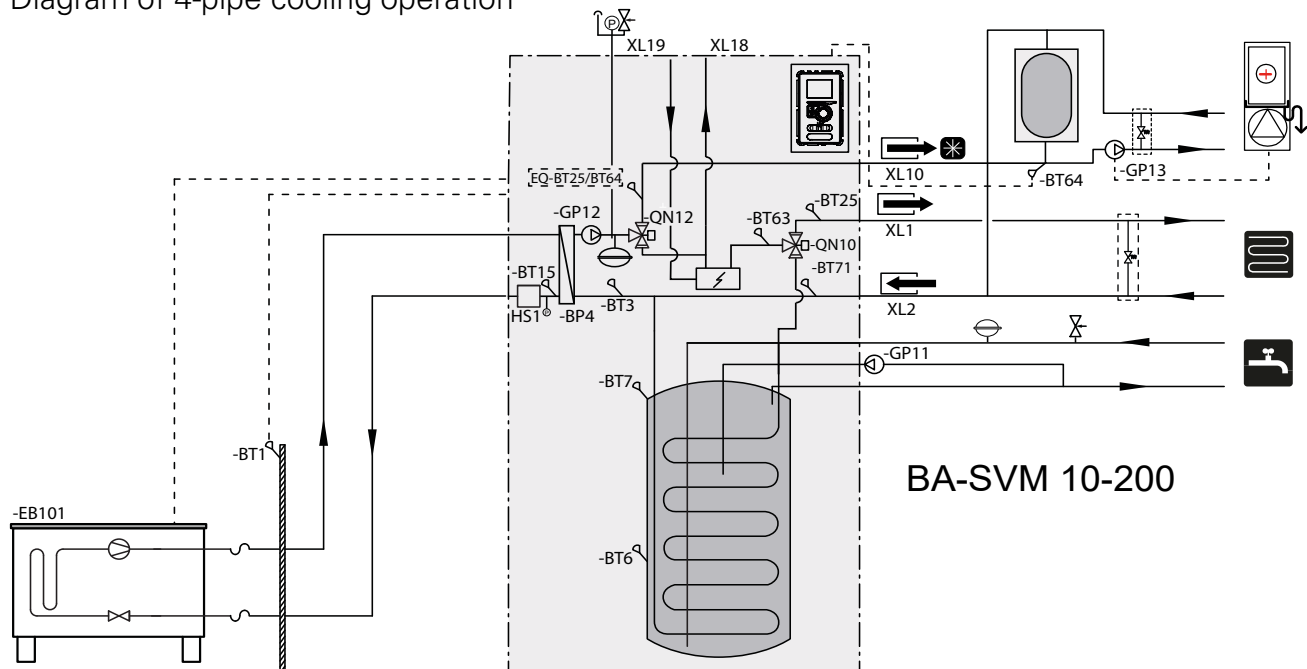
Diagram of 2-pipe cooling operation



The operating principle of the 2-pipe system is to use the same installation for cooling operation as for heating (Diagram of 2-pipe heating operation). In the 2-pipe system, the control mechanism operates

all components of the system i.e. GP10, expansion modules (additional heating/cooling circuits) etc. Selection of the 2-pipe system can be found in the SERVICE section, menu 5.2.4.

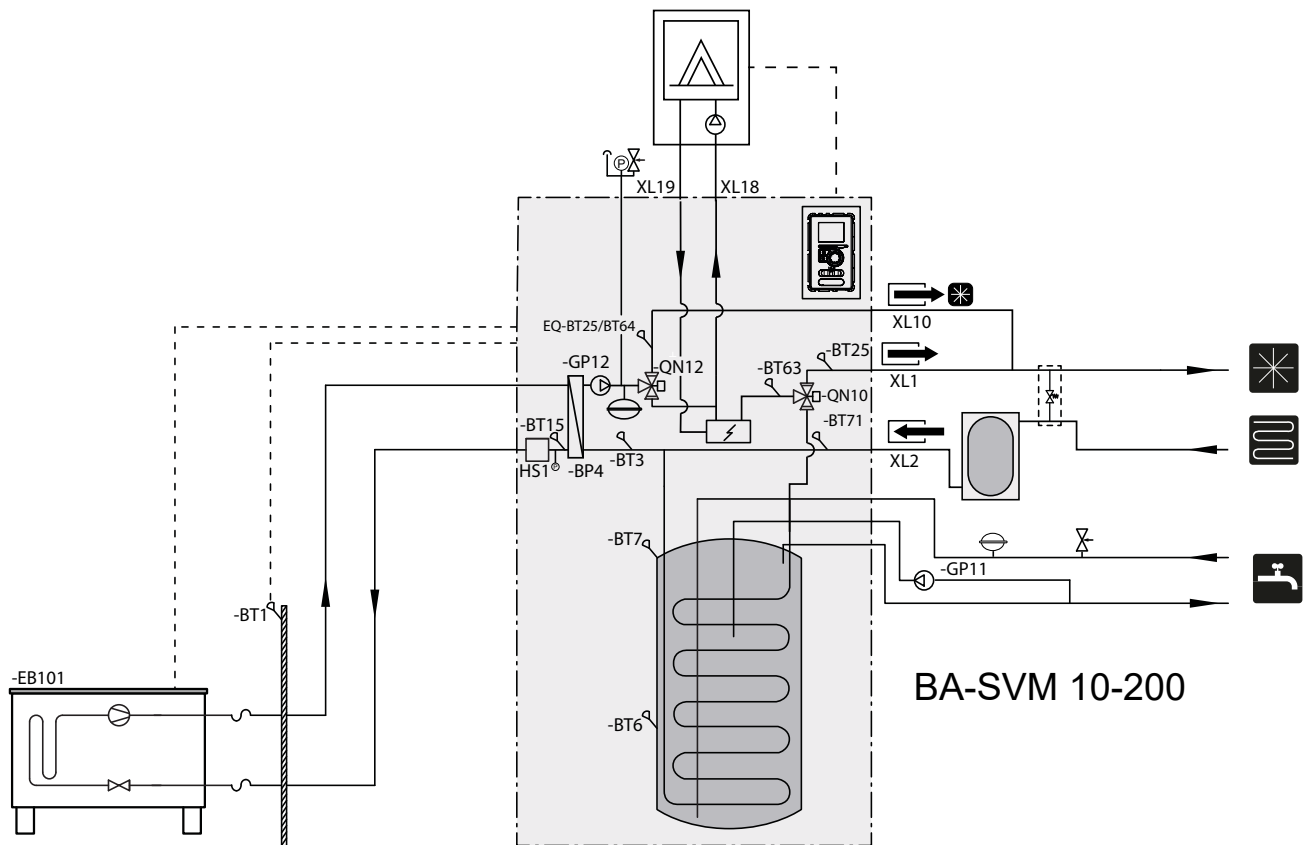
Diagram of 4-pipe cooling operation



The operating principle of the 4-pipe system is to use separate heating and cooling circuits. In the 4-pipe system, a cooling tank is required. The BT64 sensor should be placed in the buffer vessel or on the cooling flow

pipeline. BT64 is connected at the AUX inputs. Selection of the 4-pipe system can be found in the SERVICE section, menu 5.2.4.

Diagram showing connection of an additional heat source



NOTE

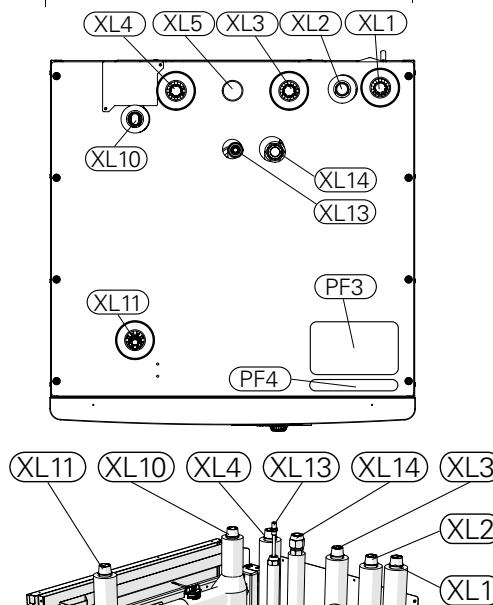
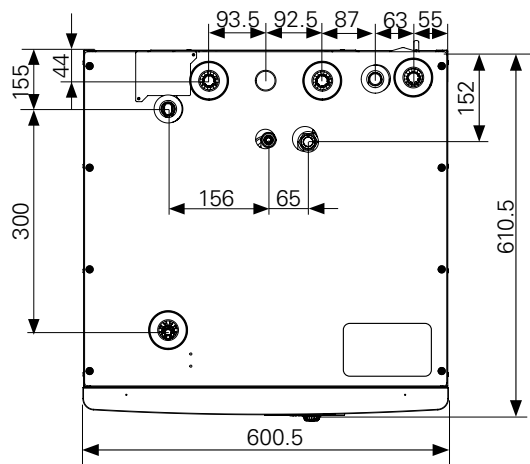
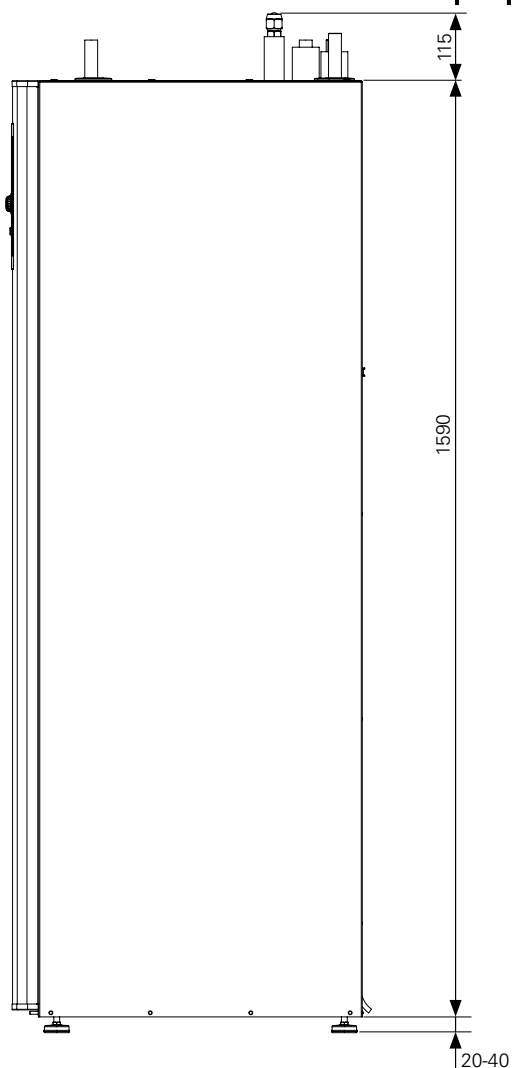
The maximum recommended power of the additional heat source cannot exceed 15kW.

- It is recommended that you install the BA-SVM 10-200 unit in a room which is equipped with a floor drain and protected against freezing.
- The ground should be of a sufficient load capacity, preferably concrete.
- The BA-SVM 10-200 unit must be positioned with its back against a building wall. The device should not be placed against the walls of rooms in use where noise could be a problem.
- The appliance can be levelled using the adjustable feet.
- Route pipes so they are not adjacent to the wall of a bedroom or living room where noise could be a problem.
- Ensure that there is approx. 800 mm free space in front of and 500 mm above the appliance to facilitate any future servicing.

Recommended order of assembly

1. Dock the BA-SVM 10-200 unit to the central heating system as well as the cold and hot water pipelines.
2. Install refrigerant pipes.
3. Connect the current sensors, outdoor temperature sensor, the lines between BA-SVM 10-200 and AMS 10, as well as the communication and power supply.
4. Connect the electric power supply (230V or 400V) to the BA-SVM 10-200 unit.
5. Proceed according to the commissioning instructions in the section Commissioning and adjusting.

Dimensions and pipe connections

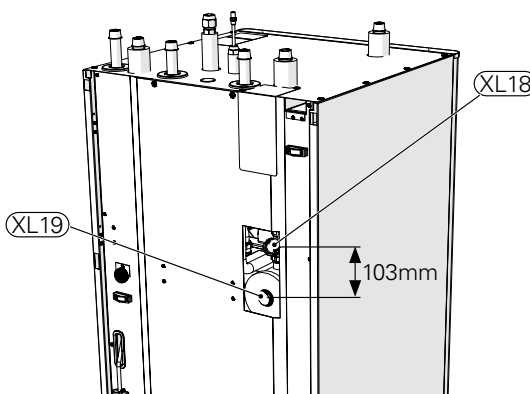


Pipe connections

- XL1 Connection, heating medium supply Ø22 mm
- XL2 Connection, heating medium return Ø22 mm
- XL3 Connection, cold water Ø22 mm
- XL4 Connection, hot water Ø22 mm
- XL5 Conduit to hot water circulation connection Ø15 mm
- XL10 Connection, cooling operation Ø22 mm
- XL11 Connection, safety assembly Ø22 mm, pressure gauge
- XL13 Liquid refrigerant
Connection 1/4" (BA-SVM 10-200/6)
Connection 3/8" (BA-SVM 10-200/12)
- XL14 Gas refrigerant
Connection 1/2" (BA-SVM 10-200/6)
Connection 5/8" (BA-SVM 10-200/12)
- XL 18 Connection, return to add. heat source Ø22 mm
- XL 19 Connection, supply from add. heat source Ø22 mm

Other information

- PF3 BA-SVM serial number plate
- PF4 Software serial number plate



Docking the indoor unit

Docking the climate system

The pipe connections of the climate system are made from the top of the appliance.

- All required safety devices and shut-off valves must be fitted as close to the BA-SVM 10-200 unit as possible.
- Vent valves must be installed where necessary.
- The safety valve with the pressure gauge and air vent on the central heating circuit, as well as the safety valve on the hot water system must be fitted to the appropriate connections XL 11 and XL 3. To prevent air pockets from forming, the overflow pipe must be inclined in its entire length from the safety valve and must also be frost proof.
- When connecting to a system with thermostatic valves on all radiators/underfloor heating pipes, to ensure the proper flow and the proper heating medium volume, install a buffer vessel and possibly a relief valve. See subsection "Minimum system flow".



CAUTION

The term "climate system" which is used in this installation and user manual signifies heating and cooling operation systems that are supplied with heat or cold using heating or cooling medium from the BA-SVM 10-200 unit, for heating or cooling purposes.

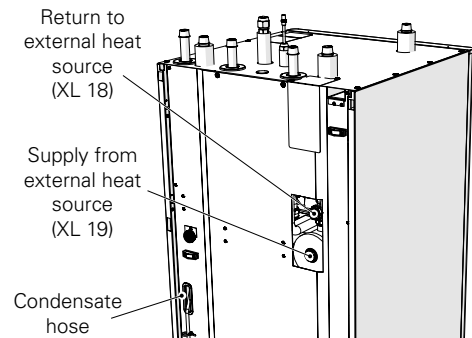


NOTE

It is absolutely necessary for the appropriate safety valve to be fitted directly on the cold water supply pipe to the HW tank, to protect the tank against an excessive pressure increase.

Connection of external heat source

An external heat source with a maximum power of 15kW, e.g. a gas or oil boiler, can be connected to the back of the BA-SVM 10-200 unit by removing the plate blocking access to the connection ports (see drawing below). Diagram- see p.11.



Removing condensate

The BA-SVM 10-200 unit has a condensate hose to drain the condensation water from the drip tray located under the hot water tank. The pipe drains all of the condensation water away from the appliance, minimizing the risk of damage. This pipe can be extended if needed.

Connecting the refrigerant pipe (not included)

The refrigerant pipes must be installed between the AMS 10 outdoor unit and the BA-SVM 10-200 indoor unit. Installation must be carried out in accordance with the current standards and directives.

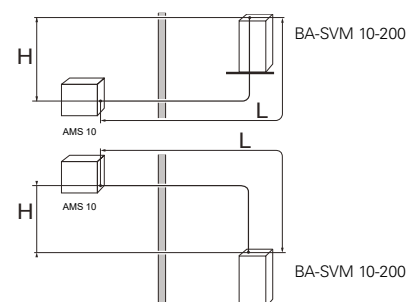
Limitations

- Maximum pipe length on either side, AMS 10-6, AMS 10-8 and AMS 10-12 (L): 30 m.
- Maximum height difference (H): 7 m.



NOTE

The outdoor unit, filled with refrigerant at the factory, allows for the use of refrigerant pipes (size L) between the outdoor unit and the indoor unit measured with a pipe length of L = 15m. The maximum permissible length of the refrigerant pipes can be 30m, however this requires topping up the system with refrigerant.



Refrigerant connection pipeline specification

BA-SVM 10-200/6

BA-SVM 10-200/6	Gas pipe (Ø ext.)	Liquid line (Ø ext.)
Pipe dimensions	Ø12,7 mm (1/2")	Ø6,35 mm (1/4")
Connection	Connection – (1/2")	Connection – (1/4")
Material	Copper quality SS-EN 12735-1 or C1220T, JIS H3300	
Minimum wall thickness	1,0 mm	0,8 mm

BA-SVM 10-200/12

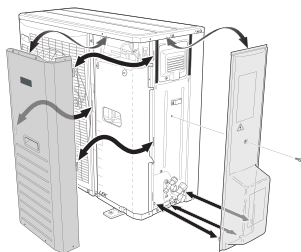
BA-SVM 10-200/12	Gas pipe (Ø ext.)	Liquid line (Ø ext.)
Pipe dimensions	Ø15,88 mm (5/8")	Ø9,52 mm (3/8")
Connection	Connection – (5/8")	Connection – (3/8")
Material	Copper quality SS-EN 12735-1 or C1220T, JIS H3300	
Minimum wall thickness	1,0 mm	0,8 mm

Pipe connection

- Carry out the pipe installation when the service valves (QM35, QM36) are closed.

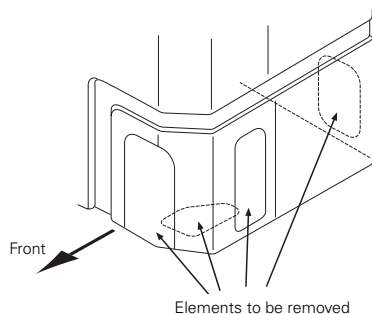
AMS 10-6 / AMS 10-8

- Remove the side panel from AMS 10 during installation to facilitate access.



AMS 10-12

- Remove the "punch-out" part from the external panel on the AMS 10 unit, where the pipes are to be routed. The drawing below shows the pipe outlets to choose from.

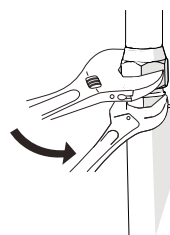


- Take care to ensure no water or pollutants enter the refrigerant connection pipe. Pollutants in the pipes risks damage to the heat pump.
- Bend the pipes with the maximum bending radi-

us (at least R100~R150). Do not bend the pipes repeatedly. Use a bending machine.

- Make and connect the flare-connection and tighten with the appropriate torque using a torque wrench. Use the appropriate tightening angle, if a torque wrench is not available.

External diameter, copper pipe (mm)	Tightening torque (Nm)	Tightening angle (°)	Recommended tool length (mm)
Ø6,35	14~18	45~60	100
Ø 9,52	34~42	30~45	200
Ø12,7	49~61	30~45	250
Ø 15,88	68~82	15~20	300

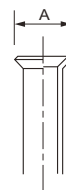


CAUTION

Gas shielding must be used when soldering.

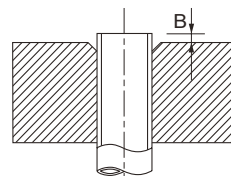
Flare connections

Expansion:



External diameter, copper pipe	A (mm)
Ø 6,35	9,1
Ø 9,52	13,2
Ø 12,7	16,6
Ø 15,88	19,7

Ejection:



External diameter, copper pipe (mm)	B, using the tool R410A (mm)	B, using the conventional tool (mm)
Ø 9,52	0,0~0,5	0,7~1,3
Ø 15,88		
Ø 6,35		1,0~1,5
Ø 12,7		

Pressure test and leak test

Both BA-SVM 10-200 and AMS 10 are factory tested for pressure and leakage, but the refrigeration pipe connections between appliances should be checked for leakage after installation.

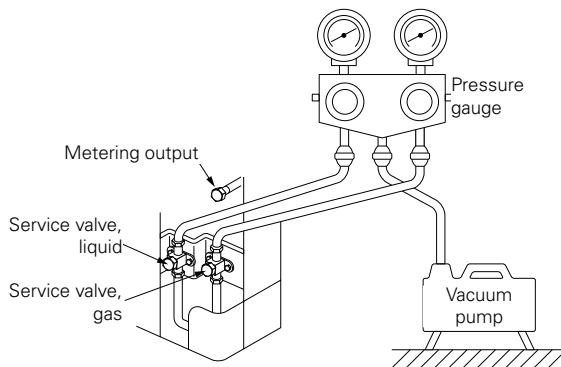


CAUTION

The pipe connection between the indoor unit and the outdoor unit must be leak tested. Then create a vacuum for the completed pipeline after finishing installation, in accordance with the applicable regulations. Only nitrogen must be used for compression and drying of the completed pipeline.

Vacuum pump

Use a vacuum pump to remove all air. Apply suction for at least one hour and end pressure after evacuation must be 1mbar (100 Pa, 0.75 Torr or 750 micron) absolute pressure. If the system is still damp or leaking, the vacuum will decrease after the draining has finished.



TIP

To achieve a better end result and speed up creation of the vacuum, please follow the below points:

- The pipelines should have the correct diameter and length.
- Drain the system to 4 mbar and fill it with dry nitrogen to atmospheric pressure.

Filling the system with refrigerant

AMS 10 is delivered complete with the refrigerant required for the installation of refrigerant pipes with lengths of up to 15 m on either side.

If the length of the refrigerant pipes exceeds 15 m, extra refrigerant must be added in the amount of 0.02kg/m for BA-SVM 10-200/6 or 0.06 kg/m for BA-SVM 10-200/12.



NOTE

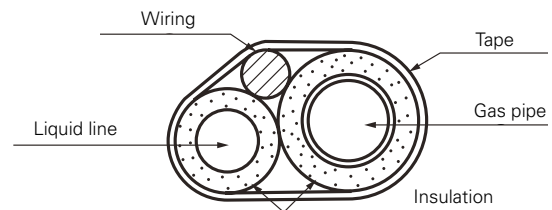
The maximum permissible length of the refrigerant pipes can be 30m, however this requires topping up the system with refrigerant after a length of 15m is exceeded.

When connecting the pipes, carrying out pressure tests and leak tests, and creating the vacuum, remember to keep the service valves (QM35, QM36) closed. In order to fill the pipes of BA-SVM 10-200 with refrigerant, they must be reopened.

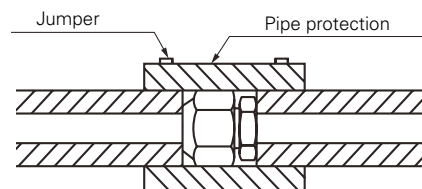
Insulating refrigerant pipes

- Refrigerant pipes (both liquid and gas) must be insulated for the purpose of thermal insulation and in order to avoid condensation.
- Use insulation that can withstand at least 120°C.

Principle:



Connections:



NOTE

All connections and work related to the refrigeration system must be carried out by a person with the proper authorisations and certificates.

Connections

General information

NIBE SPLIT can be connected in several different ways. For more information about connections, go to the website www.nibe.eu.

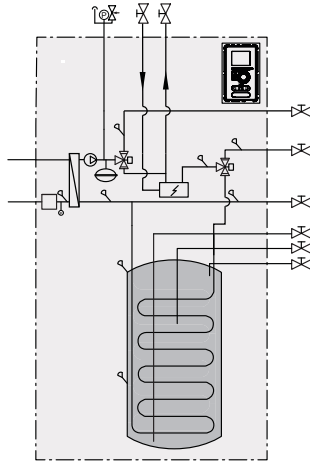
	AMS 10-6	AMS 10-8	AMS 10-12
Maximum pressure, climate system	0,3 MPa (3 Bar)		
Highest recommended flow/return temperature at dimensioned outdoor temperature.	55/45 °C		
Max. temperature in the unit BA-SVM 10-200	+65 °C		
Maximum hot water temperature	+65 °C		
Minimum temperature ext. operation of the unit	-20 °C		
Minimum temperature ext. cooling operation	+10 °C		
Max. supply temperature, compressor	+58 °C		
Min. cooling supply temperature	+7 °C		
Max. cooling supply temperature	+25 °C		
Minimum volume, climate system during heating/cooling*	50 l	80 l	100 l
Max. flow, climate system	0,29 l/s	0,38 l/s	0,57 l/s
Min. flow, climate system	0,09 l/s	0,12 l/s	0,15 l/s
Min. flow, cooling system	0,11 l/s	0,16 l/s	0,20 l/s

* Refers to volume associated with undisturbed flow

Installation alternative

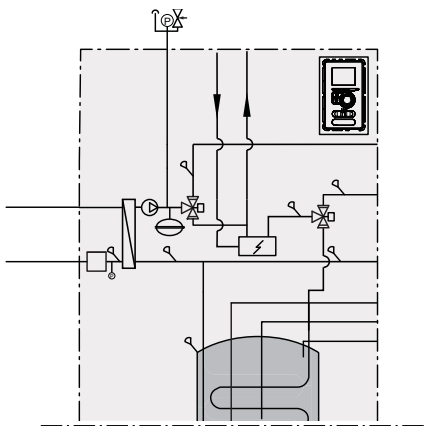
Docking the indoor unit

The BA-SVM 10-200 unit is not equipped with a shut-off valve for the central heating system, hot water system or electric additional heat; these must be installed on the outside of the indoor unit to facilitate any future servicing.



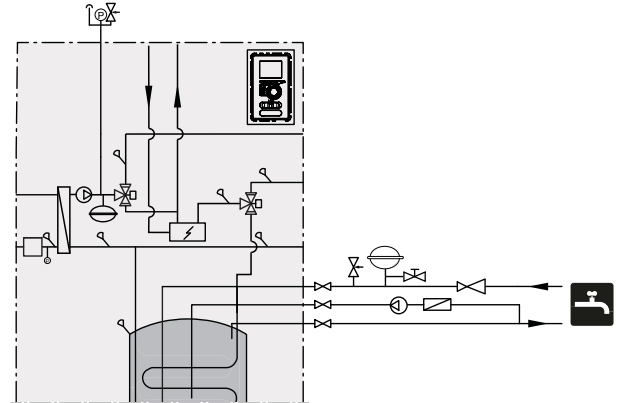
Docking during use without heat pump

It is not necessary to change the configuration of the hydraulic connections for the indoor unit to work independently without the outdoor unit.



Connecting cold and hot water

The hot water tank should be connected to a water supply system with water pressure of min. 1 bar, max. 10 bar. If the pressure at the cold water inlet to the tank is higher than the permissible level, use a pressure reducer. During heating of the water in the tank, the pressure increases, which is why each tank must be equipped with the appropriate safety valve, installed on the cold water supply, which will protect the tank against an excessive increase in pressure. If using hot water circulation, see subsection "Hot water circulation".



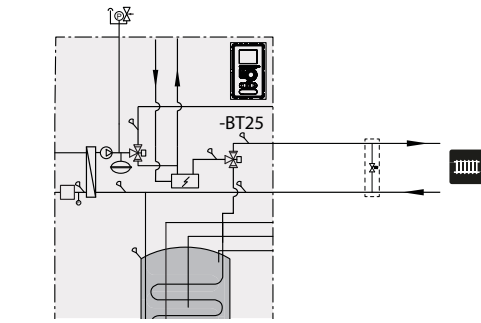
CAUTION
It is absolutely necessary to install a properly selected safety valve on the cold water supply pipe.

CAUTION
Do not use the appliance if the safety valve is blocked.

CAUTION
It is forbidden to install any constrictors (e.g. reducers, particle filter, etc.) and shut-off valves between the storage tank and the safety valve. Only fitting a tee with a draining valve and a tee with an expansion vessel is permitted.

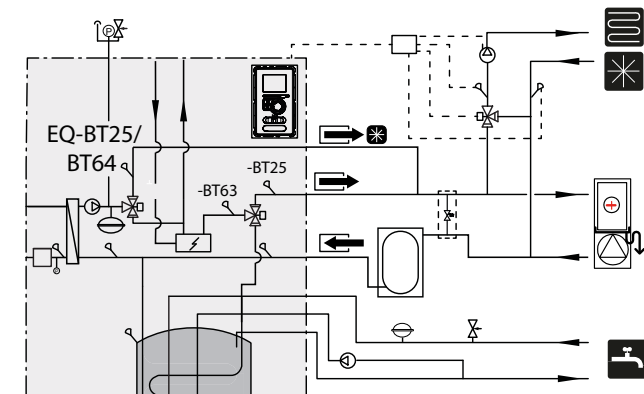
Docking the climate system

When connecting to a system with thermostatic valves on all radiators/underfloor heating pipes, use the appropriate hydraulic solutions which ensure the proper heating medium volume and minimum, undisturbed flow. See the subsection "Buffer vessel".



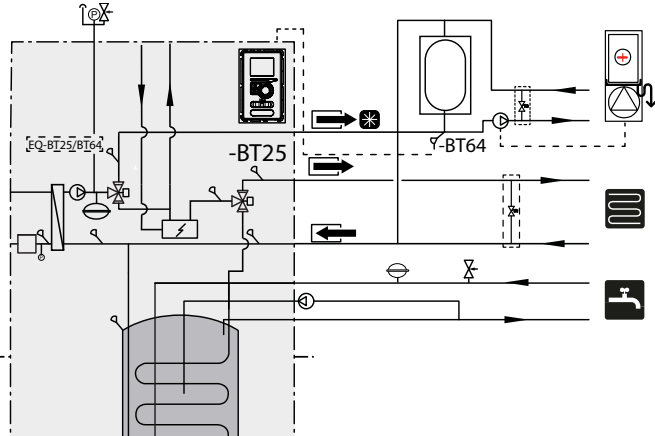
Connecting the 2-pipe cooling operation system

In the 2-pipe cooling operation system, the sensor BT64 / EQ-BT25 assumes the function of sensor BT25. Degree minutes are counted according to EQ-BT25.



Connecting the 4-pipe cooling operation system

The 4-pipe system requires an additional cooling buffer vessel. Sensor BT64 must be transferred to the buffer vessel. Degree minutes for heating are counted according to BT25. Degree minutes for cooling operation are counted according to BT 64.

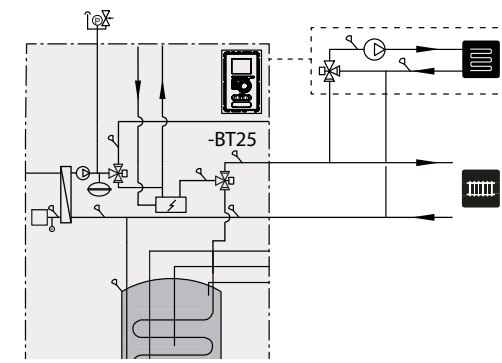


CAUTION

The heat pump should have cooling insulation and are working in an intermittent mode.

Docking an additional climate system

The system can be expanded to include additional heating/cooling circuits, provided an additional accessory board is used. Once the AXC 30 card or ready-to-use ECS 41 kit has been put into use, an additional heating/cooling circuit can be activated using the controller.



Additional accessories and the connection options and methods for these are described in the instructions for AXC 30 and ECS 41.

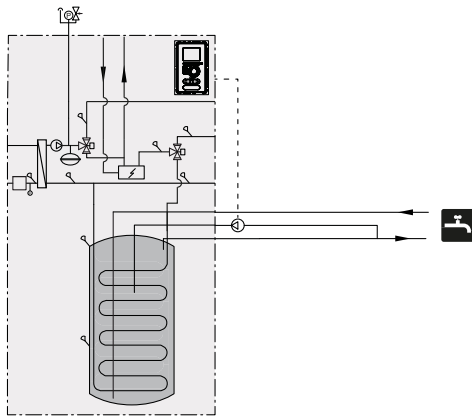
Hot water circulation



CAUTION

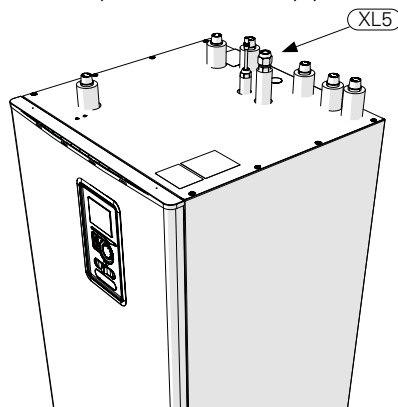
If connection AA3: X7 is used for another purpose, an additional AXC 30 accessory is required to connect the hot water circulation pump control.

The BA-SVM 10-200 unit comes with the possibility to connect the hot water circulation. The circulation output plug (XL5) is located at the top of the HW tank.

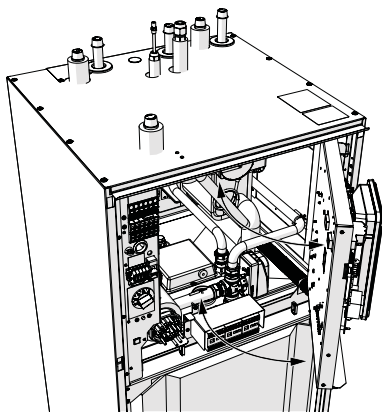


In order to connect the circulation, please follow the below steps:

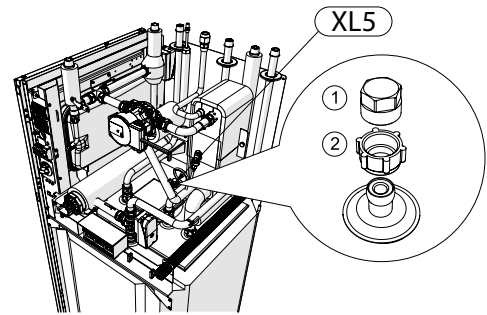
1. Remove the cap XL5 from the top part of the casing.



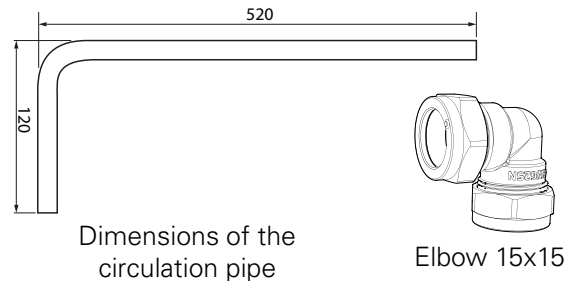
2. Remove the front panel and then slide the control box to the right to access the hydraulic connections.



3. Remove the plug from the circulation connection port (XL5)



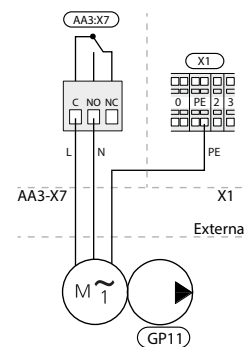
4. Fit an elbow (not included in BA-SVM 10-200) facing towards the back of the casing, into the circulation connection port.
5. Connect the pipe to the elbow, dimensions as shown in the drawing below, routing it out at the top of the casing, where the XL5 plug is located.
6. Fit a circulation pump at the outlet of the pipe from the BA-SVM 10-200 unit, and then connect its control to the controller.
7. Replace the control box and the front panel.



Connecting the control of the hot water circulation pump

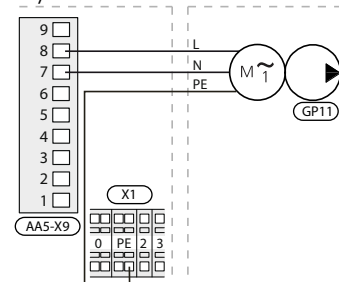
The hot water circulation pump can be connected in two configurations:

- to board AA3:X7 on block AA3-X7:C (230V), AA3-X7:NO (N), and X1:PE,



- in case AA3:X7 output is already in use, to accessory board AA5 (not included in BA-SVM 10-200) on block AA5-X9:8 (230V), AA5-X9:7 (N) and X1:PE

Accessory board AA5 External



5 AMS 10 outdoor unit

Delivery and handling

The AMS 10 heat pump must be transported and stored vertically.

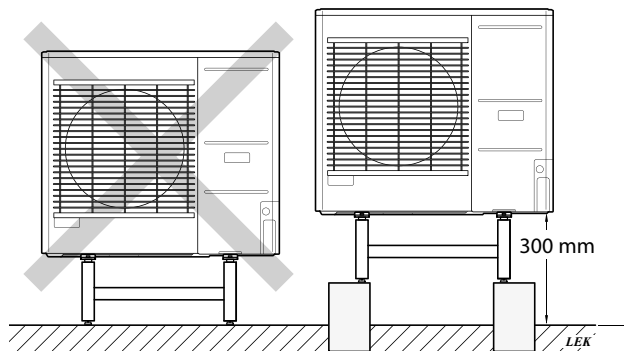


CAUTION

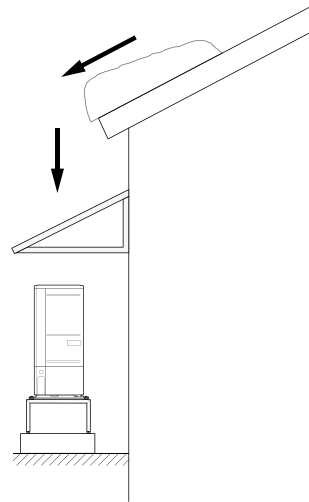
Ensure that the heat pump cannot fall over during transport.

Installation

- Place the AMS 10 heat pump 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, no lower than 300 mm. Supports and fastenings on the page are available in the AMS 10 manual in the "Accessories" section.
- The AMS 10 heat pump should not be positioned next to the walls of rooms where noise could be a problem, for example, next to a bedroom.
- Also ensure that the placement does not disturb the neighbours.
- The AMS 10 heat pump must not be placed such that recirculation of the outdoor air can occur. This causes lower power and impaired efficiency.
- The evaporator should be sheltered from direct wind, which negatively affects the defrosting function. The AMS 10 heat pump must be placed such that the evaporator is protected from the wind.
- Large amounts of condensate, as well as melt water from defrosting, may be produced. Condensate must be drained off to a drain (see subsection "Condensation water drain").
- Care must be exercised so that the heat pump is not scratched during installation.



Do not place the AMS 10 heat pump directly on the lawn or other unstable surface.



If there is a risk of snow slip from the roof, a protective roof or cover must be erected to protect the heat pump, pipes and wiring.

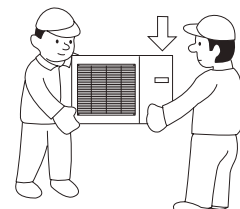
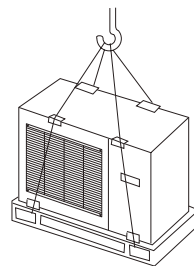
Lift from the street to the set-up location

If the base allows, the simplest thing is to use a pallet truck to move the AMS 10 heat pump to the set-up location.



CAUTION

The centre of gravity is offset to one side (see inscription on packaging).



If the AMS 10 heat pump needs to be transported across soft ground, such as a lawn, we recommend that a crane truck is used which can lift the unit to the set-up location. When the AMS 10 heat pump is lifted with a crane, the packaging must be undamaged and the load evenly distributed on the boom, see the drawing above.

If a crane cannot be used, the AMS 10 heat pump can be transported using an extended hand truck. The AMS 10 heat pump must be secured on the side marked "heavy side" and two people are required to set the AMS 10 in position.

Lift from the pallet to final positioning

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

Place lifting straps around each foot of the appliance.

Lifting from the pallet to the base requires four persons, one for each lifting strap.

It is not permitted to lift the appliance by anything other than the feet

Scrapping

In case of scrapping, the product is dismantled by performing the above actions in reverse order. Lift by the bottom panel instead of a pallet!

Condensation water drain

Condensation drains out on to the ground below AMS 10. To avoid damage to the house and heat pump, the condensation must be gathered and drained away.



CAUTION

Condensation drainage is important for the operation of the heat pump. The condensation drain must be routed such that it cannot damage the building.



CAUTION

Do not connect heating cables with automatic adjustment.



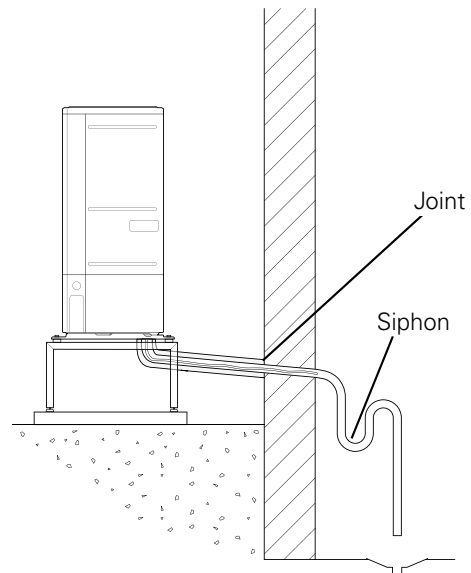
CAUTION

The electrical installation and wiring must be carried out under the supervision of an authorised electrician.

- Condensate (50 l / 24 hours) is drained off via the hose to the appropriate drain. It is recommended that the route outside for the condensate is as short as possible.
- The section of the pipe that may be affected by frost must be heated by the heating cable to prevent freezing.
- Route the pipe downward from the AMS 10 heat pump.
- The outlet of the condensation pipe must be at a depth that is frost-free or, alternatively, indoors (subject to local rules and regulations).
- Use a siphon for installations where air circulation may occur in the condensation water drainage pipe.
- The insulation must be tightly fitted to the bottom of the condensation water trough.

Recommended alternative for leading off condensation water

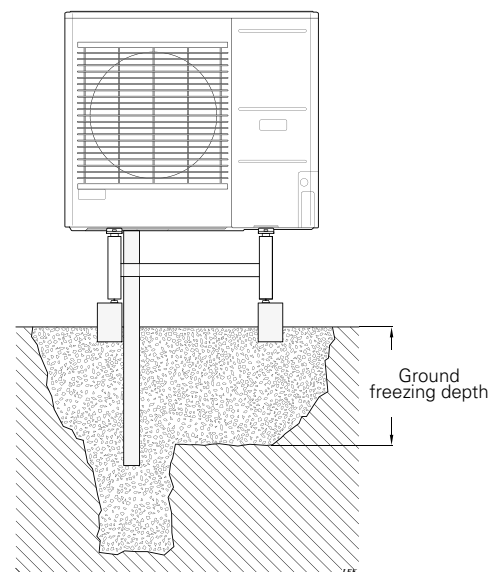
Indoor drain



The condensation water is discharged to an indoor drain (subject to local rules and regulations).

Route the pipe downward from the air/water heat pump.

The condensation water drainage pipe must have a water seal to prevent air circulation in the pipe.



If the building has a basement, use a stone caisson to prevent condensation from damaging the building. Otherwise, the stone caisson can be positioned directly under the heat pump.

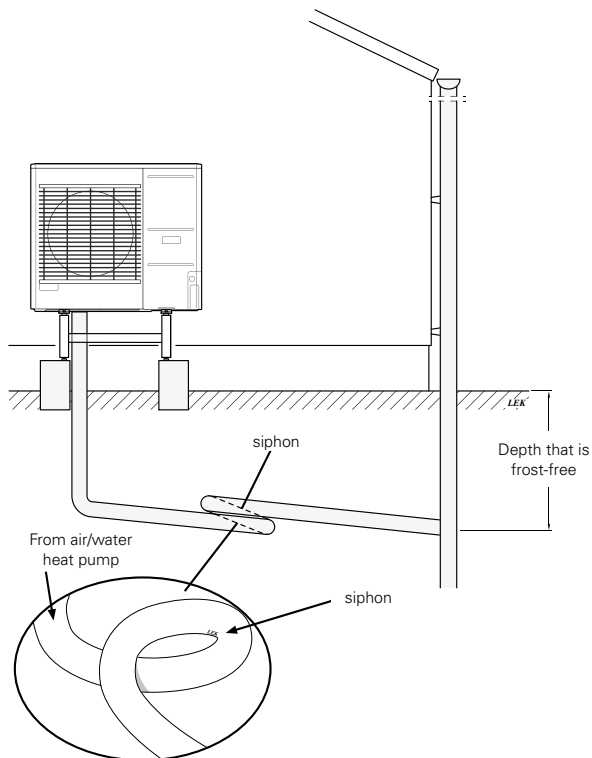
The outlet of the condensation water drainage pipe must be at a depth that is frost-free.

Drain into the gutter



CAUTION

Bend the hose to create a siphon, see illustration.



- The outlet of the condensation water drainage pipe must be at a depth that is frost-free.
- Route the pipe downward from the air/water heat pump.
- The condensation water drainage pipe must have a siphon to prevent air circulation in the pipe.
- The installation length can be adjusted by the size of the siphon.

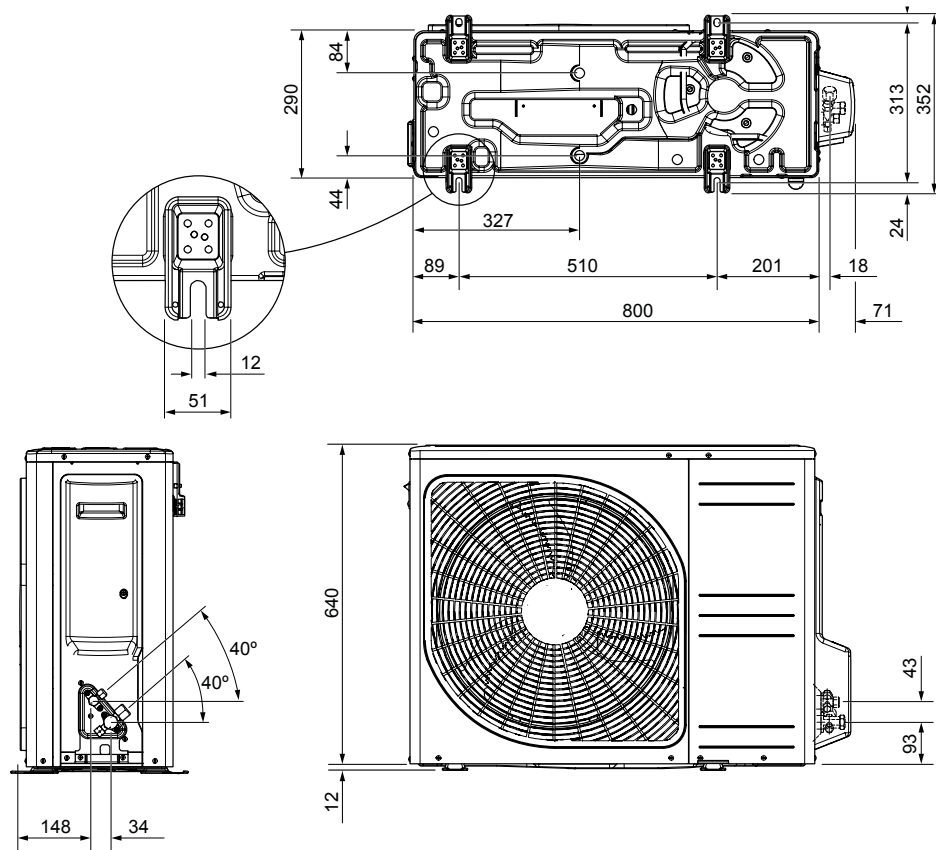


NOTE

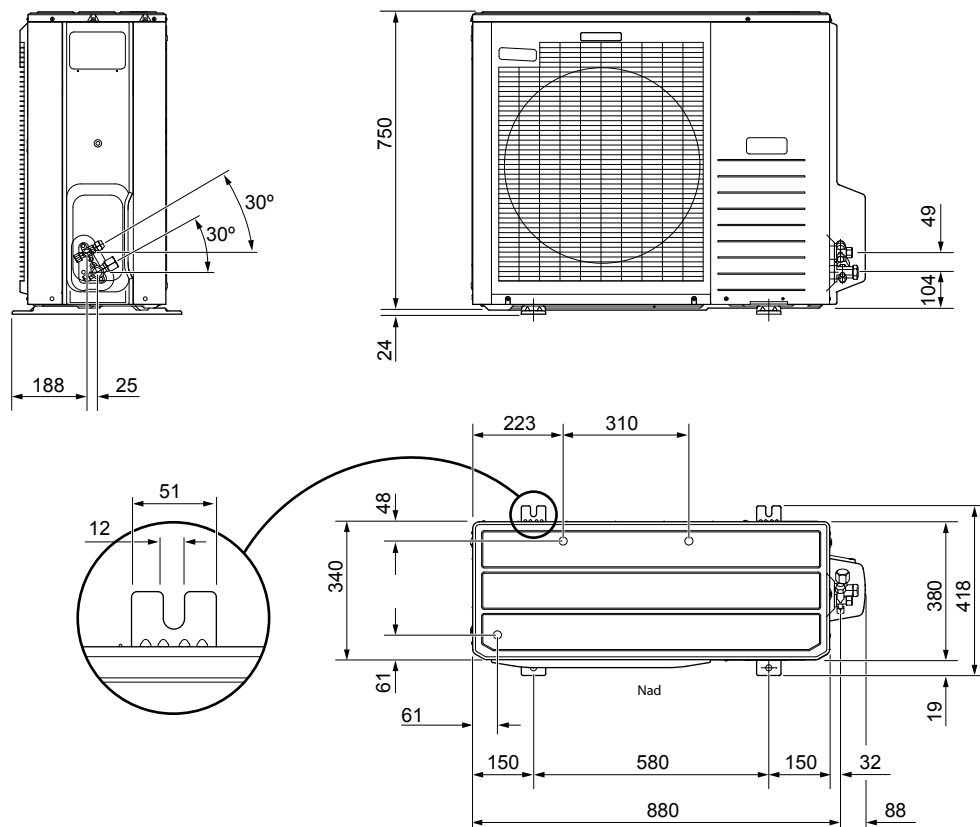
If none of the recommended options will be used, proper drainage of condensate must be ensured.

Dimensions

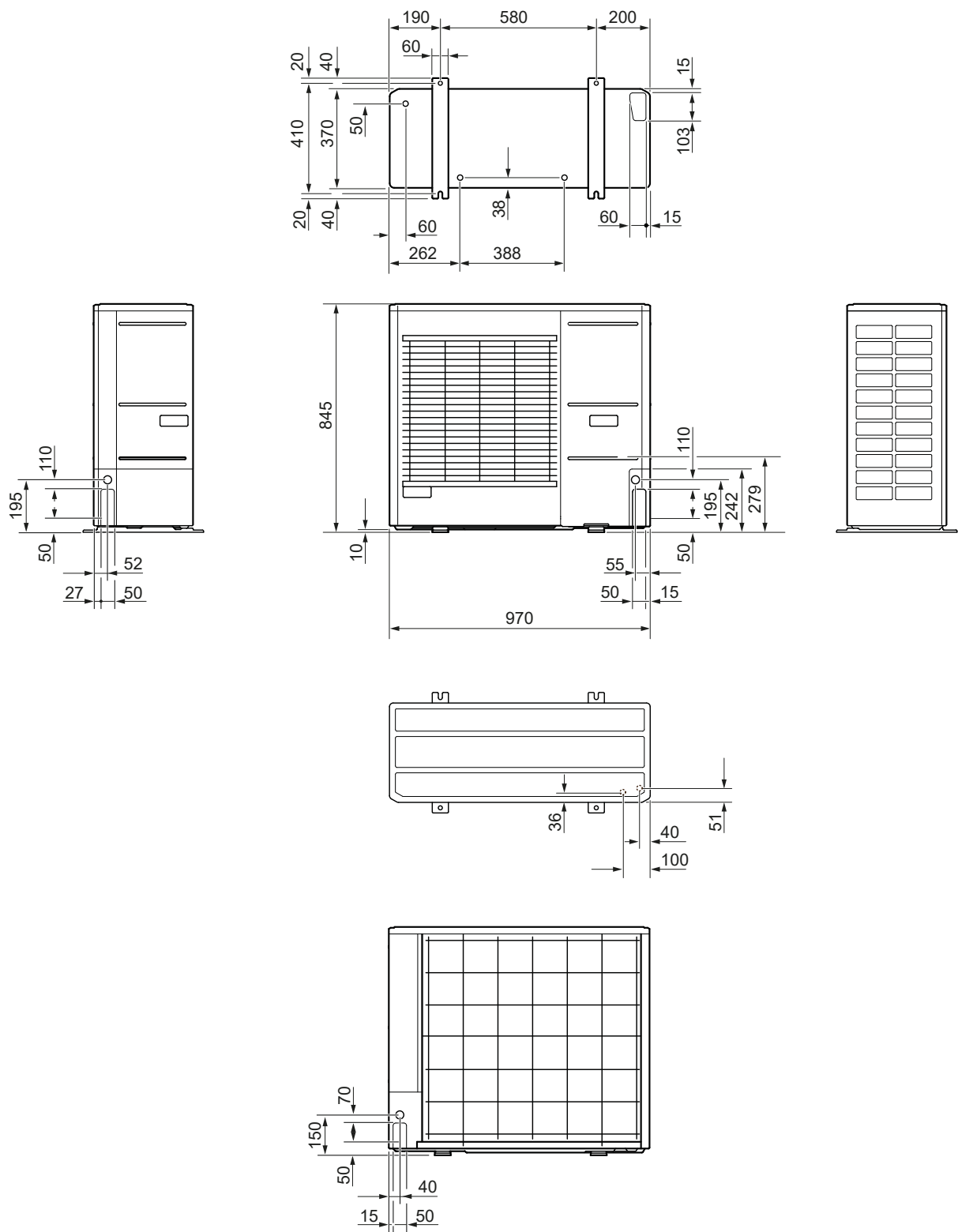
AMS 10-6



AMS 10-8

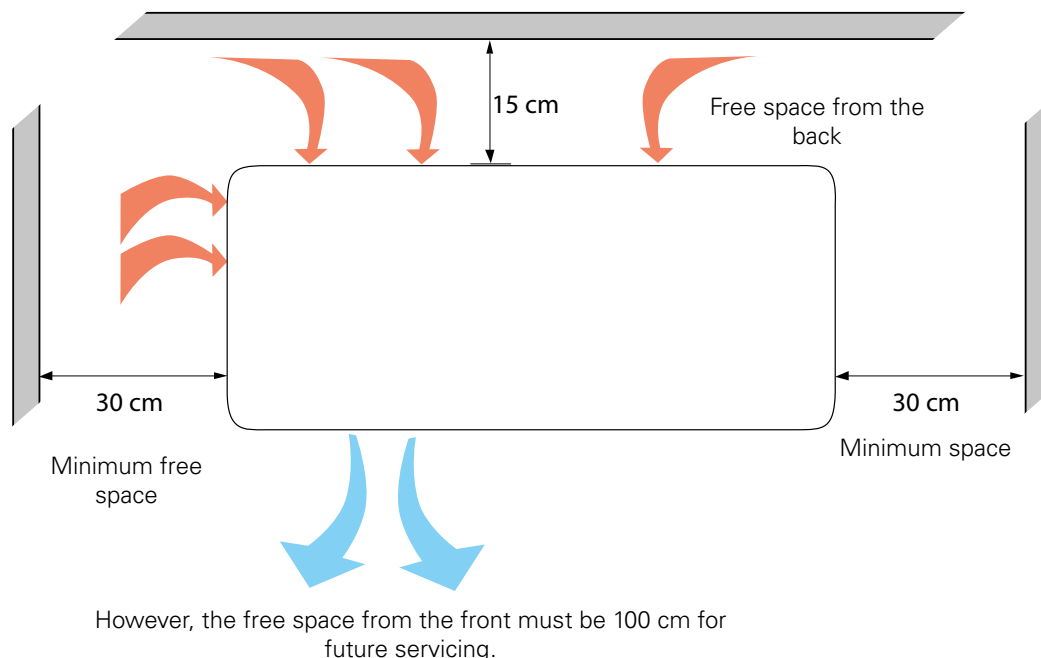


AMS 10-12



Installation location

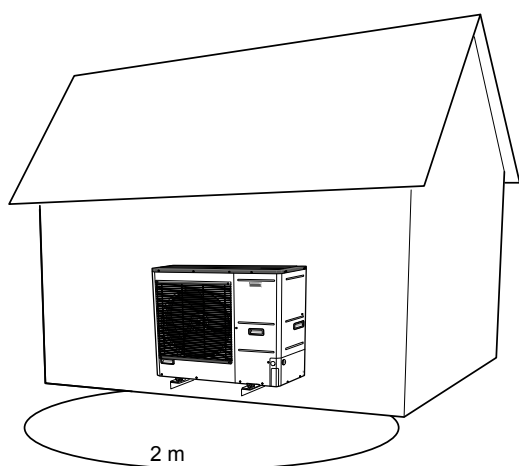
The recommended distance between AMS 10 and the building wall should be at least 15 cm. Free space above AMS 10 should be at least 100 cm. However, the free space from the front must be 100 cm for future servicing.



Sound power levels

Please bear in mind that the AMS 10 unit is normally placed against a building wall, which causes direct sound propagation. Therefore, always try to find a location that is out of the way, in an area that will cause

the least disturbance for neighbours. The sound level may be affected by walls, bricks, differences in ground level, etc., therefore the values given should only be considered as suggested levels.



In order to reduce the noise level, avoid direct air outlet to places that are particularly sensitive to excessive sound levels. An action that can be taken is, for example, creating acoustic boards so that the noise is less inconvenient. Sound propagation is affected by phenomena such as: source directivity, absorption by the atmosphere, influence of the ground, surface reflection, shielding by obstacles.

Noise		AMS 10-6	AMS 10-8	AMS 10-12
Sound power levels, according to EN12102 at 7/35°C (rated value)*	$L_w(A)$	51	55	58
Sound power level at a distance of 2m (rated value)*	$dB(A)$	32	41	44

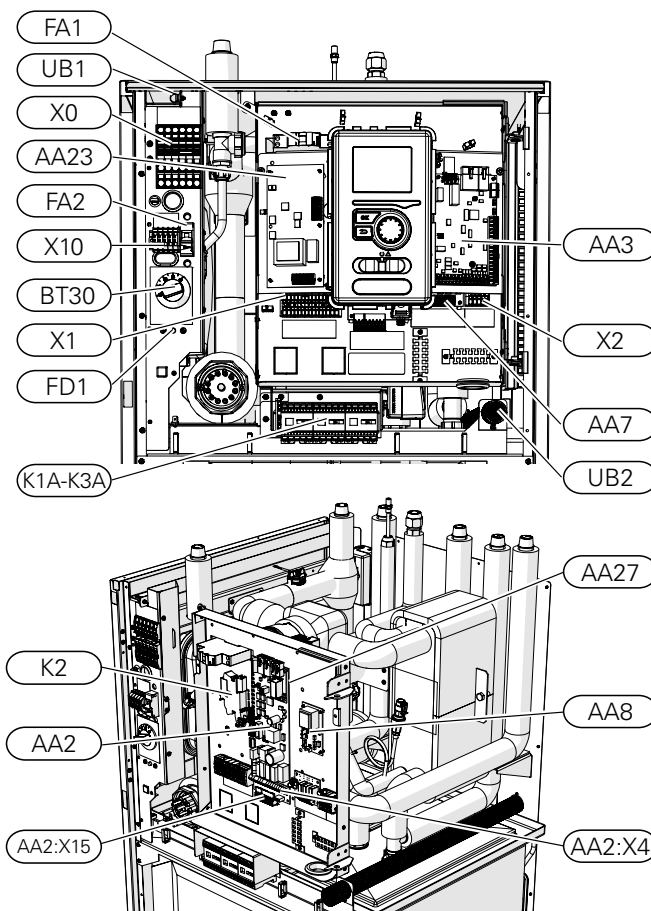
*Free space

6 Electrical connections

General information

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

- Disconnect the power supply of the indoor unit before insulation testing the building wiring.
- If the house is equipped with a residual-current device, BA-SVM 10-200 should be equipped with a separate residual current breaker.
- For the indoor unit wiring diagram, see section "Electrical wiring diagram".
- Communication and sensor cables must not be laid close to high-voltage cables.
- The minimum cross section of the communication and sensor cables to external connections must be 0.5 mm² with a length of up to 50 m, for example EKKX, LiYY or equivalent.
- The power supply cable should be dimensioned according to the current standards.
- To route the cables to BA-SVM 10-200, use cable grommet UB1 (marked in the drawing). In UB1, the cables are routed through the entire indoor unit from the back to the front.



CAUTION

The switch (SF1) for the controller must not be set to "I" or "Δ" until the climate system has been filled with heating medium and the central heating system vented. Otherwise, the thermal circuit breaker, thermostat and the flow-through heater may be damaged.

CAUTION

Cut off the power using the circuit breaker before carrying out any servicing. Electrical installation must be carried out in accordance with the current regulations by a person with the proper authorisations and qualifications.

CAUTION

When SF1 is set to „Δ“ - the BA-SVM 10-200 unit switches the QN10 valve to the central heating and heating takes place according to thermostat BT30. Hot water is not heated while the switch is set to „Δ“.

CAUTION

If the system is operating at „Δ“ the temperature on BT30 should be aligned with the operating temperature of the central heating system. If the temperature set on the thermostat is too high, it can damage the system.

X0	Terminal block- 400V~/230V~
X1	Terminal block- 230V~
X2	Terminal block- 230V~
X10	Terminal block- 230V~
FA1	Miniature circuit breaker (for the indoor unit)
K1A-K3A	Immersion heater contactors
BT30	Standby mode thermostat
AA3	Sensor board
AA23	Communication board
AA7	Relay board
FA2	AMS outdoor unit miniature circuit breaker
FD1	Thermal circuit breaker
UB1	Cable grommet
UB2	Cable grommet
K2	Alarm relay
AA2	Main board
AA2:X15	Terminal block- low voltage
AA2:X4	Terminal block- low voltage
AA8	Titanium anode board
AA27	Relay board

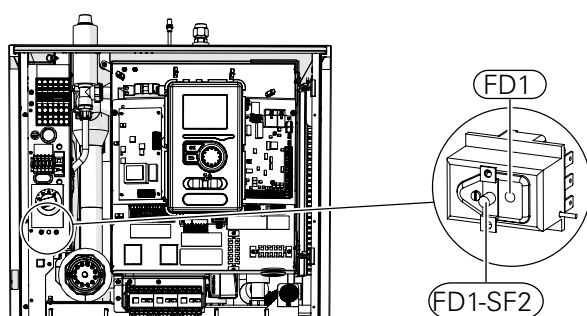
Thermal circuit breaker

The thermal circuit breaker (FD1) cuts off the power supply to the electric additional heat if the temperature rises to the approx. 98°C range or drops below -8°C and can be manually reset.

CAUTION
In the event of thermal protection activation, report this to an authorised service centre in order to diagnose the possible case.

Resetting

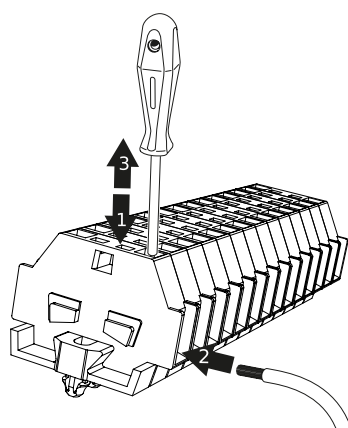
The thermal circuit breaker (FD1) is accessible behind the front cover. It is reset by pressing firmly on the button (FD1-SF2) using a small screwdriver. Press the button using max. force 15 N (approx. 1.5 kg).



CAUTION
In the event of thermal protection activation, report this to an authorised service centre in order to diagnose the possible cause.

Cable key lock

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



Connections

CAUTION
To prevent interference, unscreened communication cables and/or sensor cables to external connections must not be laid at a distance less than 20 cm from high-voltage cables.

CAUTION
The electrical system to which the device will be connected should be built in accordance with current regulations.

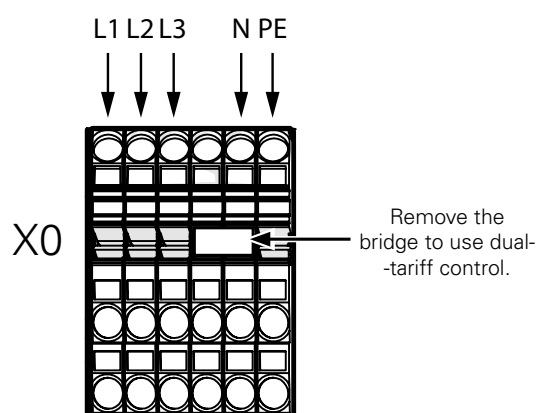
Power supply connection 400V

The power supply connection is connected to terminal block (X0) through the input on the back of the unit (UB1). The cable must be dimensioned according to the applicable standards.

The 400V connection allows for a maximum power of 9kW to the electric additional heat. The connection should be made according to the diagram in the user manual.

Detailed electrical diagram- see subsection "Electrical wiring diagrams".

Diagram- connecting power supply 400V



CAUTION
When a 400V connection is used, the maximum power of the electric module used in the BA-SVM 10-200 unit is 9kW.

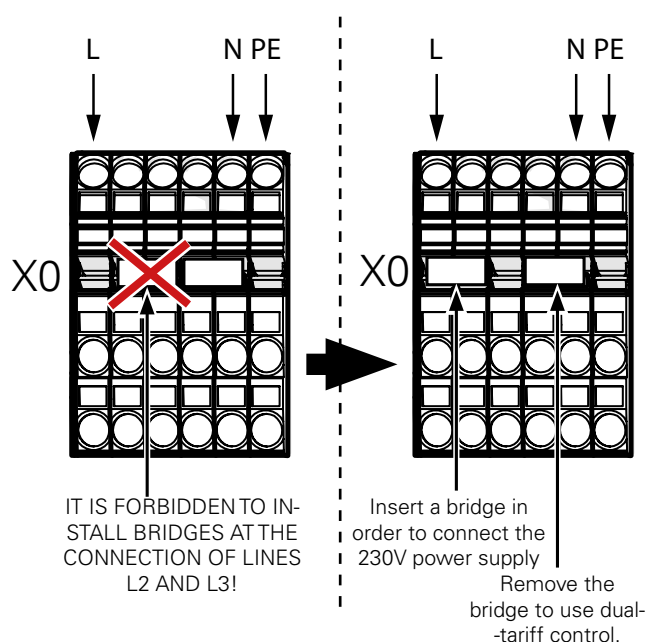
CAUTION
In the case of a dual tariff power supply, it is advisable to connect the neutral wire from the power supply circuit (meter).

Power supply connection 230V

The power supply connection is connected to terminal block (X0) through the input on the back of the unit (UB1). The power supply connection is connected to terminal block (X0) through the input on the back of the unit (UB1).

The 230V connection allows for a maximum power of 4.5kW to the additional heating. The connection should be made according to the diagram in the user manual. Detailed electrical diagram - see subsection "Electrical wiring diagrams."

Diagram- connecting power supply 230V



CAUTION

When a 230V connection is used, the maximum power of the additional heat used in the BA-SVM 10-200 unit is 4.5kW.

CAUTION

In the case of a dual tariff power supply, it is advisable to connect the neutral wire from the power supply circuit (meter) - particularly when using a 230V connection.

CAUTION

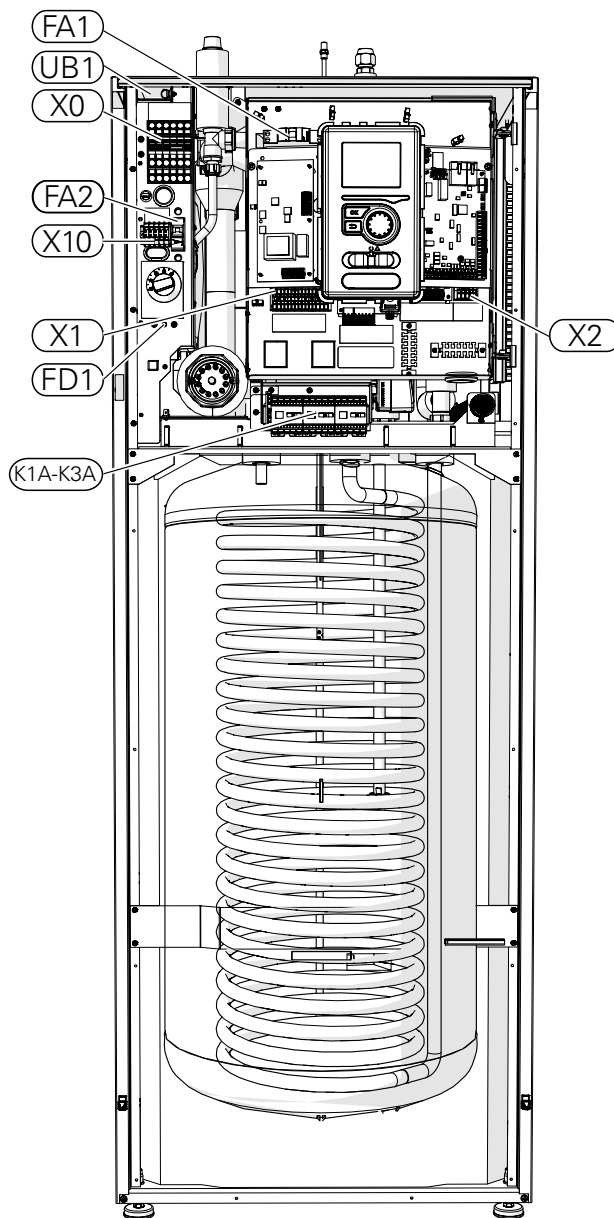
It is forbidden to install bridges at the connection of lines L2 and L3. Otherwise, the appliance and the electrical system may be damaged.

The manufacturer is not liable for any damage caused by failure to comply with the above instructions.

Miniature circuit breaker

The automatic heating control system, the circulation pump and their wiring in BA-SVM 10-200 are internally protected by miniature circuit breaker C10 (FA1). The AMS 10 outdoor unit and accessories are internally protected in BA-SVM 10-200 by miniature circuit breaker B20 (FA2).

Connection



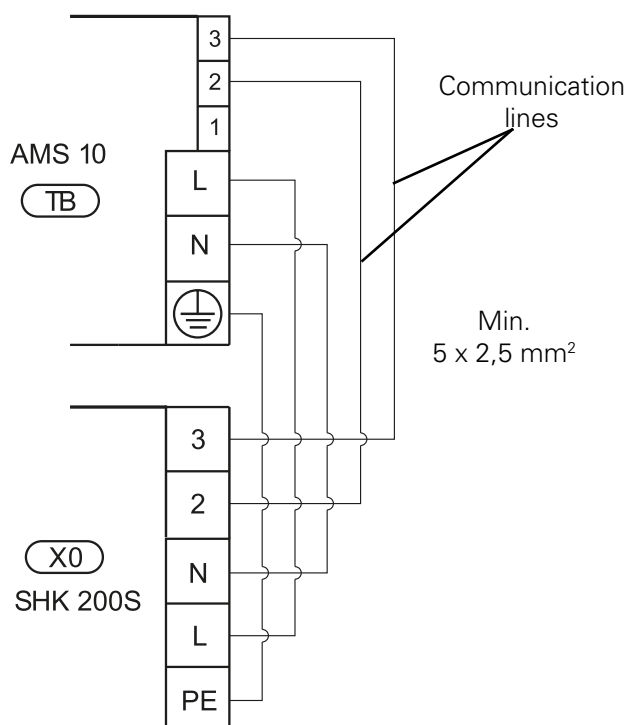
Connecting BA-SVM 10-200 and AMS 10

The device connecting cable should be connected to the power supply terminal block (TB) in AMS 10 and to the terminal block (X0) in BA-SVM 10-200.

CAUTION
The AMS 10 unit must be earthed before connecting the appliance via the cable. Wiring must be secured so that the terminal block is not under tension. The end of the wire should be 8 mm long without insulation

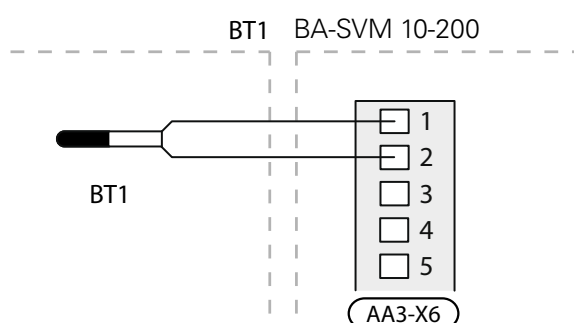
AMS 10

Connect the phase (brown), neutral (blue), communication (black and grey) and protective (yellow-green) conductors as shown in the drawing:



Connecting the outdoor temperature sensor

The outdoor temperature sensor BT1 (included) should be connected to the BA-SVM 10-200 unit via terminal block AA3-X6:1 and AA3-X6:2.



Settings

Electric additional heat- maximum power

The electric additional heat has a maximum power of 9 kW (3x400V). The immersion heater power is split into 3 steps. The possible operational power steps are: 3, 6 and 9 kW. The maximum power step of the immersion heater can be set using menu 5.1.12.

Emergency mode

When the controller is set to emergency mode (SF1 is set to Δ) only the most necessary functions are activated.

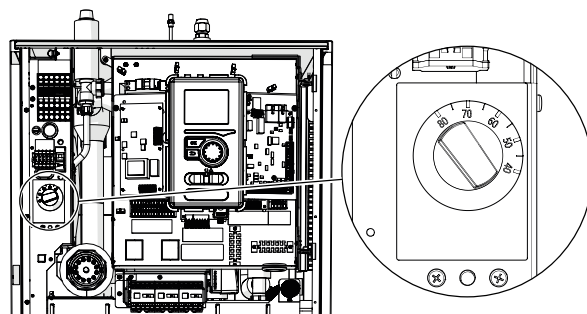
- Hot water is not heated.
- Constant temperature in the supply line, more information in the section Emergency mode thermostat.

CAUTION
While on emergency mode, it is not possible to heat hot water.

Emergency mode thermostat

The supply temperature in emergency mode is set using a thermostat (BT30). It should be set according to the demands of the heating/cooling circuits in operation.

The adjustment range is 6- 77°C. Please note, however, that for underfloor heating the setting should be min. 20°C, max. 35-45°C to maintain comfort in the room and efficient operation of the system.




CAUTION
The maximum available heater power in emergency mode is 3kW.

CAUTION
The temperature on the thermostat must be set according to the system requirements. If the temperature is too high, it can damage the system.

7 Commissioning and adjusting

Preparations

1. Check that the switch for the control module is in position „“.
2. Check that the draining valve is fully closed and that the thermal circuit breaker (FD1) has not deployed.
3. Compatible NIBE air/water heat pumps are listed in the section Installation alternative.

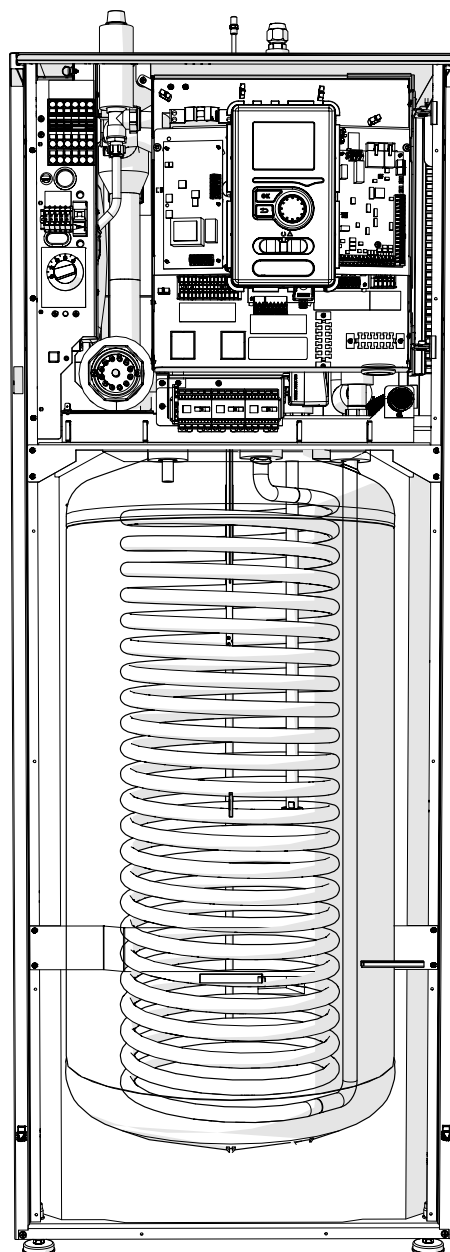
Filling and venting

Filling the hot water tank in BA-SVM 10-200

1. Open the hot water intake at the highest intake point in the house.
2. Open the cold water shut-off valve. This valve should then be fully open while carrying out these operations.
3. When water starts to flow from the intake point with hot water without air bubbles, the HW tank is full and you can close the intake point.

Filling and venting the climate system BA-SVM 10-200

1. Open the vent valve at the highest point of the climate system.
2. Set all mixing valves to a position which allows flow in all heating/cooling circuits.
3. Open the valve for filling the climate system and fill it with the heating medium, vent the system.
4. Close the vent valve after the system has been completely vented.
5. Check the pressure gauge, on which an increase in pressure will be visible. Fill the system to the required pressure (1.5- 2 bar), then close the filling valve. The maximum operating pressure of the system is 3 bar.
6. Start the climate system circulation pump. The automatic vent valves located on the heating/cooling circuit will begin venting the system.
7. If during venting the pressure falls below 1 bar, extra heating medium must be added to the climate system.



Draining the climate system

To make it easier to carry out servicing on the climate system, drain the system first using the filling / draining valve. The unit is not fitted with a climate system drainage valve. This valve must be installed external from the product



CAUTION

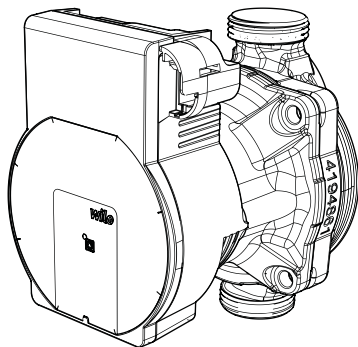
There may be some hot water when draining the heating medium side/climate system. There is a risk of scalding.

1. Connect a pipe to the system's external draining valve.
2. Then open the draining valve in order to drain the heating installation.

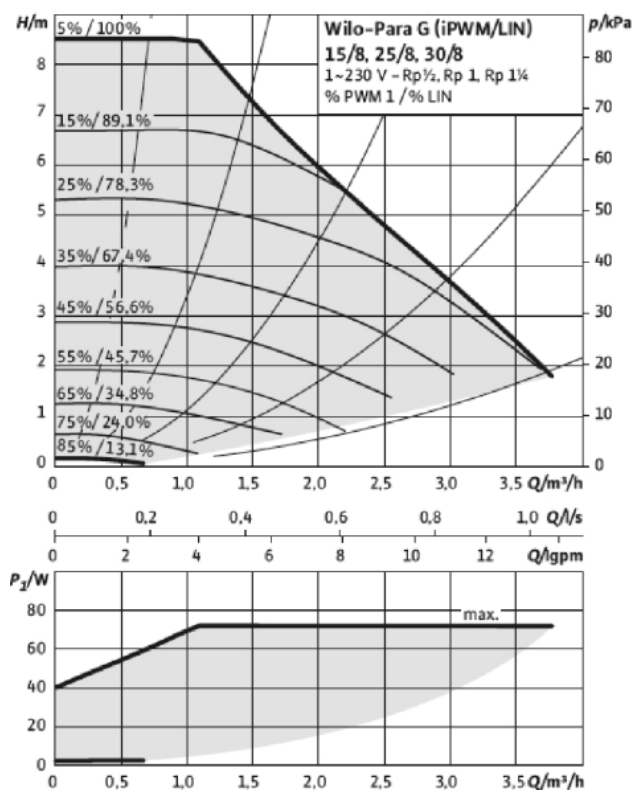
Circulation pump

Pump speed

The circulation pump in BA-SVM 10-200 is frequency-controlled and adjusts itself using control and based on heating demand.



Available pressure, circulation pump GP10.



Post-adjustment, venting

Initially, air is released from the heating medium and venting may be necessary. If gurgling sounds can be heard from the climate system, the entire system will require additional venting. The system is vented via the vent valves. During venting, BA-SVM 10-200 must be switched off.

Commissioning



CAUTION

Commissioning of the system must be carried out by a person with the proper authorisations and qualifications!

For commissioning of the heat pump:

1. Switch on the power supply to BA-SVM 10-200 making sure that the AMS 10 unit is properly connected to the power supply.
2. Follow the instructions displayed in the controller start guide or alternatively start the start guide in menu 5.7.

Start Guide



CAUTION

The climate system must be filled with water and vented before setting the switch to "I".

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



TIP

See page 38 for more in-depth information on the installation's control system [1](operation, menus etc.).

Commissioning

The first time the system is started up, a start guide is launched. The start guide instructions state what needs to be carried out at the first start-up together with a run through of the system's basic settings.

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

During the start guide, the reversing valves are operational in order to help vent the heat pump.



NOTE

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

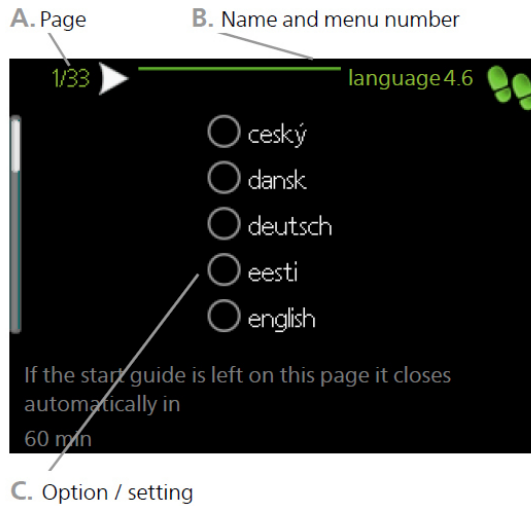
The guide will appear at each controller restart until it is disabled on the last page.



NOTE

If starting up the system in low outdoor temperatures and a low heating medium temperature in the central heating system, the central heating system should be warmed up first, using the additional heat, to a temperature of about 20 °C.

Operating the start guide



A. Page

Here you can see the menu level in the start guide. Scroll between the pages of the start guide as follows:

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

B. Name and menu number

Information about the menu page, to which the start guide refers, can be found in the control system. The digits in brackets refer to the menu number in the control system.

If you want to read more about a particular menu, either consult the help menu or read the user manual.

C. Option / setting

Enter settings for the system here.

D. Help Menu



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

To view the help text:

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

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

Commissioning without heat pump

The indoor unit can be used without a heat pump, i.e. only as an electric boiler, to produce heat and hot water before the heat pump is installed, for example. Go to menu 5.2 System settings and turn off the heat pump.

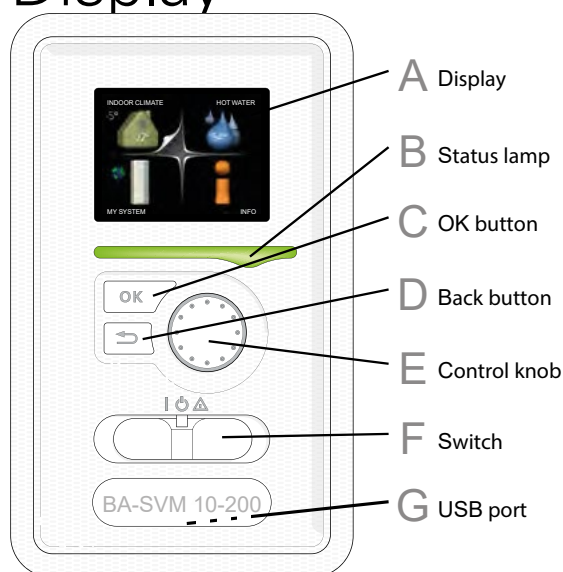


CAUTION

Select the auto or manual operating mode when the indoor unit is to be used again with the heat pump.



8 Control- Introduction

Display



F Switch (SF1)

The switch has three positions:

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

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

G USB port

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

The USB port is used to update the software.

A Display

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

B Status lamp

The status lamp indicates the status of the control module. The status lamp:

- lights up green during normal operation;
- lights up yellow in emergency mode;
- lights up red in the event of an alarm.

C OK button

The OK button is used to:

- confirm submenu/option/value selection;
- scroll through the windows in the start guide.

D Back button

The Back button is used to:

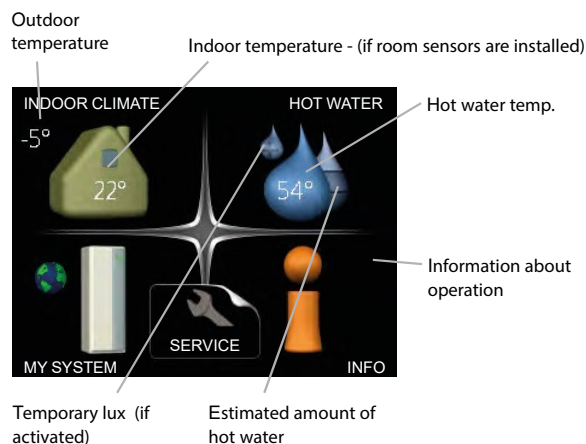
- go back to the previous menu;
- change a setting that has not been confirmed.

E Control knob

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

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

System menu



Menu 1- INDOOR CLIMATE

Setting and scheduling the indoor temperature. See information in the Help menu or user manual subsection MENU 1.

Menu 2- HOT WATER

Setting and scheduling hot water production. See information in the Help menu or user manual subsection MENU 2.

Menu 3- INFO

Display of temperature and other operating information and access to the alarm log. See information in the Help menu or user manual subsection MENU 3.

Menu 4- MY SYSTEM

Setting time, date, language, display, operating mode etc. See information in the Help menu or user manual subsection MENU 4.

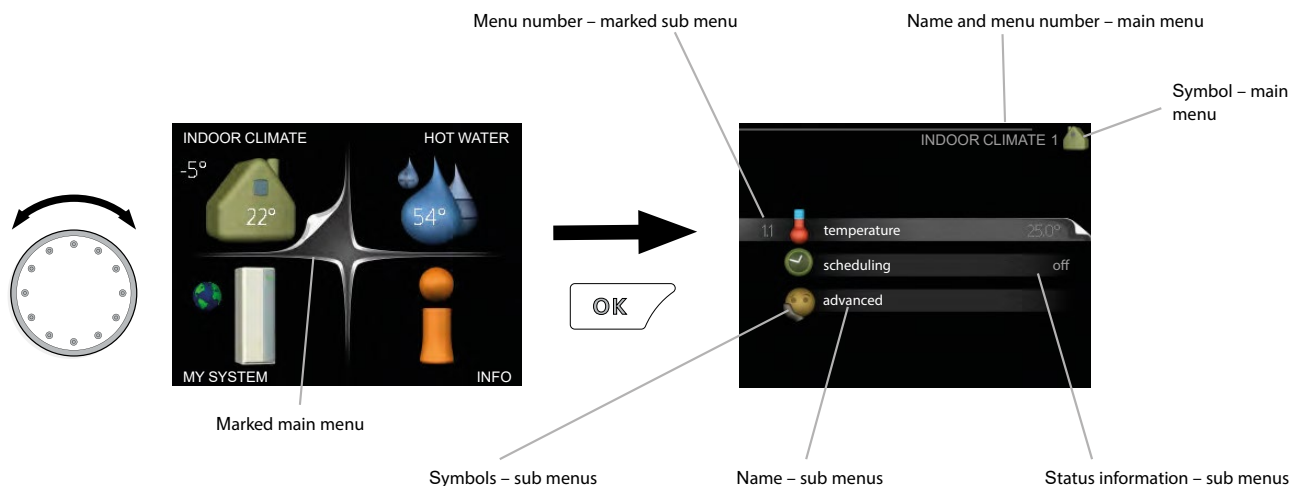
Menu 5- SERVICE

Advanced settings. These settings are not available to the end user. This menu is visible when the Back button is pressed for 7 seconds when you are in the start menu. See information in the user manual subsection MENU 5.

Symbols on the display

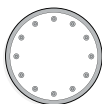
The following symbols can appear on the display during operation:

Symbol	Description
	This symbol appears beside the information sign if there is information in menu 3.1 that you should note.
	These two symbols indicate whether the compressor in the outdoor unit or additional heat in the installation is blocked via the controller. These can, for example, be blocked depending on which operating mode is selected in menu 4.2, if key lock is scheduled in menu 4.9.5 or if an alarm has tripped that blocks one of them. Blocking the compressor Blocking additional heat
	This symbol appears if periodic increase or luxury mode for the hot water is activated.
	This symbol indicates whether "holiday sched." is active in 4.7.
	This symbol indicates whether the controller has contact with NIBE Uplink.
	This symbol indicates the actual speed of the fan if the speed has changed from the normal setting. Accessory ERS needed.
	This symbol indicates whether a photovoltaic climate system is active. Accessory EME needed.
	This symbol indicates whether pool heating is active. Accessory POOL 40 needed.
	This symbol indicates whether cooling operation is active.



OPERATION

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



SELECTING MENU

To advance in the menu system, choose a main menu by selecting it and then pressing the OK button. A new window then opens with submenus. Choose one of the submenus by selecting it and then pressing the OK button.

Setting a value



Values to be changed

SELECTING OPTIONS



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



To choose another option

1. Select the applicable option. One of the options is pre-selected (white).
2. Press the OK button to confirm the selected option. The selected option has a green tick.



To set a value:

1. Select the value you want to set using the control knob.
2. Press the OK button. The background of the value turns green, which means that you have accessed the setting mode.
3. Turn the control knob to the right to increase the value and to the left to reduce the value.
4. Press the OK button to confirm the value you have set. To change and return to the original value, press the Back button.

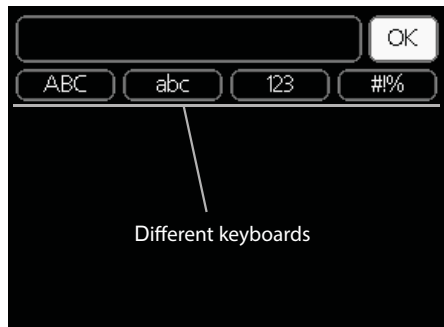
01

01

04

04

Use the virtual keyboard



In some menus where text may need to be entered, a virtual keyboard is available.



Depending on the menu, you can access different character sets which you can select using the control knob. To change character table, press the Back button. If a menu only has one character set, the default keyboard is displayed automatically. When you have finished writing, select "OK" and press the OK button.

Scroll through the windows

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




Scroll through the windows in the start guide



Arrows to scroll through window in start guide

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

Help menu

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

To view the help text:

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

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

9 Control

Menu 1 - INDOOR CLIMATE

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

¹ The ERS additional equipment is necessary.

Menu 2- HOT WATER

2- HOTWATER	2.1- temporary lux	
	2.2- comfort mode	
	2.3- scheduling	
	2.9- advanced	2.9.1- periodic increase
		2.9.2- hot water recirc. ²

Menu 3- INFO

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

² The AXC 30 additional equipment is necessary.

Menu 4- MY SYSTEM

4- MY SYSTEM	4.1- plus functions	4.1.1 - pool ³		
		4.1.2- pool 2 ³		
		4.1.3- internet	4.1.3.1- Uplink	
			4.1.3.8- tcp/ip settings	
			4.1.3.9- proxy settings	
		4.1.4- sms ⁴		
		4.1.5- SG Ready		
		4.1.6- smart price adapt.		
		4.1.7- smart home		
		4.1.8- smart energy source	4.1.8.1- settings	
			4.1.8.2- set. price	
			4.1.8.3- CO2 impact	
			4.1.8.4- tariff periods, electricity	
			4.1.8.6- tariff per, ext. shunt add	
			4.1.8.7- tariff per, ext. step add	
			4.1.8.8- tariff periods	
		4.1.10- solar electricity ⁵		
		4.2- op. mode		
		4.3- my icons		
		4.4- time & date		
		4.6- language		
		4.7- holiday setting		
		4.9- advanced	4.9.1- op. prioritisation	
			4.9.2- auto mode setting	
			4.9.3 - degree minute setting	
			4.9.4- factory setting user	
			4.9.5- schedule blocking	
			4.9.6- schedule silent mode	

³ The POOL 40 additional equipment is necessary.

⁴ The SMS 40 additional equipment is necessary.

⁵ The EME 20 additional equipment is necessary.

Menu 5- SERVICE

5- SERVICE	5.1- operating settings	5.1.1- hot water settings ⁶	
		5.1.2- max flow line temperature	
		5.1.3- max diff flow line temp.	
		5.1.4- alarm actions	
		5.1.5- fan sp. exhaust air ⁷	
		5.1.6- fan sp. supply air ⁷	
		5.1.12- addition	
		5.1.14- flow set. climate system	
		5.1.22- heat pump testing	
		5.1.23- compressor curve	
		5.1.25- time filter alarm	
	5.2- system settings	5.2.2- installed slaves	
		5.2.3- docking	
		5.2.4- accessories	
	5.3- accessory settings	5.3.2- shunt controlled add. heat	
		5.3.3- extra climate system ⁸	
		5.3.4- solar heating ⁹	
		5.3.6- step controlled add. heat	
		5.3.8- hot water comfort ⁶	
		5.3.11- modbus ¹⁰	
		5.3.12- exhaust/supply air module ⁷	
		5.3.14- F135 ¹¹	
		5.3.15- GBM communications module ¹²	
		5.3.16- humidity sensor ¹³	
		5.3.21- flow sensor / energy meter ¹⁴	
	5.4- soft in/outputs		
	5.5- factory setting service		
	5.6- forced control		
	5.7- start guide		
	5.8- quick start		
	5.9- floor drying function		
	5.10- change log		
	5.11- slave settings	5.11.1- EB101	5.11.1.1- heat pump
			5.11.1.2- charge pump (GP12)
		5.11.2- EB102	
		5.11.3- EB103	
		5.11.4- EB104	
		5.11.5- EB105	
		5.11.6- EB106	
		5.11.7- EB107	
		5.11.8- EB108	
	5.12- country		

⁶ The AXC 30 additional equipment is necessary.

⁷ The ERS additional equipment is necessary.

⁸ The ECS additional equipment is necessary.

⁹ The SOLAR 40 additional equipment is necessary.

¹⁰ The MODBUS 40 additional equipment is necessary.

¹¹ The F135 additional equipment is necessary.

¹² The OPT 10 additional equipment is necessary.

¹³ The HTS 40 additional equipment is necessary.

¹⁴ The EMK 300 additional equipment is necessary.

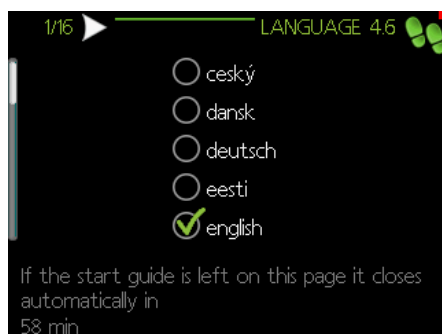
Start guide

The start guide will appear the first time that the BA-SVM 10-200 controller is started up. The start guide can also be launched independently in menu 5.7. The individual settings for the start guide's factory settings are described below.

1/16 Language

In this menu, select the operating language of the controller.

Factory settings: English



2/16 Information

This menu displays information about the start guide.

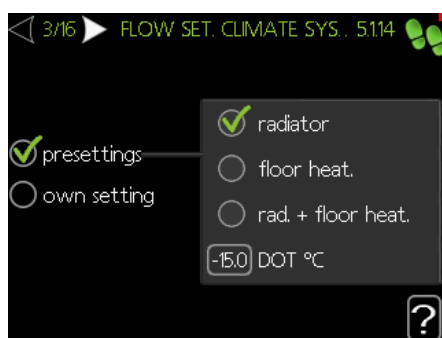
3/16 Flow set. climate system

In this menu, you can choose the basic settings for the climate system. For more information select "?".

Factory setting: presets

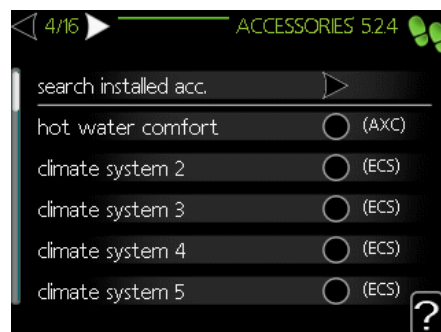
Factory setting: radiator

Factory setting: -15.0 DOT C

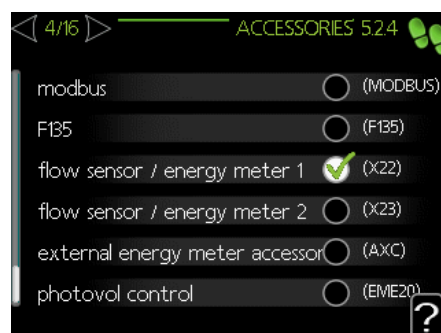


4/16 Accessories

In this menu, you can activate additional accessories that are connected. For more information select "?".



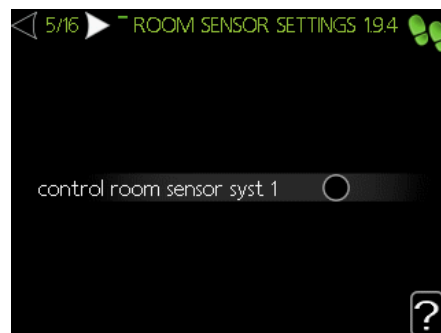
Factory setting: Flow sensor / energy meter 1 (BA-SVM 10-200 EM only)



5/16 Room temp. sensor set.

Settings for the room sensor (accessory) can be activated and changed in this menu. For more information select "?".

Factory setting: deactivated



6/16 Outdoor temp. sensor check

In this menu, you can check the permissible values for the external sensors. For more information select "?".

7/16 Add. heat

In this menu, you can choose the settings for the additional heat (built-in electric module). For more information select "?".

Factory settings:

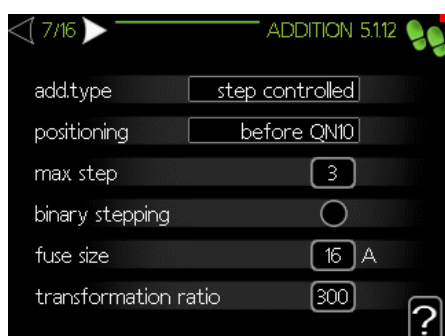
add.type: step controlled
positioning: before QN10
max step: 3
binary stepping: deactivated
fuse size: 16 A
transformation ratio: 300



CAUTION

In the case of a fuse rating with a smaller value (applies to the main fuse rating in the house) you can set this value lower than 16 A. Note, this will reduce the power of the appliance. Connecting current sensors is required.

You cannot set this value higher than 20A.



8/16 Installed slave devices

In this menu, you can select slave devices. For more information select "?".

Factory settings:

Slave 1: active (EB101)

9/16 Time and date

In this menu, set the current date and time. There is also the option to choose the time display format and time zone.

10/16 Min. heat. supply. temp.

In this menu, you can edit the minimum supply temperature of the climate system. For more information select "?".

Factory settings:

Climate system 1: 20 C

11/16 Max. heat. supply. temp.

In this menu, you can edit the maximum supply temperature of the climate system. For more information select "?".

Factory settings:

Climate system 1: 55 C

The recommended setting values are:

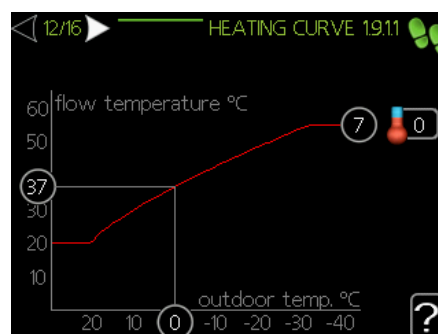
- + 35 for under floor heating systems,
- + 55 for radiator heating.

12/16 Heating curve

In this menu, you can edit the heating curve for the BA-SVM 10-200 unit. For more information select "?".

Factory settings:

Heating curve: 7

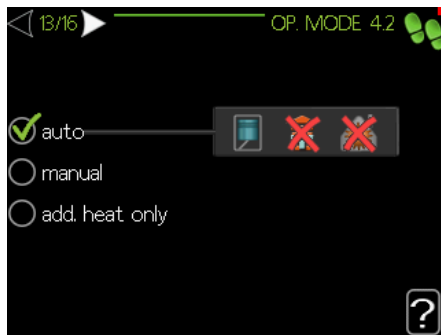


For detailed information on curve settings, see pt. "User settings."

13/16 Operating mode

In this menu, you can choose the operating mode for the BA-SVM 10-200 unit. For more information select "?".

Factory settings: auto



NOTE

Recommended operating mode "auto". This may only be edited by qualified persons.

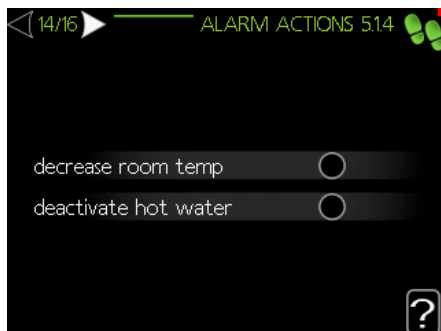
14/16 Alarm actions

In this menu, you can activate alarm actions. For more information select "?".

Factory settings:

Reduce room temp.: deactivated

Stop hot water: deactivated



15/16 Reminder

Reminder to fill in the checklist in section 1 of the User manual.

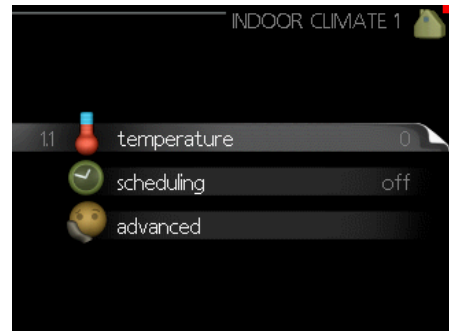
16/16 Start guide

In this menu, you can choose whether the start guide will restart the next time the system is started up.

User settings

Menu 1 – Indoor climate

The INDOOR CLIMATE menu is used to modulate the settings for the climate system. There are several submenus. Status information for the relevant menu can be found on the display to the right of the menus.



Menu 1.1 – Temperature

In this menu, you can set the temperature for the climate system. The status information shows the set point values for the climate system.

In Menu 1.1 choose between heating or cooling (if active) and then set the desired temperature in the next menu "Heating/cooling temperature".

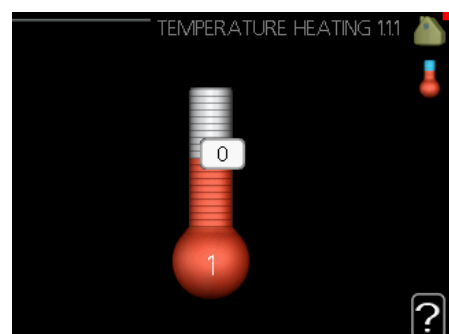
The display shows the set point values for the system (offset heating curve). To increase or reduce the indoor temperature, increase or reduce the value on the display.

For more information select "?".

Setting the temperature (without room sensors activated):

Setting range: -10 do +10

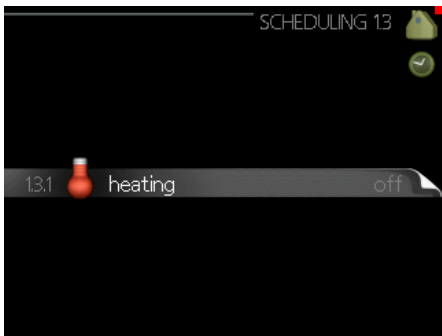
Factory setting: 0



Menu 1.3- Scheduling

In this menu, you can schedule the room temperature (heating/cooling/ventilation) for each day of the week. You can also schedule a longer period during a selected period (holiday) in menu 4.7.

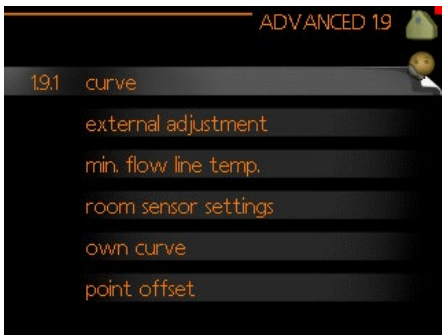
In menu 1.3, select heating or cooling (if active), then program an increase or decrease in the room temperature for a maximum of three time periods per day. For more information select "?".



Factory settings:
Heating: off
Cooling (if activated): off

- Activated:** Scheduling for the selected period is activated here. Set times are not affected at deactivation.
- System:** Select here which climate system the schedule is for. This option is only displayed if more than one climate system is present.
- Day:** Select which day or days of the week the scheduling is to apply to here. To remove the scheduling for a particular day, the time for that day must be reset by setting the start time to be the same as the finish time. If the line "all" is used, days in the period will be set for these times
- Time period:** The scheduled start and finish time for the selected day are selected here.
- Adjustment:** See relevant sub menu.
- Conflict:** If two settings conflict with each other, a red exclamation mark is displayed.

Menu 1.9- Advanced



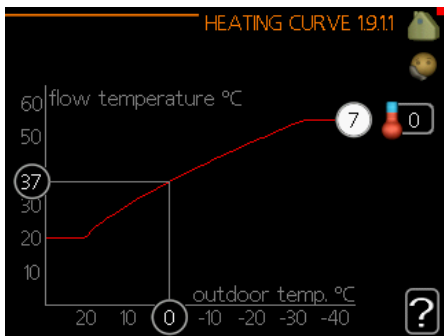
This menu is intended for advanced users. It contains several other submenus.

Menu 1.9.1- Curve

You can select heating or cooling operation in the curve menu. The next menu (heating curve/cooling curve) shows the heating and cooling curves for your house. The curve is designed to ensure a constant indoor temperature, regardless of the outdoor temperature, and thereby ensure energy-efficient operation. It is from these heat curves that the heat pump's controller determines the temperature of the heating medium in the system, the supply temperature, and therefore the indoor temperature. Select the curve and read off how the supply temperature changes at different outdoor temperatures here. The number to the far right of "system" displays which system you have selected the heating curve/cooling curve for.

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

The curve is set when the climate system is installed, but may need adjusting later. Normally, the curve will not need further adjustment. For more information select "?".



Factory settings:
Heating curve: 7

NOTE
When making fine adjustments to the indoor temperature, the curve must be offset up or down, this is done in menu 1.1-Temperature.

CAUTION
In underfloor heating systems, the max. supply temperature is usually set between 35 and 45 °C.

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

Curve 0 is your own curve created in menu 1.9.7.



TIP

Wait 24 hours before changing settings again, so that the room temperature has time to stabilise.

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

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

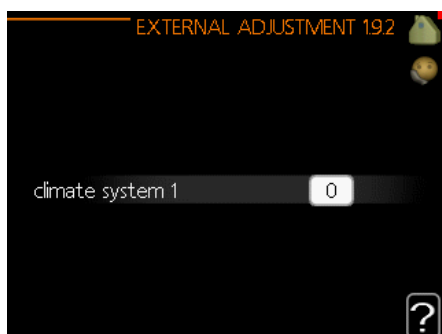
If it is warm outdoors and the room temperature is too low, increase the curve offset by one step.

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

Menu 1.9.2- External adjustment

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

If there is more than one climate system, separate settings can be entered for each system. For more information select "?".



Factory settings:

Heating

Climate system 1: 0

Cooling (if activated)

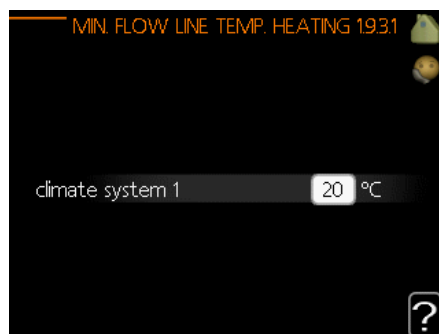
Climate system 1: 0

Menu 1.9.3- Min. supply temp.

Select heating or cooling operation in menu 1.9.3, and in the next menu (min. supply temp.heating/cooling) set the minimum supply temperature of the climate system. This means that BA-SVM 10-200 never calculates a temperature lower than the one set here.

If there is more than one climate system, separate

settings can be entered for each system.



Factory settings:

Heating

Climate system 1: 20 °C

Cooling (if activated)

Climate system 1: 18 °C



TIP

The value can be increased if you have, for example, a cellar that should always be heated, even in summer. You can also increase the values in "stop heating", menu 4.9.2 "Auto mode setting".

Menu 1.9.4- Room sensor settings

Room sensors to adjust the room temperature (not included) can be activated here.



NOTE

A slow heat-releasing heating system such as, for example, underfloor heating, may not be suitable for control using the heat pump's room sensor.

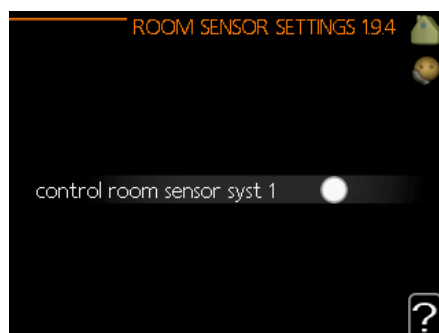
Here you can set a factor (a numerical value) that determines how much an over or sub normal temperature (the difference between the desired and actual room temperature) in the room is to affect the supply temperature to the climate system. A higher value gives a greater and faster change of the offset heating curve. For more information select "?".



CAUTION

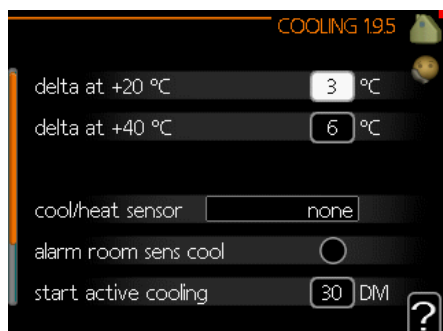
Too high a set value for "system factor" can (depending on your climate system) produce an unstable room temperature.

Factory settings: off



Menu 1.9.5- Cooling operation settings

BA-SVM 10-200 can be used to cool the house during hot periods of the year. For more information select "?".



heat./cool. sensor

An extra temperature sensor can be connected to the heat pump in order to determine when it is time to switch between heating and cooling operations. When several heating/cooling sensors are installed, you can select which one of them should be in control.



NOTE

When the heating/cooling sensors BT74 have been connected and activated in menu 5.4, no other sensor can be selected in menu 1.9.5.

start active cooling

Here you can set when active cooling is to start. Degree minutes are a measurement of the current heating demand in the house and determine when the compressor, cooling operation or additional heat will be started/stopped.

Factory settings:

Delta at +20 C.: 3 °C

Delta at +40 C.: 6 °C

Heat./cool. sensor: N/A

Alarm- room sens. cooling: deactivated

Start active cooling 30 DM

Time betw. switch heat/cool: 2 hours

Menu 1.9.7- My curve

In this menu, you can create your own heating or cooling curve by setting the desired supply temperatures for different outdoor temperatures.



NOTE

Curve 0 in menu 1.9.1 must be selected in order for "My curve" to apply.



NOTE

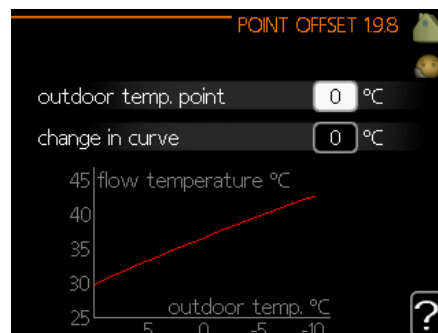
"My curve" may only be edited by qualified persons.

Menu 1.9.8- Point offset

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

The heating curve is affected at ± 5 °C from the set outdoor temperature point.

It is important that the correct heating curve is selected so that the room temperature is experienced as constant. For more information select "?".



NOTE

Point offset may only be edited by qualified persons.

Menu 2- HOT WATER

The hot water menu is used for adjusting hot water settings. The user can edit temperatures and operating modes for hot water. Within this menu there are several submenus. Status information for the relevant menu can be found on the display to the right of the menus.



Menu 2.1- Temporary lux.

Activation of a temporary increase in the hot water temperature. Status information reads "off", or the duration of the temporary increase in temperature. For more information select "?".

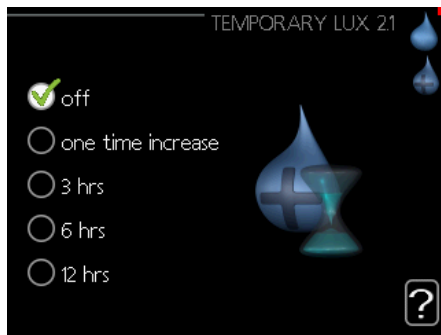
Factory settings: off

When hot water demand has temporarily increased, this menu can be used to select an increase in the hot water temperature to luxury mode for a specified time.



NOTE

If the "luxury" comfort mode is selected in menu 2.2, the temperature cannot be increased any further.



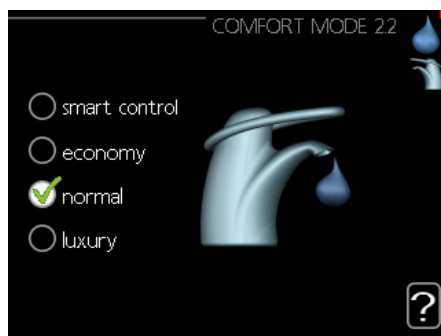
The function is activated immediately once a time period is selected and confirmed using the OK button. The remaining time for the selected setting is shown to the right. When the time has run out, the controller returns to the mode set in menu 2.2.

Please select "off" to switch off temporary lux. mode.

Menu 2.2- Comfort mode

In this menu, you can select the operating modes for various hot water temperatures. For more information select "?".

Factory setting: normal



Smart control - In this menu, you can activate the Smart Control function. The function learns the previous week's hot water consumption and adapts the temperature in the water heater for the coming week to ensure minimal energy consumption.

If the hot water demand is greater, there is a certain additional amount of hot water available.

When the Smart Control function is activated, the water heater delivers the performance reported on the energy label.

Economy- provides a smaller amount of hot water, but is more economical. This mode can be used in smaller households with a small hot water demand.

Normal - Normal mode provides a larger amount of hot water and is suitable for most households.

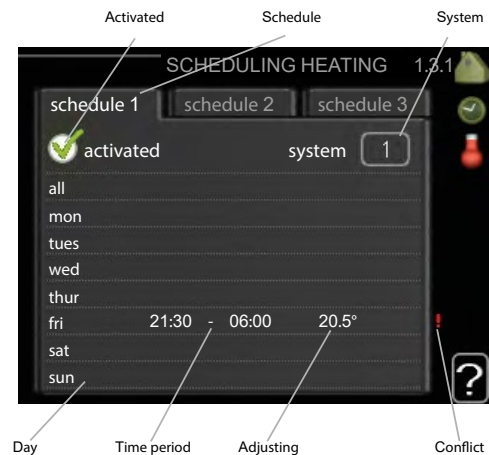
Luxury- Luxury mode provides the greatest possible amount of hot water. In this mode, the additional

heat, as well as the compressor, may be used to heat hot water, which may increase operating costs.

Menu 2.3- Scheduling

Two different periods of hot water temperature per day can be scheduled here. Scheduling is activated/deactivated by ticking/unticking "on". Set times are not affected at deactivation. For more information select "?".

Factory setting: off



Schedule: The schedule to be changed is selected here.

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

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

Time period: The scheduled start and finish time for the selected day are selected here.

Adjustment: Set the hot water temperature that is to apply during scheduling here.

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

Factory settings: off



TIP

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

Menu 2.9- Advanced

The advanced menu is intended for advanced users.

Menu 2.9.1- Periodic increase

To prevent bacterial growth in the hot water tank, the compressor and the immersion heater can increase the hot water temperature for a short time at regular intervals. For more information select "?".

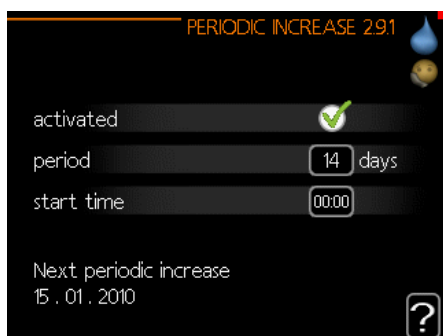
The frequency of temperature increases can be selected here. The length of time can be set between 1 and 90 days. The factory setting is 14 days. Tick/untick "on" to start/stop the function.

Factory settings:

Activated: activated

Period: 14 days

Start time: 00:00

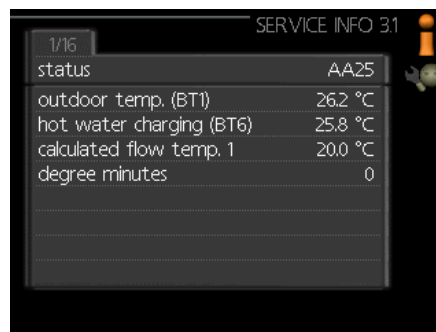


Menu 3- Info

The information menu is used for reading information. Status information for the relevant menu can be found on the display to the right of the menus.

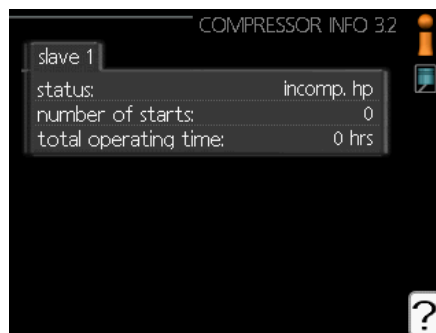
Menu 3.1- Service info

Information about the heat pump's current operating status (e.g. current temperatures etc.) can be obtained here. This menu cannot be edited. The information is on several pages. Turn the control knob to scroll between the pages. A QR code appears on one side. This QR code indicates serial number, product name and limited operating data.



Menu 3.2- Compressor info

Information about the compressor's operating status and statistics can be obtained here. This menu cannot be edited. The information is on several pages. Turn the control knob to scroll between the pages. For more information select "?".



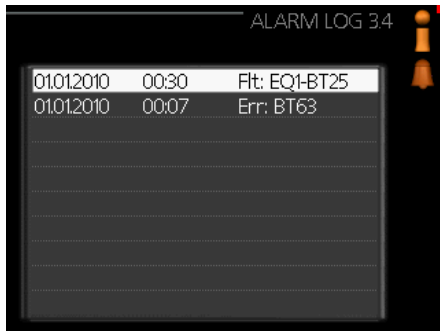
Menu 3.3- Add. heat info

Information about the additional heat settings, operating status and statistics can be obtained here. This menu cannot be edited. The information is on several pages. Turn the control knob to scroll between the pages. For more information select "?".



Menu 3.4- Alarm log

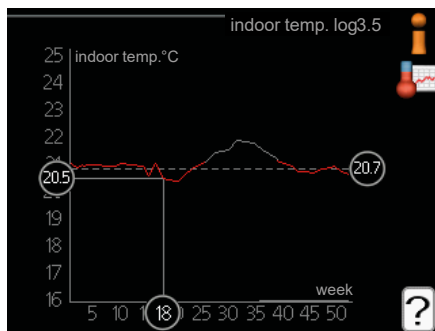
To facilitate fault-finding, the heat pump's operating status at the time of the alarm is recorded here. You can see information for the 10 most recent alarms. To view operating status in the event of an alarm, select the alarm and press the OK button.



Menu 3.5- Room temp. log

Here you can see the average indoor temp. - temp. log week by week over the past year. The dotted line indicates the annual average temperature.

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



To read the average temperature

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

Menu 4- MY SYSTEM

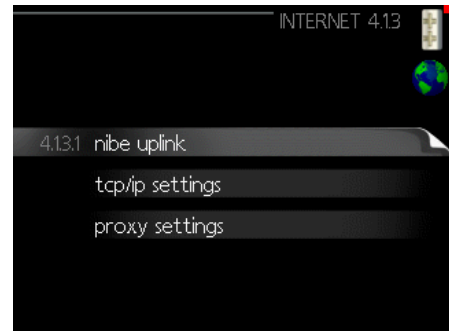
Information about the controller's operation and settings can be viewed in this menu. Status information for the relevant menu can be found on the display to the right of the menus.

Menu 4.1- Additional functions

Settings for any additional functions installed in BA-SVM 10-200 can be changed in the submenus.

Menu 4.1.3- Internet

You can configure BA-SVM 10-200 unit internet connection in this menu. For more information select "?".

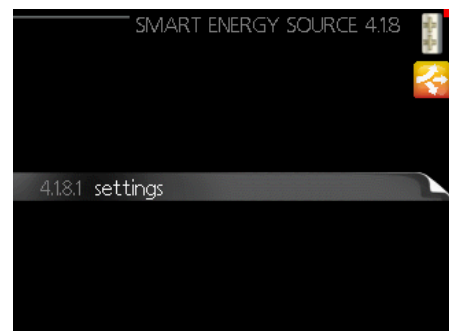


CAUTION

For these functions to work the network cable must be connected.

Menu 4.1.8- Smart Energy Source™

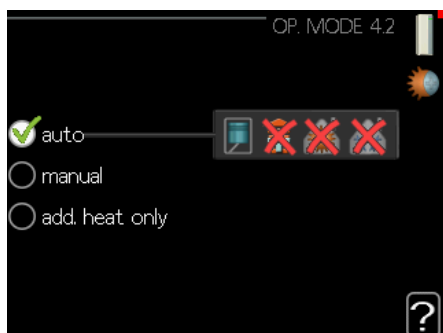
The function prioritises how / to what extent each docked energy source will be used. Here you can choose if the system is to use the energy source that is cheapest at the time. You can also choose if the system should use the energy source that is most carbon neutral at the given time. For more information select "?".



Menu 4.2- Operating mode

The heat pump operating mode is normally set to "auto." The heat pump can also be set to "add. heat only," but only when using the additional heat, or "manual" and select the available functions yourself. Change the operating mode by selecting the desired mode and pressing the OK button. When an operating mode is selected, the available functions of the heat pump (crossed out = not available) and options will be displayed on the right. To choose which functions should be available or not available, select the function using the control knob and press the OK button. For more information select "?".

Factory settings: auto



Auto

In this operating mode, the heat pump automatically selects what functions are available to select.

Manual

In this operating mode you can select what functions will be available to select. It is not possible to deselect "compressor" in manual mode.

Add. heat only

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



CAUTION

Selecting the "add. heat only" mode will block the compressor and result in higher costs for running the system.

Menu 4.4 - Date and time

Set time and date, display mode and time zone in this menu.

Menu 4.6 - Language

In this menu, choose the language that you want the information to be displayed in.

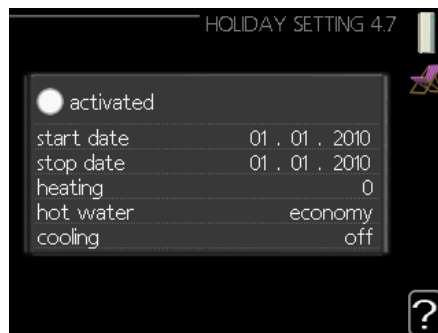
Menu 4.7- Holiday sched.

To reduce energy consumption during a holiday you can schedule a reduction in heating and hot water temperature. Cooling operation, ventilation, pool and solar collector cooling can also be scheduled if the functions are connected.

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

If a room sensor is not activated, set the desired offset of the heating curve. One step is usually enough to change the room temperature by one degree, but in some cases several steps may be required. This setting applies to all climate systems without room sensors.

Holiday scheduling starts at 00:00 on the start date and stops at 23:59 on the finish date.



NOTE

If you choose to stop hot water production for a holiday, "periodic increase" (preventing bacterial growth) will be blocked during this time. "periodic heat increase" will start up in conjunction with the vacation setting ending.

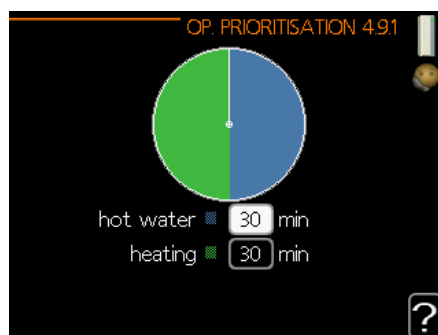
Menu 4.9- Advanced

In this menu, you can configure the advanced operational functions of the controller for BA-SVM 10-200. For more information select "?".

Menu 4.9.1- Operating priority

Choose here how long the heat pump should work with each requirement if there are two or more requirements at the same time (e.g. for heating and hot water). If there is only one requirement, the heat pump only works with that requirement.

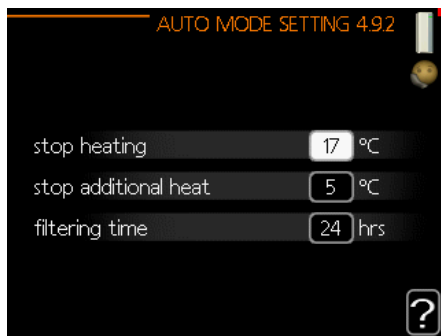
The indicator marks where in the cycle the heat pump is. If 0 minutes is selected it means that requirement is not prioritised, and will only be activated when there is no other requirement. For more information select "?".



Menu 4.9.2- Auto mode setting

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

Select the average outdoor temperatures in this menu. You can also set the time (filtering time) at which the average temperature is calculated. If you select 0, the current outdoor temperature is used. For more information, select "?".



Factory settings:

Stop heating: 17°C

Stop add. heat: 5°C

Filtering time: 24 hrs



NOTE

You cannot set "stop add. heat" higher than "stop heating".

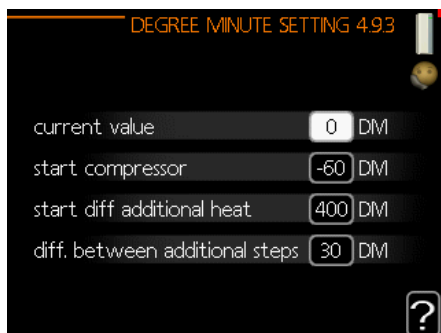


NOTE

In systems where heating and cooling share the same pipes, „stop heating“ cannot be set higher than „start cooling“ if there is no cooling/heating sensor.

Menu 4.9.3- Degree minute value

Degree minutes are a measurement of the current heating demand in the house and determine when the compressor or additional heat will be started/stopped. For more information select "?".



Factory settings:

Current value: 0 DM

Start compressor: -60 DM

start diff. add. heat: 400 DM

diff. between additional steps: 30 DM



NOTE

A higher value for „start compressor“ causes more frequent compressor starts, which increases wear on the compressor. Too low a value can give uneven indoor temperatures.

Menu 4.9.4- Factory setting user

All settings that are available to the user (including advanced menus) can be restored to default values here. For more information select "?".



NOTE

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

Menu 4.9.5- Blocking sched.

The compressor can be scheduled to be blocked for up to two different time periods here. When scheduling is active, the actual blocking symbol in the main menu on the heat pump symbol is displayed. For more information select "?".



TIP

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



TIP

Set the finish time earlier than the start time so that the period extends beyond midnight. Scheduling then stops at the set finish time the day after.

Scheduling always starts on the same day as the start time is set.



NOTE

Long term blocking can cause reduced comfort and operating economy.

Service submenus

Go to the main menu and press down on the Back button for 7 seconds to access the Service menu.

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

- *Operating settings* Operating settings for the control module.
- *System settings* System settings for the control module, activating accessories etc.
- *Accessory settings* Operational settings for different accessories.
- *Prog. input/output* Software-controlled setting of inputs and outputs on the input card (AA3) and terminal block (x2).
- *Factory setting service* Total reset of all settings (including settings available to the user) to default values.
- *Forced control* Forced control of the various components of the indoor unit.
- *Start guide* Manual launch of the start guide which is run the first time the control module is started.
- *Quick start* Quick start of the compressor.



CAUTION

Incorrect settings in the service menus can damage the system, the heat pump and the indoor unit.

Menu 5.1- Operating settings

Operating settings for the control module can be set in the submenus.

Menu 5.1.1- Hot water settings

Operating settings for the control module can be set in the submenus.

economy

Start temp. setting range in econ. mode: 5 – 55 °C

Start temp. factory setting in econ. mode: 39°C

Stop temp. setting range in econ. mode: 5 – 60°C

Stop temp. factory setting in econ. mode: 43°C

normal

Start temp. setting range in normal mode: 5 – 60°C

Start temp. factory setting in normal mode: 42°C

Stop temp. setting range in normal mode: 5 – 65°C

Stop temp. factory setting in normal mode: 46°C

luxury

Start temp. setting range in lux. mode: 5 – 65°C

Start temp. factory setting in lux. mode: 45°C

Stop temp. setting range in lux. mode: 5 – 65°C

Stop temp. factory setting in lux. mode: 49°C

stop. temp. periodic increase

Setting range: 55 – 65°C

Factory setting: 60°C

step difference compressors

Setting range: 0,5 – 4,0°C

Factory setting: 1,0°C

charge method

Setting range: target temp., delta temp.

Factory setting: delta temp.

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

Menu 5.1.2- Max. supply temperature

climate system

Setting range: 5-65°C

Factory setting: 55°C

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



NOTE

In underfloor heating systems, the max. supply temperature is set between 35 and 45 °C.

For information on the maximum permitted underfloor heating supply temperature, ask your floor and heating system supplier/contractor.

Menu 5.1.3- Max. diff. supply temp.

max. diff. compressor

Setting range: 1 – 25°C

Factory setting: 10°C

max. diff. add. heat

Setting range: 1 – 24°C

Factory setting: 7°C

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

Max. diff. compressor

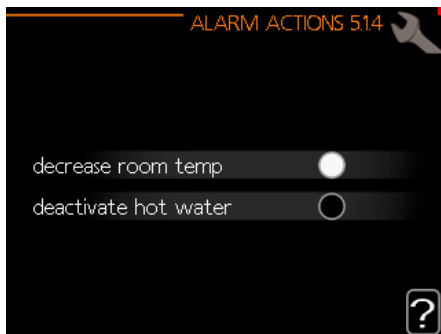
If the current supply temperature exceeds the supply calculated using the set point value, the degree minute value is set to 0. The compressor in the heat pump stops when there is only a heating demand.

Max. diff. add. heat

If "add. heat" is selected and activated in menu 4.2 and the current supply temperature exceeds that calculated using the set point value, the additional heat will be forced to stop.

Menu 5.1.4 - Alarm actions

Indicate here if you would like the control module to inform you of the presence of an alarm on the display. One option is that the heat pump stops producing hot water and/or reduces the room temperature.



NOTE

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

Menu 5.1.5- Fan speed, exhaust.



CAUTION

Menu 5.1.5 is deactivated in the factory settings. For this menu function to be active, it is necessary to install accessory ERS and activate it in the Accessories menu 5.2.4.

For detailed information on accessory settings, see the instructions for the given accessory.

Normal and speed 1-4

Setting range: 0 – 100 %

Factory setting normal: 75%

Factory setting speed 1: 0%

Factory setting speed 2: 30%

Factory setting speed 3: 80%

Factory setting speed 4: 100%

Set the speed from the five different available speeds for the fan here.



NOTE

An incorrectly set ventilation flow can damage the building and may also increase energy consumption due to the electric heater operation.

Menu 5.1.6- Fan speed, supply.



CAUTION

Menu 5.1.6 is deactivated in the factory settings. For this menu function to be active, it is necessary to install accessory ERS and activate it in the Accessories menu 5.2.4.

Normal and speed 1-4

Setting range: 0 – 100 %

Factory setting normal: 75%

Factory setting speed 1: 0%

Factory setting speed 2: 30%

Factory setting speed 3: 80%

Factory setting speed 4: 100%

Set the speed from the five different available speeds for the fan here.

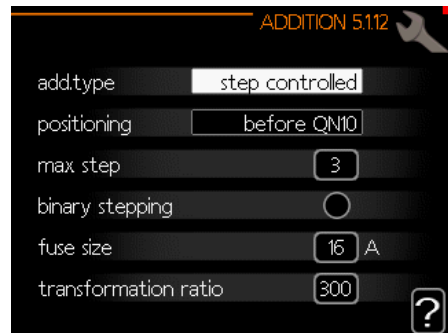


NOTE

An incorrect set point value may damage the building in the long term and possibly increase energy consumption.

Menu 5.1.12- Add. heat

The settings in this menu pertain to how the additional heat is controlled.



CAUTION

The factory settings in menu 5.1.12 are the required settings. Only authorised installers and service technicians are able to edit these settings!

Factory setting: add.type: step controlled

Factory setting: positioning: before QN10 (REQUIRED)

Max. step

Setting range (binary stepping deactivated): 0 – 3

Setting range (binary stepping activated): 0 – 7

Factory setting max. step: 3

Binary stepping

Setting range: activated / deactivated

Factory settings:

deactivated

Fuse size

Setting range: 1- 20 A

Factory setting: 16 A

Transformation ratio

Setting range: 300- 3000

Factory setting: 300

Menu 5.1.14- Flow set. climate system

Factory setting: presetting

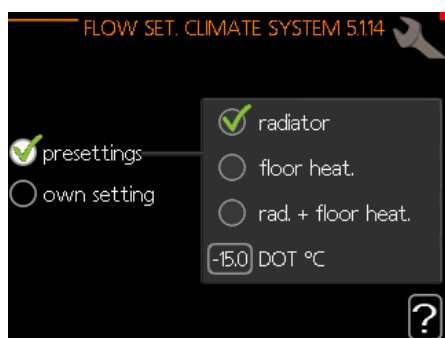
Setting range: radiator, underfloor heat., centr. heat. + underfloor heat., DOT °C

Factory setting: radiator

Setting range DOT: -40,0 – 20,0°C

The factory setting of the DOT value is given for climatic zone III in Poland.

Factory setting DOT: -15,0°C



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

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

Menu 5.1.22- Heat pump testing



CAUTION

This menu is used to test the controller's compliance with various standards. Using this menu for other purposes may result in your installation not functioning as intended.

This menu contains several submenus, one for each standard.

Menu 5.1.23- Compressor curve



NOTE

Compressor curve can be edited only by qualified persons.



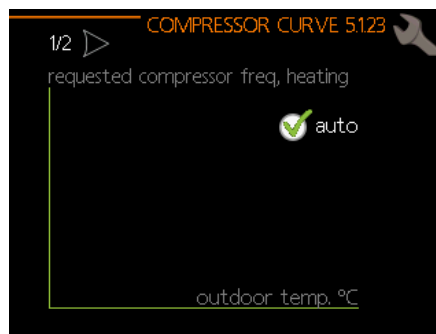
CAUTION

This menu is only displayed if the controller is connected to a heat pump with inverter-controlled compressor.

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

To set a curve for a requirement (heat, hot water etc.), untick "auto", turn the control knob until a temperature is selected and press OK. You can now set at which temperatures the max. and min. frequencies will occur.

This menu may contain several windows (one for each available requirement). To navigate between windows, use the arrows at the top left corner.



Menu 5.2- System settings

Choose various system settings here, e.g. activate a connected slave device or an installed accessory.

Menu 5.2.2- Installed slave devices

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

There are two ways of activating connected slave devices. You can either select the given option in the list or use the automatic function "search installed slave devices".

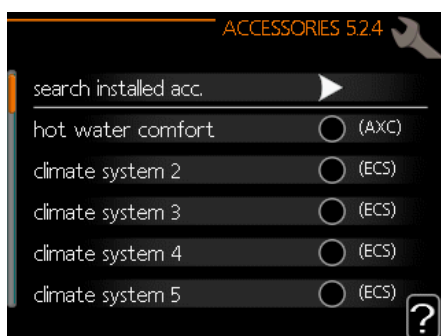
Search installed slave devices

Select "search installed slave devices" and press the OK button to automatically find connected slaves for the master heat pump.

Menu 5.2.4- Accessories

Here is where it states if an accessory is installed (see "Accessories" section).

There are two ways of activating connected accessories. You can either select the given option in the list or use the automatic function "search installed accessories".

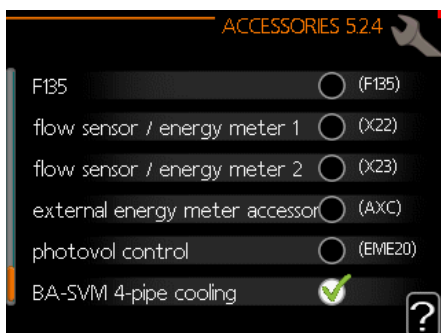


Search installed accessories

Select "search installed accessories" and press the OK button to automatically find connected accessories for the controller.

ACTIVATING THE 4-PIPE COOLING OPERATION

In order to activate 4-pipe cooling, select the function "BA-SVM 4-pipe cooling".



Menu 5.3- Accessory settings

The operating settings for installed and activated accessories are entered in the submenus for this.



CAUTION

Menu 5.3 is deactivated in the factory settings. For this menu function to be active, it is necessary to install an accessory and activate it in the Accessories menu 5.2.4.

For a detailed description of how to program accessories, refer to the instructions of the individual accessories.

Menu 5.3.2- Add. heat. ctrl shunt valve



CAUTION

Menu 5.3.2 is deactivated in the factory settings. For this menu function to be active, it is necessary to install accessory AXC 30 and activate it in the Accessories menu 5.2.4.

For a detailed description of how to program accessories, refer to the instructions of the individual accessories.

Menu 5.3.3- Additional climate system



CAUTION

Menu 5.3.3 is deactivated in the factory settings. For this menu function to be active, it is necessary to install accessory ECS and activate it in the Accessories menu 5.2.4.

For a detailed description of how to program accessories, refer to the instructions of the individual accessories.

Menu 5.3.6- step controlled add. heat



CAUTION

Menu 5.3.6 is deactivated in the factory settings. For this menu function to be active, it is necessary to install accessory AXC 30 and activate it in the Accessories menu 5.2.4.

For a detailed description of how to program accessories, refer to the instructions of the individual accessories.

Menu 5.3.11- Modbus



CAUTION

Menu 5.3.11 is deactivated in the factory settings. For this menu function to be active, it is necessary to install accessory MODBUS 40 and activate it in the Accessories menu 5.2.4.

For a detailed description of how to program accessories, refer to the instructions of the individual accessories.

Menu 5.3.12- Exhaust/supply air module



CAUTION

Menu 5.3.12 is deactivated in the factory settings. For this menu function to be active, it is necessary to install accessory ERS and activate it in the Accessories menu 5.2.4.

For a detailed description of how to program accessories, refer to the instructions of the individual accessories.

Menu 5.3.14- F135



CAUTION

Menu 5.3.14 is deactivated in the factory settings. For this menu function to be active, it is necessary to install accessory F135 and activate it in the Accessories menu 5.2.4.

For a detailed description of how to program accessories, refer to the instructions of the individual accessories.

Menu 5.3.16- Humidity sensor



CAUTION

Menu 5.3.16 is deactivated in the factory settings. For this menu function to be active, it is necessary to install accessory HTS 40 and activate it in the Accessories menu 5.2.4.

For a detailed description of how to program accessories, refer to the instructions of the individual accessories.

Menu 5.3.21- flow sensor / energy meter



CAUTION

Menu 5.3.21 is deactivated in the factory settings. For this menu function to be active, it is necessary to install accessory EMK and activate it in the Accessories menu 5.2.4.

For a detailed description of how to program accessories, refer to the instructions of the individual accessories.

Menu 5.4- Selectable in/outputs

In this menu you can select which input on the input board (AA3) the external contact function (page 73) can be connected to.

Available inputs on the terminal blocks AUX1-3 (AA3-X6:9-14). The AUX inputs are freely programmable and allow for the introduction of additional functions using external contacts.



CAUTION

The contact to the AUX input must be a potential-free contact (normally open-normally closed).

Input AA3-X7 can be programmed according to your needs.

Factory setting:

SOFT IN/OUTPUTS 5.4	
AUX1	not used
AUX2	not used
AUX3	not used
AUX4	not used
AUX5	(EQ1-BT25)
AUX6	addition (BT63)
AA3-X7	alarm output

Possible configurations AA3-X7:

- Not used,
- Holiday,
- Away mode,
- Alarm output,
- Hot water recirculation,
- Ext heat. med. pump

Menu 5.5- Factory setting service

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



CAUTION

After resetting, the start guide will be displayed the next time the control module is started up, and the settings will be lost.

Menu 5.6- Forced control

You can force control the different components in the control module and any connected accessory in this menu.

This menu is used for testing individual components of the BA-SVM 10-200.

Menu 5.7- Start guide

When the BA-SVM 10-200 controller is started up for the first time, the start guide is automatically launched. In this menu, you have the option to start it manually. See page 38 for more information about the start guide.

Menu 5.8- Quick Start

It is possible to start the compressor from here.



NOTE

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



NOTE

Do not start the compressor too often within a short period of time, as this could damage the compressor and accessories.

Menu 5.9- Underfloor drying function

Length period 1 – 7

Setting range: 0 – 30 days

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

Factory setting, period 4: 3 days

Temp. period 1 – 7

Setting range: 15 – 65°C

Factory setting:

Activated: deactivated

period 1 20°C

period 2 30°C

period 3 40°C

period 4 45°C

period 5 40°C

period 6 30°C

period 7 20°C

Set the function for underfloor drying here.

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

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



TIP

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

Menu 5.10- Changes log

Read off any previous changes to the control system here. The date, time and ID no. (unique to certain settings) and the new set point value is shown for every change.



CAUTION

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

Menu 5.11- Slave device settings

Settings for installed slave devices can be entered in the submenus.

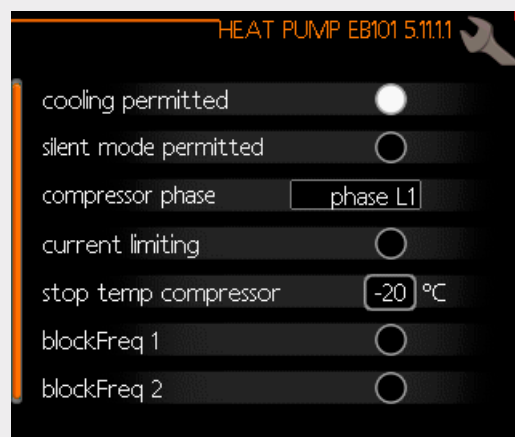
Menu 5.11.1- EB101- 5.11.8- EB108

Enter the settings for the installed slave devices here.

Menu 5.11.1.1- Heat pump

Input the settings for the installed slave device here. To view the available settings, see installation manual for the relevant installed slave device.

Factory setting:



Menu 5.11.1.2- Charge pump (GP12)

Operating mode

Heating/cooling operation

Setting range: auto / intermittent

Factory settings: auto

Set the operating mode for the feed pump here.

Auto: The feed pump runs according to the current operating mode of the controller.

Intermittent: The feed pump starts and stops 20 seconds before and after the compressor in the heat pump.

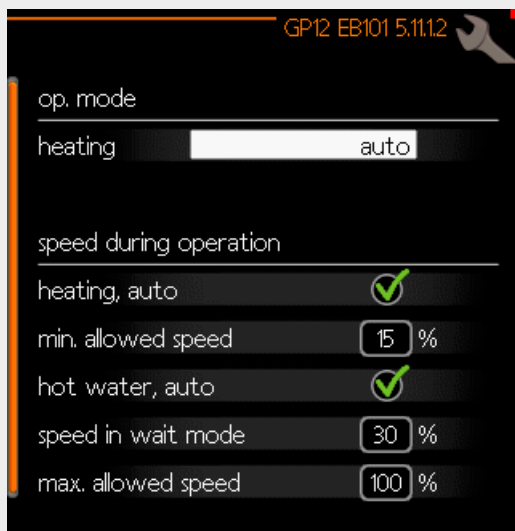
Speed during operation

Heating, hot water, pool, cooling operation

Setting range: auto / manual

Factory settings: auto

Factory setting:



This menu allows you to set the revolutions at which the GP10 circulation pump should work in the current operating mode. In “auto” mode, the feed pump speed is adjusted automatically to ensure optimal operation.

In “auto” mode, you can also set “max. allowed speed” to limit the feed pump and not allow it to operate at higher speeds than the one set.

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

In this menu, you can set the maximum and minimum circulation pump speed. The settings depend on the central heating system.



CAUTION

Changes to the settings in menu 5.11 may only be edited by qualified personnel.

Regardless of the settings entered for cooling mode, the cooling operation is not active. For cooling activation see subsection “Cooling operation settings”.

5.12- Country

This allows access to country-specific settings for your product.

Language settings can be changed regardless of this selection.



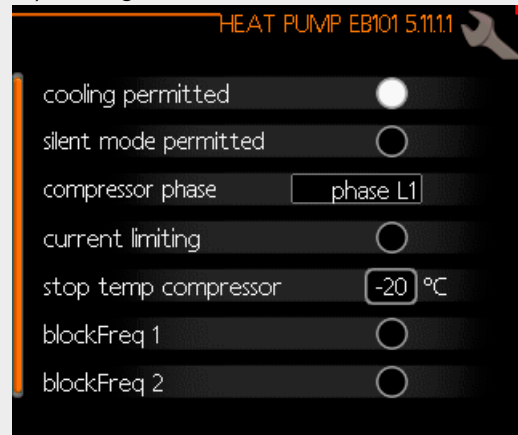
CAUTION

This option locks after 24 hours, after restarting the display or program updating.

Cooling settings

In the factory settings of the BA-SVM 10-200 controller, the cooling operation is deactivated and requires activation in menu 5.11.1.1 in order to start it up.

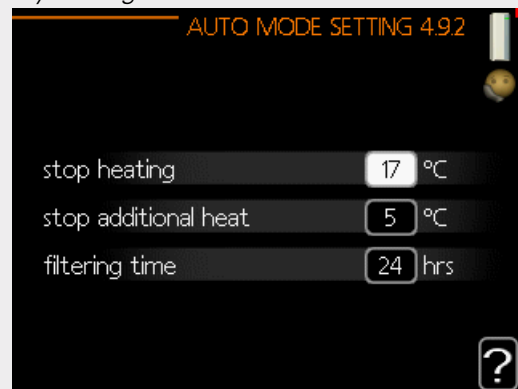
Factory setting:



By default, cooling works in the 2-pipe system. In order to change the cooling mode to 4-pipe, it must be activated in menu 5.2.4.

To start up cooling, change the “start cooling” parameter in menu 4.9.2 to the higher value (applies to the outside temperature) which starts cooling in accordance with the settings in menu 1.9 (settings are in menu 1.9.1.2 and 1.9.3.2).

Factory setting:



If the average temperature calculated by the “filtering time” is higher than the one set,[1]cooling will start in accordance with the settings in menu 1.9 (settings are in menu 1.9.1.2 and 1.9.3.2).



NOTE

Settings for the cooling operation should be selected based upon the existing central heating system. The above cooling operation settings may only be edited by qualified personnel.

10 Service

Service operations




CAUTION

Servicing should only be carried out by persons with the necessary technical expertise.
When replacing components of BA-SVM10-200, use only original spare parts.


Emergency mode



CAUTION

Switch (SF1) must not be put into „“ mode before the installation is filled with water. The circulation pump in the heat pump can be damaged.

Emergency mode is used in case of operational interference and during servicing. Hot water is not produced in emergency mode.

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

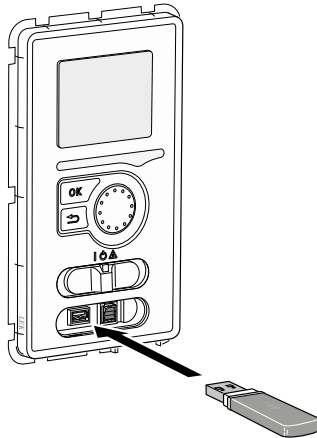
- The status lamp lights up yellow.
- The display is not lit and the control computer is not connected.
- Hot water is not produced.
- The compressors are switched off. Feed pump (EB101-GP12) and feed pump (EB102-GP12) (if installed) are running.
- Accessory is switched off.
- The heating medium pump is active.
- The emergency mode relay (K1) is active.
- Electric module available power- 3kW.

The external additional heat is active if it is connected to the emergency mode relay (K1, terminal block X1). Ensure that the heating medium flows through the external additional heat.

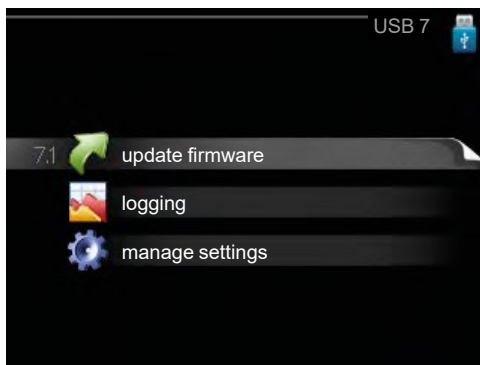
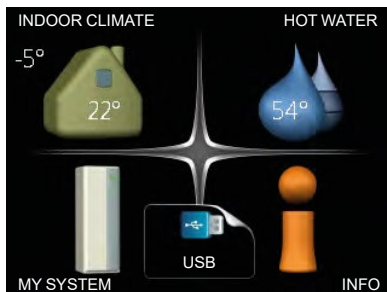
Temperature sensor resistance table

Temperature (°C)	Resistance (kΩm)	Voltage (VDC)
-40	351.0	3.256
-35	251.6	3.240
-30	182.5	3.218
-25	133.8	3.189
-20	99.22	3.150
-15	74.32	3.105
-10	56.20	3.047
-5	42.89	2.976
0	33.02	2.889
5	25.61	2.789
10	20.02	2.673
15	15.77	2.541
20	12.51	2.399
25	10.00	2.245
30	8.045	2.083
35	6.514	1.916
40	5.306	1.752
45	4.348	1.587
50	3.583	1.426
55	2.968	1.278
60	2.467	1.136
65	2.068	1.007
70	1.739	0.891
75	1.469	0.758
80	1.246	0.691
85	1.061	0.607
90	0.908	0.533
95	0.779	0.469
100	0.672	0.414

USB service outlet

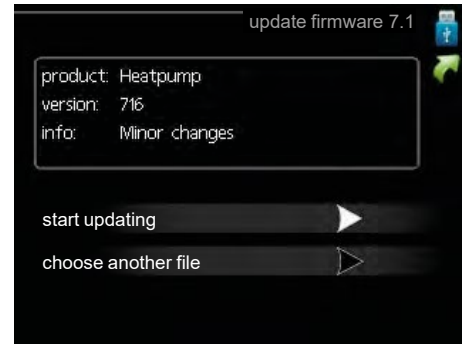


The display unit is equipped with a USB outlet that can be used to update the software, save logged information and manage the settings in the controller.



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

Menu 7.1 - Update system software



This allows the software to be updated in the controller.



CAUTION

For the following functions to work the USB memory must contain files with software for the controller.

The fact box at the top of the display shows information on the most likely update that the software has selected from the USB memory.

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

Start the update

Select "start the update" if you wish to start the update. You will be asked whether you really want to update the software. Click "yes" to proceed or "no" to go back. If you responded "yes" to the previous question, the update will start and you can now follow the progress of the update on the display. After the update is complete, your controller will reboot.



CAUTION

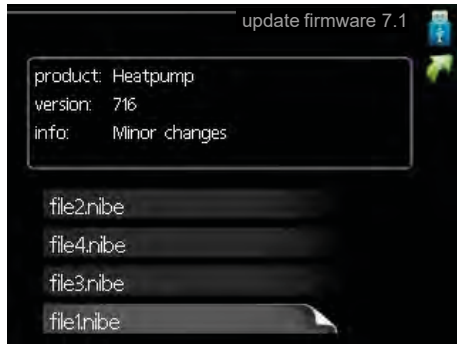
A software update does not reset the menu settings in the controller.



CAUTION

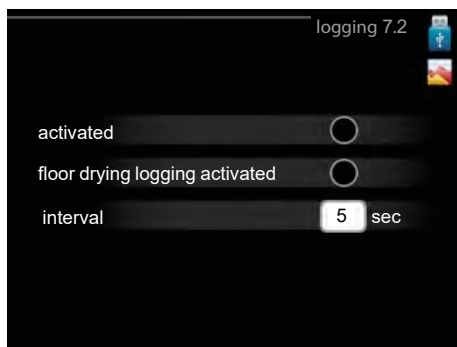
If the update is interrupted before it is complete (for example due to a power cut etc.), the software can be reset to the previous version by holding down the OK button during start-up until the lamp lights up green (takes approx. 10 seconds).

Select a different file



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

Menu 7.2- Logging



Setting range: 1 s – 60 min

Factory setting range: 5 s

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

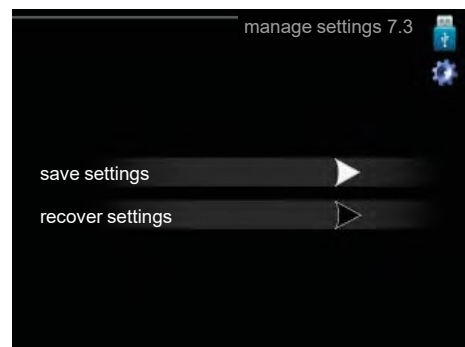
1. Set the desired logging frequency.
2. Select “on”.
3. The present values from the controller are saved in a file in the USB memory stick at the set interval until “on” is unticked.



CAUTION

Before removing the USB memory stick, remember to untick “On”.

Menu 7.3- Manage settings



Here you can manage (save or reset) all the user settings (user and service menus) in the controller from the USB memory stick. With “save settings” you save the menu settings to the USB memory stick in order to restore them later or to copy the settings to another controller.



CAUTION

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

With “reset settings” you delete all menu settings from the USB memory stick.



CAUTION

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

Draining the hot water tank

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

Draining the climate system

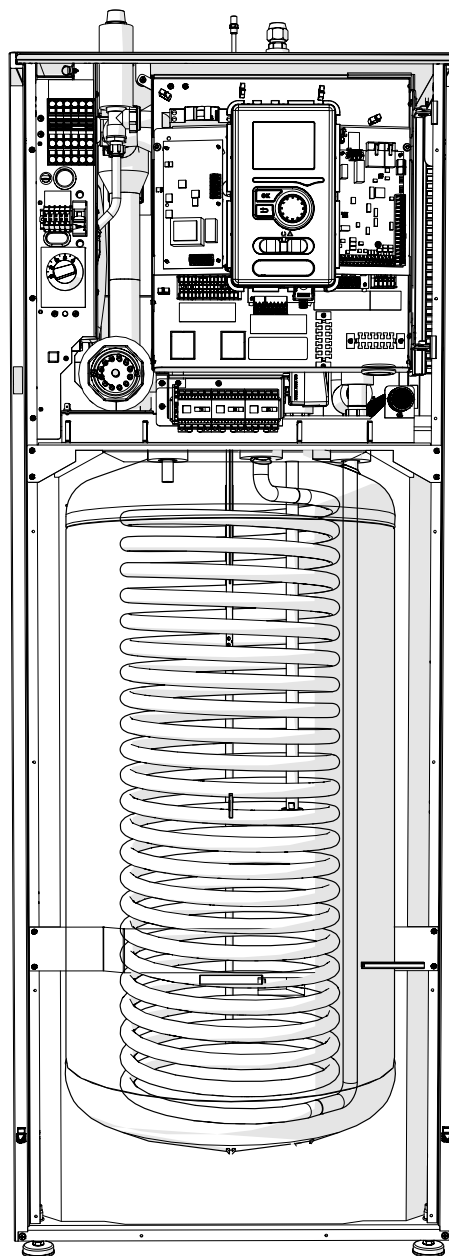
To make it easier to carry out servicing on the climate system, drain the system first using the filling valve.



CAUTION

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

1. Connect a pipe to the system's external draining valve.
2. Then open the draining valve in order to drain the heating installation.

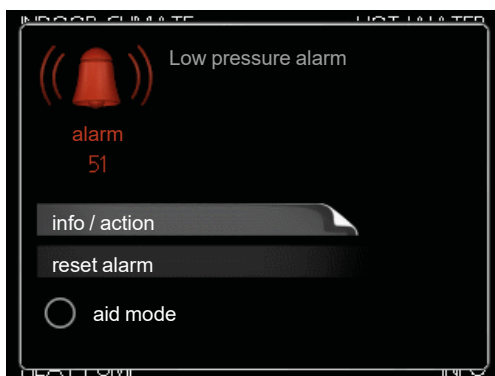


11 Disturbances in comfort

In most cases, the controller detects if malfunctions occur and indicates this with alarms, and shows instructions to rectify them on the display. See “Manage alarms” for information about managing alarms. If the malfunction does not appear on the display, or if the display is off, the following troubleshooting guide can be used.

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

Alarm



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

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

Reset alarm In many cases, it is sufficient to select “Reset alarm” for the product to revert to normal operation. If a green light comes on after selecting “Reset alarm,” the cause of the alarm has been resolved. If a red light is still visible and a menu called “Alarm” is visible in the display, the problem that caused the alarm remains. If the alarm disappears and then returns, contact your authorised installer or a service company.

Aid mode “aid mode” is a kind of emergency mode. This means that the system is producing heat and/or hot water despite there being some kind of problem. This could mean that the heat pump’s compressor is not working. In this case the electric additional heat produces heat and/or hot water.



NOTE

Selecting „aid mode” is not the same as correcting the problem that caused the alarm. The status lamp will therefore remain red.

If the alarm does not reset, contact your installer for suitable remedial action.



CAUTION

Always state the product’s serial number (14 digits) when reporting a fault.

Troubleshooting

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

Basic operations

Start by checking the following items:

- Position of the switch.
- Fuses and mains fuse.
- The house’s residual-current device.
- Correctly set current sensor (if installed).

Low hot water temperature or no hot water

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

- Closed or choked filling valve for the hot water.
 - Open the valve.
- Mixing valve (if there is one installed) positioned too low.
 - Adjust the mixer valve.
- Control module in incorrect operating mode.
 - If “manual” mode is selected, select “add. heat. only”.
- High hot water consumption.
 - Wait until the hot water has heated up. Temporarily increased hot water output (temporary lux. mode) can be activated in menu 2.1.
- Hot water setting too low.
 - Go to menu 2.2 and select a higher comfort mode.
- Too low or no priority for hot water.
 - Go to menu 4.9.1 and increase the time for which hot water is to be prioritised.

Low room temperature

- Closed thermostats in several rooms.
 - Fully open the thermostatic valves in as many rooms as possible.
- Adjust the room temperature via menu 1.1, instead of turning the thermostats.
- Control module in incorrect operating mode.
 - Go to menu 4.2. If “auto” mode is selected, select a higher value for “stop heating” in menu 4.9.2.

- If “manual” mode is selected, select “heating”. If this is not enough, then select “add. heat”.
- Too low a set point value on the automatic heating control.
 - Go to menu 1.1 “Temperature” and change the offset heating curve. If the room temperature is only low in cold weather, the curve slope in menu 1.9.1 “Heating curve” may need to be adjusted upwards.
- Too low or no operating prioritisation of heat.
 - Go to menu 4.9.1 and increase the time for which heating is to be prioritised.
- “Holiday mode” activated in menu 4.7.
 - Go to menu 4.7 and select “off”.
- External switch for changing the heating activated.
 - Check any external switches.
- Air in the climate system.
 - Vent the climate system.
 - Open the valves (contact your installer for assistance in finding them).

High room temperature

- Too high a set point value on the automatic heating control.
 - Go to menu 1.1 (temperature) and reduce the offset heating curve. If the room temperature is only high in cold weather, the curve slope in menu 1.9.1 “Heating curve” may need to be adjusted downwards.
- External switch for changing the heating activated.
 - Check any external switches.

Compressor does not start

- There is no heating requirement.
 - Controller does not request heating or hot water.
- Compressor blocked due to a problem with the temperature.
 - Wait until the temperature is within the product’s working range.
- Minimum time between compressor starts has not been reached.
 - Wait 30 minutes and check if the compressor has started.
- Alarm tripped.
 - Follow the instructions on the display.

Additional heat only

If you are unsuccessful in rectifying the malfunction and are unable to heat the house, you can, whilst waiting for assistance, continue running the heat pump in “add. heat only”. This means that additional heat only is used to heat the house.

Switching the system to additional heat mode

1. Go to menu 4.2 Operating mode.
2. Select “Add. heat only” using the control knob and then press the OK button.
3. Return to the main menu by pressing the Back button.



NOTE

When commissioning without a NIBE air/water heat pump, an communication error alarm may appear on the display.

The alarm is reset if the relevant heat pump is deactivated in menu 5.2.2 („Install slave devices”).

12 Accessories

Available accessories

Room sensor RTS 40

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

Part no. 067 065

Extra shunt group ECS 40/ECS 41

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

ECS 40 (max. 80m²)

Part no. 067 287

ECS 41 (max. 250m²)

Part no. 067 288

Accessory card AXC 30

An accessory board is required in case of active cooling (4-pipe system), an additional climate system, or if more than four feed pumps are to be connected to the controller. It can also be used in case of additional heat controlled by a shunt valve (e.g. wood/oil/gas/pellet boiler). An accessory board is required if, for example, a hot water circulation pump is to be connected to the controller where the AA3-X7 output is activated for the QN12 valve.

Part no. 067 304

MODBUS 40 Communication module

MODBUS 40 allows for control and monitoring of the controller using the BMS (building management system). Communication is then handled by MODBUS-RTU.

Part no. 067 144

Room unit RMU 40

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

Part no. 067 064

Air/water heat pump

AMS 10-6

AMS 10-8

AMS 10-12

Part no. 064 205 Part no. 064 033 Part no. 064 110

Auxiliary contactor HR 10

Auxiliary relay HR10 is used to control external 1 to 3 phase loads such as oil burners, immersion heaters and pumps.

Part no. 067 309

Condensation water drainage pipe

KVR10-10

Length- 1 metre

Part no. 067 614

KVR10-30

Length- 3 metres

Part no. 067 614

KVR10-60

Length- 6 metres

Part no. 067 614

More accessories are available on the website
<https://www.nibe.eu>

Connecting the KVR accessory

The KVR 10 accessory is used to safely drain off most of the condensate from the air/water heat pump to a frost-free collection point.

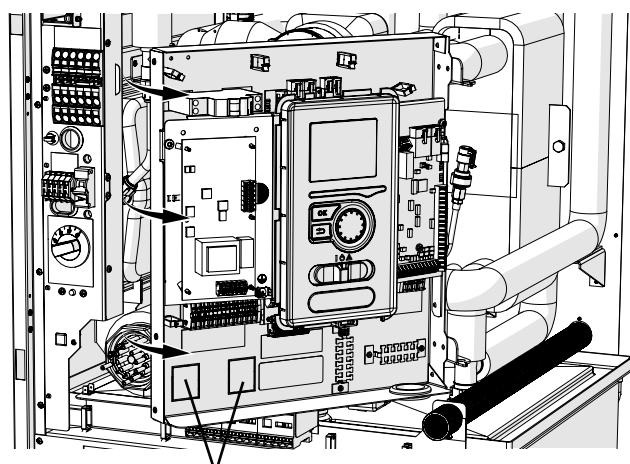
HYDRAULIC CONNECTION

For information on hydraulic connection of the KVR 10 accessory, see the instructions for the KVR accessory.

ELECTRICAL CONNECTION

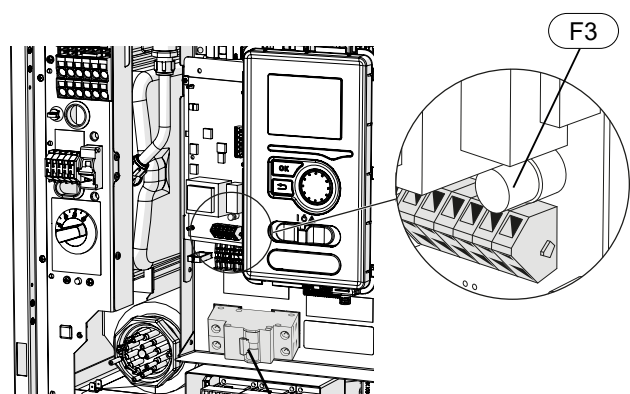
In order to connect the electric KVR accessory:

1. Open the control panel and punch-out the notched plates in the control panel casing under the residual-current device.



Plates to be punched-out

2. Attach the residual-current device RCD.



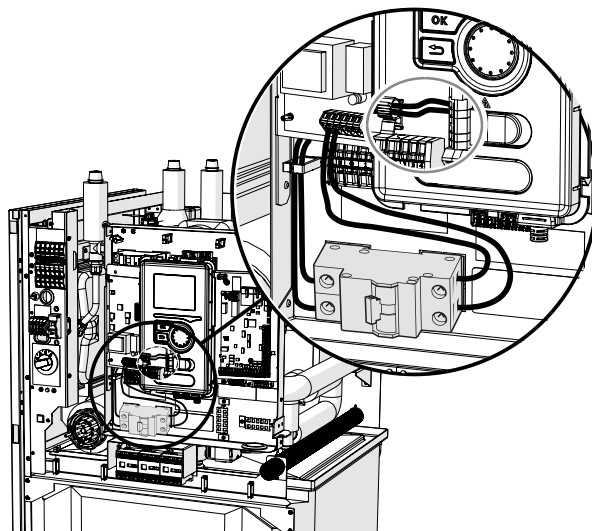
Residual-current device RCD

3. Use fuse (F3) depending on the length of the KVR cable in accordance with the below table.

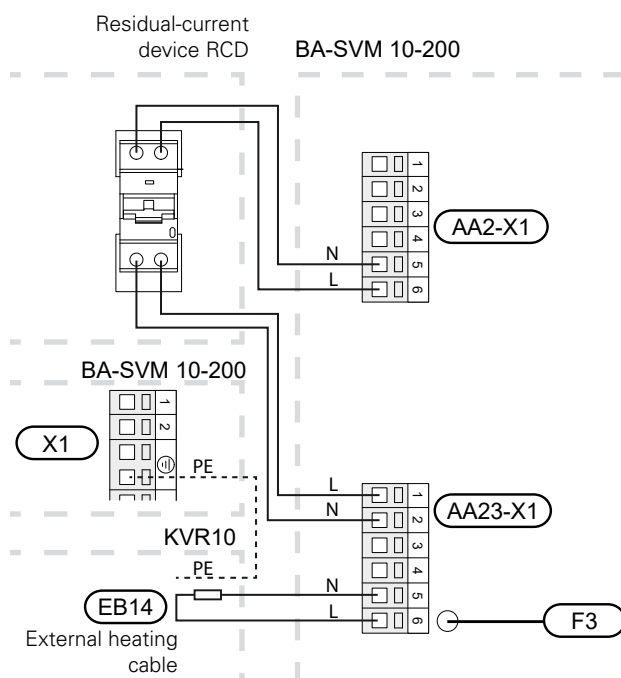
Length (m)	P _{tot} (W)	Fuse (F3)	Part no.
1	15	T100mA/250V	718 085
3	45	T250mA/250V	518 900*
6	90	T500mA/250V	718 086

*Fitted at the factory

4. Connect a residual-current device to terminal AA2-X1 under terminal block 5(N) and 6(L).
5. Connect a residual-current device to terminal AA23-X1 to terminal blocks 1(L) and 2(N).

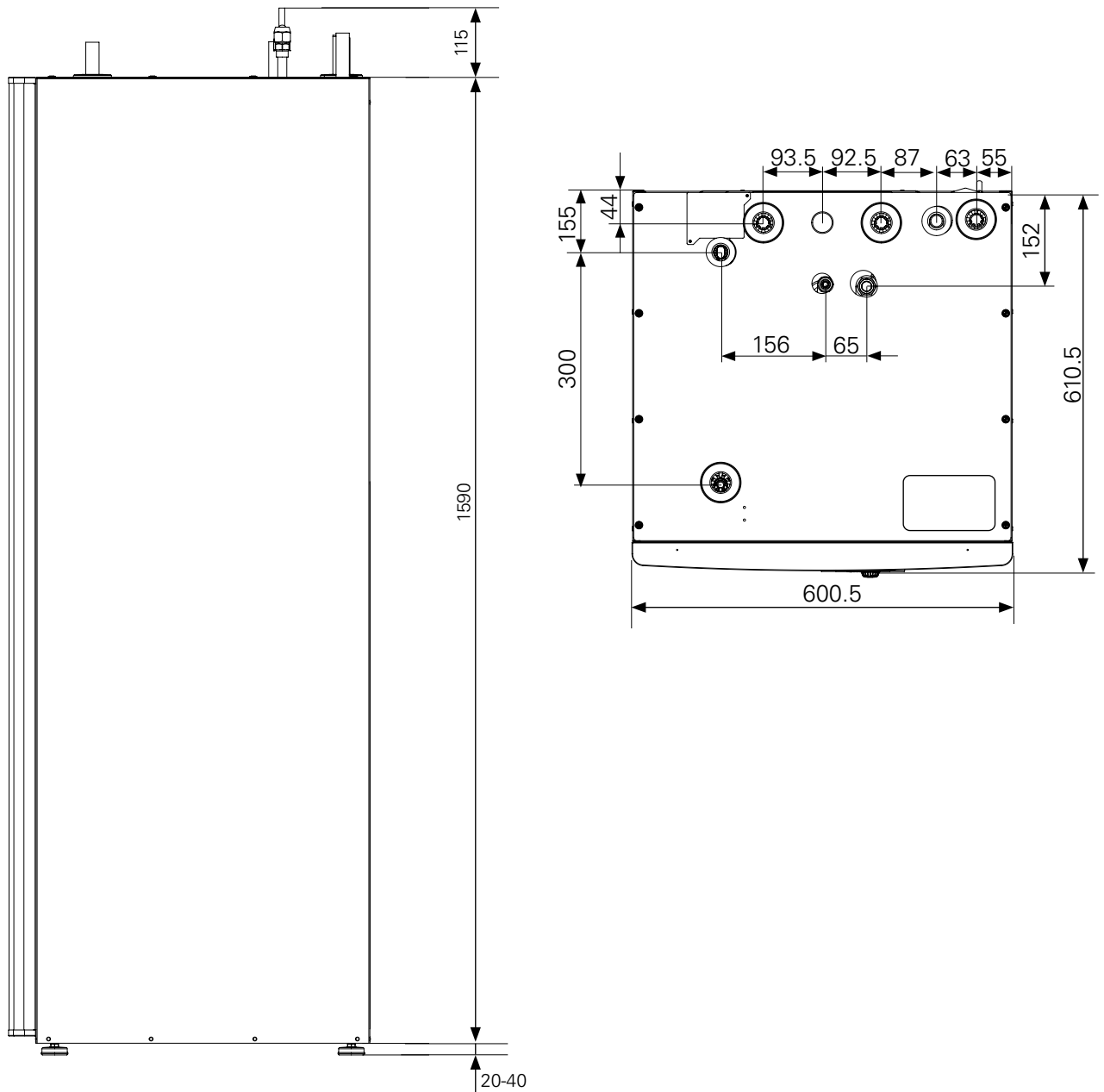


6. Connect an external heating cable (EB14) to terminal AA23-X1 to terminal blocks: 4 (PE), 5 (N), 6 (L).



13 Technical data

Dimensions and pipe connections



Technical data

Type of product	Unit	BA-SVM 10-200/6 E/EM/R	BA-SVM 10-200/12 E/EM/R
Height	mm	1590	
Required ceiling height	mm	2100	
Width	mm	600	
Depth	mm	610	
Weight	kg	161 (124 - ONLY BA-SVM 10-200/6 R)	165 (128 - ONLY BA-SVM 10-200/12 R)
Maximum operating pressure of central heating system.	bar	3	
Maximum hot water pressure	bar	10	
Hot water tank volume	l	180	
Maximum operating temperature of central heating	°C	65	
Maximum hot water temperature	°C	65	
Low-energy circulation pump clim. sys.	-	Yes	
Safety valve. climate system	-	Yes, in the safety assembly	
Expansion vessel	l	10	
Additional heat	kW	4.5 (230V) / 9 (400V)	
Rated voltage	V	1x230 / 3x400	
Hot water tank corrosion protection	-	Enamel + titanium anode (E, E EM) / Stainless Steel (R)	
Maximum hot water capacity in accordance with EN16147	-	230 litres. 40°C	
Energy class (in accordance with ErP at supply temp. 55°C) applies to package AMS 10-12 + BA-SVM 10-200/12 and AMS 10-6 + BA-SVM 10-200/6	-	A++	
Efficiency class / Load profile (hot water)	-	A/XL	

Outdoor unit	Unit	AMS 10-6	AMS 10-8	AMS 10-12
Starting current	A	5		
Compressor	-	Twin Rotary		
Max. nominal fan performance (heating)	m³/h	2 530	3 000	4 380
Fan power	W	50	86	
Defrosting	-	Reverse cycle		
Hot water tank drip tray	W	Integrated 110	Integrated 100	Integrated 120
High pressure critical value	MPa (bar)	4.15 (41.5)		
Low pressure switch-off value (15 s)	MPa (bar)	0.079 MPa (0.79)		
Height	mm	640	750	845
Width	mm	800	780 (+67 valve cover)	970
Depth	mm	290	640 (+110 base rail)	370 (+80 base rail)
Weight	kg	46	60	74
Colour (two layers of powder coating)	-	Dark grey		
Refrigerant amount	kg	1.5	2.55	2.90
Max. length of refrigerant pipe one-way	m	30*		
Refrigerant pipe dimensions	-	Gas pipe: ext. diameter 12.7 (1/2") Liquid line: ext. diameter 6.35 (1/4")	Gas pipe: ext. diameter 15.88 (5/8") Liquid line: ext. diameter 9.53 (3/8")	
Optional pipe connections	-	Right-hand side		Bottom / right-hand side/ back
Part no.	-	064 205	064 033	064 110

*If the length of the refrigerant pipes exceeds 15 m, extra refrigerant must be added in the amount of 0.06 kg/m.

<i>Max. operating current and recommended fuse rating for 3x400 V connection</i>	<i>Unit</i>	<i>BA-SVM 10-200/6 E/EM/R + AMS 10-6</i>	<i>BA-SVM 10-200/12 E/EM/R + AMS 10-8</i>	<i>BA-SVM 10-200/12 E/EM/R + AMS 10-12</i>
Max. operating current, compressor	A	16	16	20
Max. operating current of heat pump including 3 kW immersion heater, compressor running and contactor K1 connected (recommended fuse rating)	A	16 (16)	16 (16)	20 (20)
Max. operating current of heat pump including 6 kW immersion heater, compressor running and contactor K1+K2 connected (recommended fuse rating)	A	16 (16)	16 (16)	20 (20)
Max. operating current of heat pump including 9 kW immersion heater, compressor running and contactor K1+K2+K3 connected (recommended fuse rating)	A	20 (20)	20 (20)	20 (20)
Max. operating current of 9 kW immersion heater, contactor K1+K2+K3 connected, compressor not running (recommended fuse rating)	A	20 (20)	20 (20)	20 (20)

<i>Max. operating current and recommended fuse rating for 1x230 V connection</i>	<i>Unit</i>	<i>BA-SVM 10-200/6 E/EM/R + AMS 10-6</i>	<i>BA-SVM 10-200/12 E/EM/R + AMS 10-8</i>	<i>BA-SVM 10-200/12 E/EM/R + AMS 10-12</i>
Max. operating current. compressor	A	16	16	20
Max. operating current of heat pump including 1.5 kW immersion heater. compressor running and contactor K1 connected (recommended fuse rating)	A	22.5 (25)	22.5 (25)	26.5 (25)
Max. operating current of heat pump including 3 kW immersion heater. compressor running and contactor K1+K2 connected (recommended fuse rating)	A	29 (32)	29 (32)	33 (32)
Max. operating current of heat pump including 4.5 kW immersion heater. compressor running and contactor K1+K2+K3 connected (recommended fuse rating)	A	35.5 (32)	35.5 (32)	39.5 (40)
Max. operating current of 4.5 kW immersion heater. contactor K1+K2+K3 connected. compressor not running (recommended fuse rating)	A	19.5 (20)	19.5 (20)	19.5 (20)

Energy efficiency label

Manufacturer	NIBE			
Heat pump model		AMS 10-6	AMS 10-8	AMS 10-12
Hot water heater model		BA-SVM 10-200/6 E / EM / R	BA-SVM 10-200/12 E / EM / R	BA-SVM 10-200/12 E / EM / R
Temperature application	°C	35 / 55	35 / 55	35 / 55
Declared load profile for heating hot water		XL	XL	XL
Space heating efficiency class, average climate		A+++ / A++	A++ / A++	A++ / A++
Hot water heating efficiency class, average climate		A	A	A
Nominal heat output (P _{design}), average climate	kW	5 / 5	8.2 / 7	11.5 / 10
Annual energy consumption for space heating, average climate	kWh	2 089 / 3 248	3 882 / 4 447	5 382 / 6 136
Seasonal average space heating efficiency, average climate	%	188 / 131	172 / 127	174 / 132
Water heating energy efficiency, average climate	%	89	99	98
Sound power levels L _{WA} indoors	dB	35	35	35
Nominal heat output (P _{design}), cold climate	kW	4 / 6	9 / 10	11.5 / 13
Nominal heat output (P _{design}), warm climate	kW	4 / 5	8 / 8	12 / 12
Annual energy consumption for space heating, cold climate	kWh	2 694 / 4 610	6 264 / 8 844	7 798 / 11 197
Annual energy consumption for hot water heating, cold climate	kWh	872 / 1 398	1 879 / 2 333	2 759 / 3 419
Seasonal average space heating efficiency, cold climate	%	143 / 116	139 / 108	142 / 111
Water heating energy efficiency, cold climate	%	252 / 179	225 / 180	229 / 185
Sound power level L _{WA} outdoors	dB	51	55	58

Energy efficiency specifications of the package

Heat pump model		AMS 10-6	AMS 10-8	AMS 10-12
Hot water heater model		BA-SVM 10-200/6 E / EM / R	BA-SVM 10-200/12 E / EM / R	BA-SVM 10-200/12 E / EM / R
Temperature application	°C	35 / 55	35 / 55	35 / 55
Controller, class		VI		
Controller, contribution to efficiency	%	4,0		
Seasonal space heating energy efficiency of the package, average climate	%	192 / 135	176 / 131	178 / 136
Seasonal space heating energy efficiency class of the package, average climate		A+++ / A++	A+++ / A++	A+++ / A++
Seasonal space heating energy efficiency of the package, cold climate	%	147 / 120	143 / 112	146 / 115
Seasonal space heating energy efficiency of the package, warm climate	%	256 / 183	229 / 184	233 / 189

A+++ - D for product space heating
A+++ - G for package space heating
A+ - F for product domestic hot water

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

Energy label

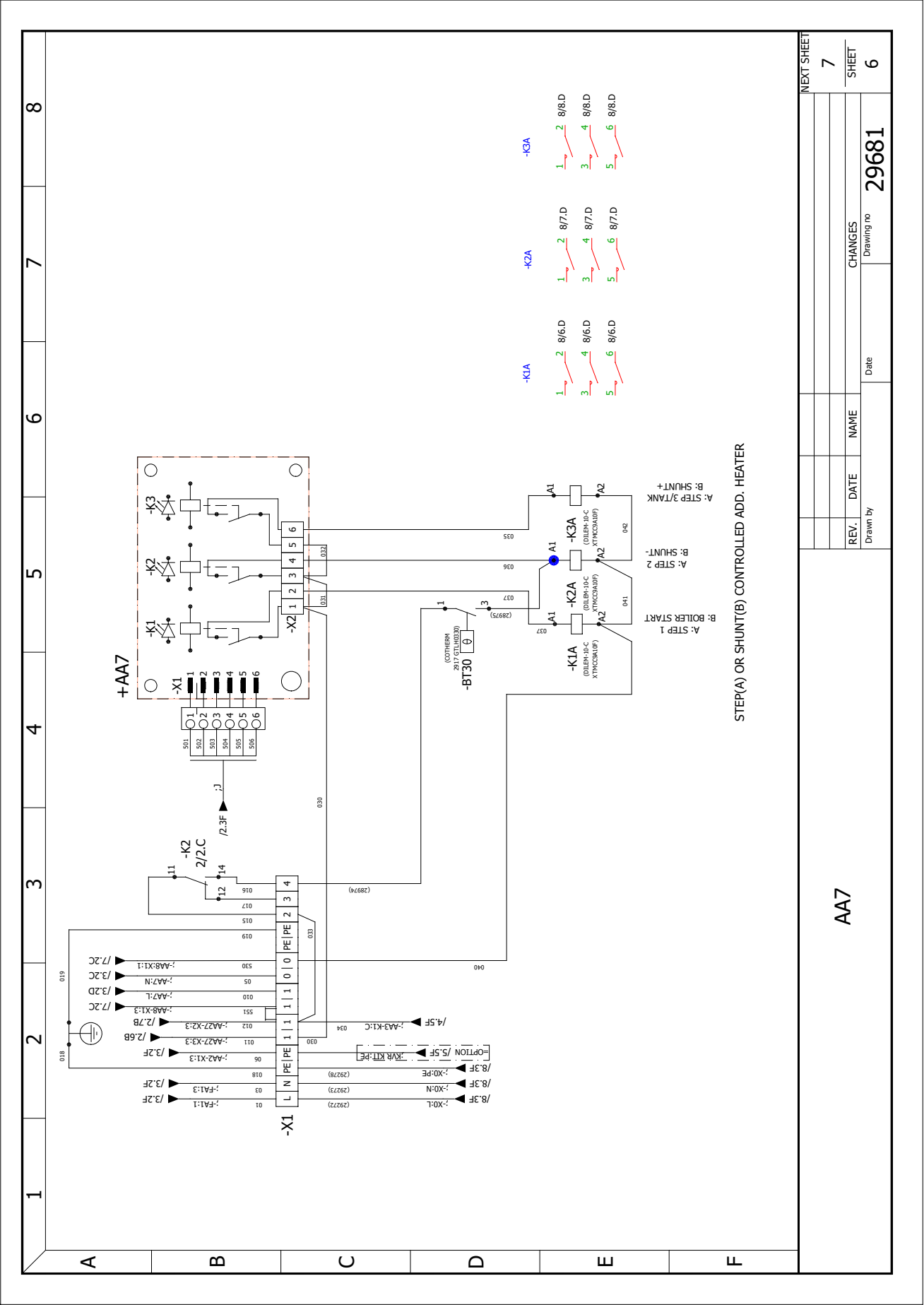
Model		AMS10-6 + BA-SVM 10-200/6 E / E EM / R						
Type of heat pump		<input checked="" type="checkbox"/> Air-water <input type="checkbox"/> Exhaust-water <input type="checkbox"/> Brine-water <input type="checkbox"/> Water-water						
Low-temperature heat pump		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
Integrated immersion heater for additional heat		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
Heat pump combination heater		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
Climate		<input checked="" type="checkbox"/> Average <input type="checkbox"/> Cold <input type="checkbox"/> Warm						
Temperature application		<input checked="" type="checkbox"/> Average (55°C) <input type="checkbox"/> Low (35°C)						
Applied standards		EN14825 / EN16147, EN14511 and EN12102						
Rated heat output	Prated	5.3	kW	Seasonal space heating energy efficiency		η_s	131	%
Declared capacity for space heating at part load and at outdoor temperature T_j				Declared coefficient of performance for space heating at part load and at outdoor temperature T_j				
$T_j = -7^\circ\text{C}$	P _{d,h}	4.7	kW	$T_j = -7^\circ\text{C}$	P _{d,h}	1.88	-	
$T_j = +2^\circ\text{C}$	P _{d,h}	2.8	kW	$T_j = +2^\circ\text{C}$	P _{d,h}	3.26	-	
$T_j = +7^\circ\text{C}$	P _{d,h}	1.8	kW	$T_j = +7^\circ\text{C}$	P _{d,h}	4.72	-	
$T_j = +12^\circ\text{C}$	P _{d,h}	2.7	kW	$T_j = +12^\circ\text{C}$	P _{d,h}	6.47	-	
$T_j = \text{biv}$	P _{d,h}	4.7	kW	$T_j = \text{biv}$	P _{d,h}	1.88	-	
$T_j = \text{TOL}$	P _{d,h}	4.1	kW	$T_j = \text{TOL}$	P _{d,h}	1.77	-	
$T_j = -15^\circ\text{C}$ (if TOL < -20°C)	P _{d,h}		kW	$T_j = -15^\circ\text{C}$ (if TOL < -20°C)	P _{d,h}		-	
Bivalent temperature				Min. outdoor air temperature				
	T _{biv}	-7	°C		TOL	-10	°C	
Cycling interval capacity				Cycling interval efficiency				
	P _{psych}		kW		COP _{psych}		-	
Degradation coefficient				Max supply temperature				
	C _{d,h}	0.99	-		WTOL	58	°C	
Power consumption in modes other than active mode				Additional heat				
Off mode	P _{OFF}	0.007	kW	Rated heat output		P _{sup}	1.2	kW
Thermostat-off mode	P _{TO}	0.012	kW					
Standby mode	P _{SB}	0.012	kW	Type of energy input		Electric		
Crankcase heater mode	P _{CK}	0	kW					
Other items								
Capacity control	Variable			Rated airflow (air-water)			2 526	m³/h
Sound power level, indoors/outdoors	L _{WA}	35 / 51	dB	Rated heating medium flow				m³/h
Annual energy consumption	Q _{HE}	3 248	kWh	Brine flow rate in brine-water or water-water heat pumps				m³/h

Model		AMS10-8 + BA-SVM 10-200/12 E/EM/R					
Type of heat pump	<input checked="" type="checkbox"/> Air-water <input type="checkbox"/> Exhaust-water <input type="checkbox"/> Brine-water <input type="checkbox"/> Water-water						
Low-temperature heat pump	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
Integrated immersion heater for additional heat	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
Heat pump combination heater	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
Climate	<input checked="" type="checkbox"/> Average <input type="checkbox"/> Cold <input type="checkbox"/> Warm						
Temperature application	<input checked="" type="checkbox"/> Average (55°C) <input type="checkbox"/> Low (35°C)						
Applied standards	EN14825 / EN16147						
Rated heat output	Prated	7.0	kW	Seasonal space heating energy efficiency	η_s	127	%
Declared capacity for space heating at part load and at outdoor temperature T_j				Declared coefficient of performance for space heating at part load and at outdoor temperature T_j			
$T_j = -7^\circ\text{C}$	P _{dh}	6.3	kW	$T_j = -7^\circ\text{C}$	P _{dh}	1.94	-
$T_j = +2^\circ\text{C}$	P _{dh}	3.9	kW	$T_j = +2^\circ\text{C}$	P _{dh}	3.11	-
$T_j = +7^\circ\text{C}$	P _{dh}	2.6	kW	$T_j = +7^\circ\text{C}$	P _{dh}	4.42	-
$T_j = +12^\circ\text{C}$	P _{dh}	3.7	kW	$T_j = +12^\circ\text{C}$	P _{dh}	5.93	-
$T_j = \text{biv}$	P _{dh}	6.6	kW	$T_j = \text{biv}$	P _{dh}	1.83	-
$T_j = \text{TOL}$	P _{dh}	5.9	kW	$T_j = \text{TOL}$	P _{dh}	1.86	-
$T_j = -15^\circ\text{C}$ (if TOL < -20°C)	P _{dh}		kW	$T_j = -15^\circ\text{C}$ (if TOL < -20°C)	P _{dh}		-
Bivalent temperature				Min. outdoor air temperature			
	T _{biv}	-8.6	°C		TOL	-10	°C
Cycling interval capacity				Cycling interval efficiency			
	P _{psych}		kW		COP _{psych}		-
Degradation coefficient				Max supply temperature			
	C _{dh}	0.97	-		WTOL	58	°C
Power consumption in modes other than active mode				Additional heat			
Off mode	P _{OFF}	0.002	kW	Rated heat output	P _{sup}	1.1	kW
Thermostat-off mode	P _{TO}	0.010	kW				
Standby mode	P _{SB}	0.015	kW	Type of energy input	Electric		
Crankcase heater mode	P _{CK}	0.030	kW				
Other items							
Capacity control	Variable			Rated airflow (air-water)		3 000	m³/h
Sound power level, indoors/outdoors	L _{WA}	35 / 55	dB	Rated heating medium flow		0.60	m³/h
Annual energy consumption	Q _{HE}	4 447	kWh	Brine flow rate in brine-water or water-water heat pumps			m³/h

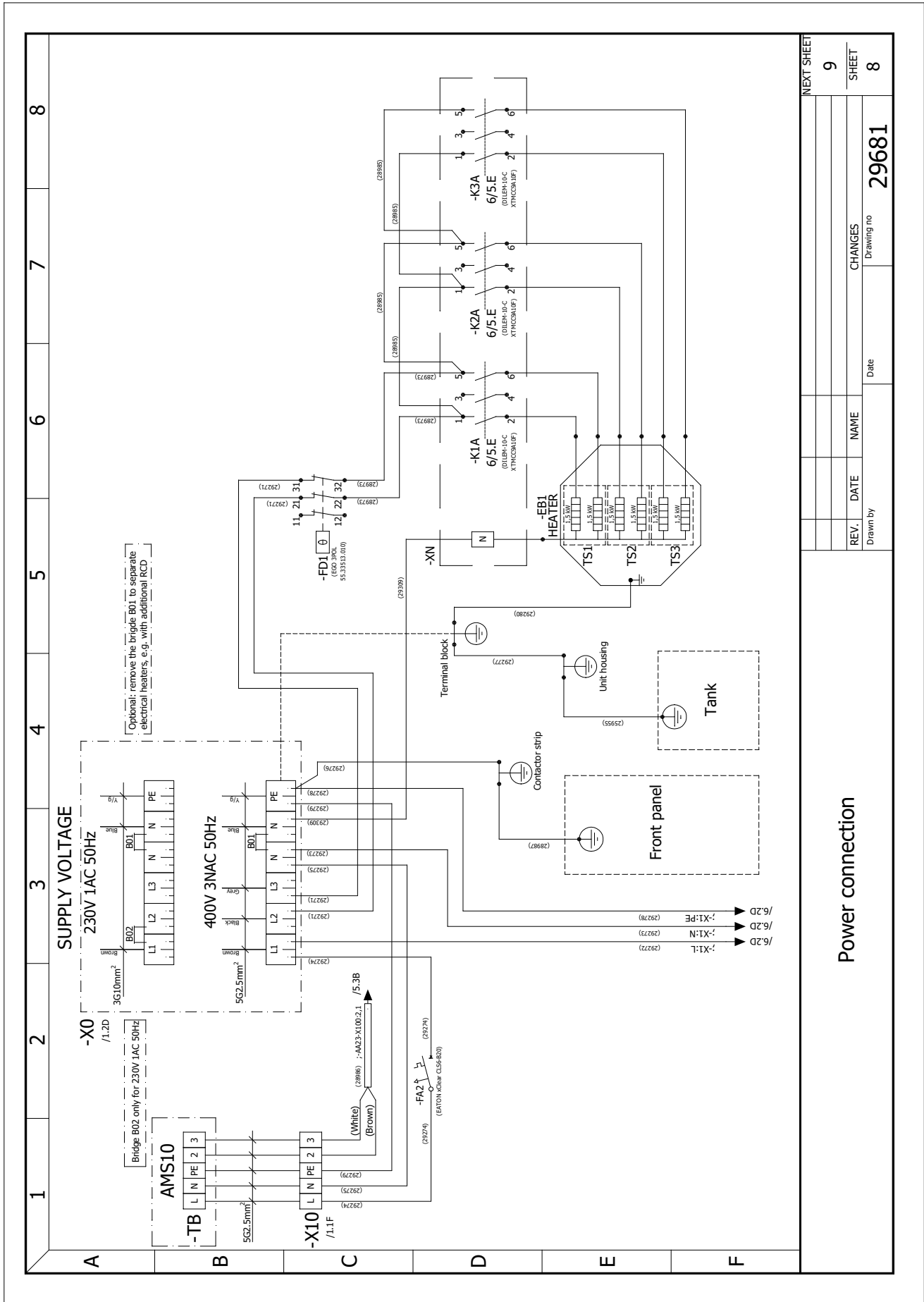
Model		AMS10-12 + BA-SVM 10-200/12 E/EM/R										
Type of heat pump		<input checked="" type="checkbox"/> Air-water <input type="checkbox"/> Exhaust-water <input type="checkbox"/> Brine-water <input type="checkbox"/> Water-water										
Low-temperature heat pump		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No										
Integrated immersion heater for additional heat		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										
Heat pump combination heater		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										
Climate		<input checked="" type="checkbox"/> Average <input type="checkbox"/> Cold <input type="checkbox"/> Warm										
Temperature application		<input checked="" type="checkbox"/> Average (55°C) <input type="checkbox"/> Low (35°C)										
Applied standards		EN14825 / EN16147										
Rated heat output	Prated	10.0	kW	Seasonal space heating energy efficiency		η_s	132	%				
Declared capacity for space heating at part load and at outdoor temperature T_j				Declared coefficient of performance for space heating at part load and at outdoor temperature T_j								
$T_j = -7^\circ\text{C}$	P _{dh}	8.9	kW	$T_j = -7^\circ\text{C}$	P _{dh}	1.99	-					
$T_j = +2^\circ\text{C}$	P _{dh}	5.5	kW	$T_j = +2^\circ\text{C}$	P _{dh}	3.22	-					
$T_j = +7^\circ\text{C}$	P _{dh}	3.5	kW	$T_j = +7^\circ\text{C}$	P _{dh}	4.61	-					
$T_j = +12^\circ\text{C}$	P _{dh}	5.0	kW	$T_j = +12^\circ\text{C}$	P _{dh}	6.25	-					
$T_j = \text{biv}$	P _{dh}	9.2	kW	$T_j = \text{biv}$	P _{dh}	1.90	-					
$T_j = \text{TOL}$	P _{dh}	8.1	kW	$T_j = \text{TOL}$	P _{dh}	1.92	-					
$T_j = -15^\circ\text{C}$ (if $\text{TOL} < -20^\circ\text{C}$)	P _{dh}		kW	$T_j = -15^\circ\text{C}$ (if $\text{TOL} < -20^\circ\text{C}$)	P _{dh}		-					
Bivalent temperature				T _{biv}		-7.9	°C		Min. outdoor air temperature	TOL	-10	°C
Cycling interval capacity				P _{cyh}			kW		Cycling interval efficiency	COP _{cyh}		-
Degradation coefficient				C _{dh}		0.98	-		Max supply temperature	WTOL	58	°C
Power consumption in modes other than active mode				Additional heat								
Off mode	P _{OFF}	0.002	kW	Rated heat output		P _{sup}	1.9	kW				
Thermostat-off mode	P _{TO}	0.014	kW									
Standby mode	P _{SB}	0.015	kW	Type of energy input		Electric						
Crankcase heater mode	P _{CK}	0.035	kW									
Other items												
Capacity control	Variable			Rated airflow (air-water)			4 380	m³/h				
Sound power level, indoors/outdoors	L _{WA}	35 / 58	dB	Rated heating medium flow			0.86	m³/h				
Annual energy consumption	Q _{HE}	6 136	kWh	Brine flow rate in brine-water or water-water heat pumps				m³/h				

NIBE BA-SVM 10-200





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SHEET			8		
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NAME			Date		

Power connection

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