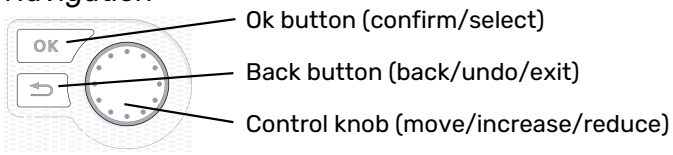
Installer manual

Control module
NIBE SMO 40

IHB EN 2316-1
731357

Quick guide

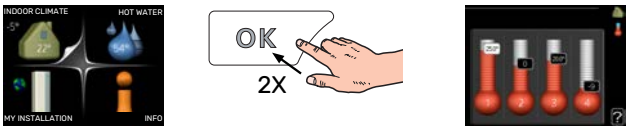
Navigation



A detailed explanation of the button functions can be found on page 35.

How to scroll through menus and make different settings is described on page 37.

Set the indoor climate



The mode for setting the indoor temperature is accessed by pressing the OK button twice, when in the start mode in the main menu.

Increase hot water volume

To increase the amount of hot water temporarily (if a water heater is installed), first turn the control knob to select menu 2 (water droplet) and then press the OK button twice.

Table of Contents

Important information

Safety information

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

The manual must be left with the customer.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

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Electrical installation and wiring must be carried out in accordance with national provisions.

SMO 40 must be installed via an isolator switch. The cable area has to be dimensioned based on the fuse rating used.

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

Symbols

Explanation of symbols that may be present in this manual.

NOTE

This symbol indicates danger to person or machine.

Caution

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

TIP

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

Marking

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

Danger to person or machine.

Read the User Manual.

Serial number

The serial number can be found on the top of the cover for the control module and in the info menu (menu 3.1).

Caution

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

Recovery

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

Do not dispose of used products with normal household waste. It must be disposed of at a special waste station or dealer who provides this type of service.

Improper disposal of the product by the user results in administrative penalties in accordance with current legislation.

Inspection of the installation

Current regulations require the heating installation to be inspected before it is commissioned. The inspection must be carried out by a suitably qualified person.

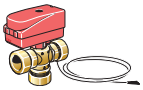
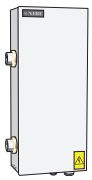
In addition, fill in the page for the installation data in the User Manual.

✔	Description	Notes	Signature	Date
Electrical connections				
	Communication, heat pump			
	Connected supply 230 V			
	Outside sensor			
	Room sensor			
	Temperature sensor, hot water charging			
	Temperature sensor, hot water top			
	External supply temperature sensor			
	External return line sensor			
	Charge pump			
	Shuttle valve			
	AUX1			
	AUX2			
	AUX3			
	AUX4			
	AUX5			
	AUX6			
	AA3-X7			
	Dipswitch			
Miscellaneous				
	Checking additional heater			
	Checking the function of the reversing valve			
	Checking charge pump function			
	Completed installation check of heat pump and associated equipment			

System solutions

COMPATIBLE PRODUCTS

The following combinations of products are recommended for control by SMO 40.

							
Control module	*Air/water heat pump*	*HW control*	*Accumulator with hot water heater*	*Circ. pump*	*Water heater*	*Addition*	*Volume vessel*
SMO 40	AMS 20-6 / HBS 20-6	VST 05	VPA 200/70 VPA 300/200 VPA 450/300 VPAS 300/450	CPD 11-25/65	VPB 200 VPB 300 VPBS 300 VPB 500 VPB 750-2 VPB 1000	ELK 15 ELK 26 ELK 42 ELK 213	UKV 40 UKV 100 UKV 200 UKV 300 UKV 500
	AMS 20-10 / HBS 20-10						
	F2050 – 6						
	F2050 – 10						
	S2125 – 8						
	AMS 10-12 / HBS 05-12	VST 11					
	F2040 – 12						
	S2125 – 12						
	F2120 – 16						
	AMS 10-16 / HBS 05-16	VST 20	VPA 300/200 VPA 450/300 VPAS 300/450	CPD 11-25/75	VPB 500 VPB 750-2 VPB 1000		UKV 200 UKV 300 UKV 500 UKV 750 UKV 1000
	F2040 – 16						
	F2120 – 20						
	F2300 – 20						

COMPATIBLE AIR/WATER HEAT PUMPS

F2040

F2040-12
Part no. 064 092

F2050

F2050-6
Part no. 064 328

F2050-10
Part no. 064 318

F2120

F2120-16 3x400 V
Part no. 064 139

F2120-20 3x400 V
Part no. 064 141

S2125

S2125-8 1x230 V
Part no. 064 220

S2125-8 3x400 V
Part no. 064 219

S2125-12 1x230 V
Part no. 064 218

S2125-12 3x400 V
Part no. 064 217

NIBE SPLIT HBS 05

AMS 10-12
Part no. 064 110

HBS 05-12
Part no. 067 480

AMS 10-16
Part no. 064 035

HBS 05-16
Part no. 067 536

NIBE SPLIT HBS 20

AMS 20-6
Part no. 064 235

HBS 20-6
Part no. 067 668

AMS 20-10
Part no. 064 319

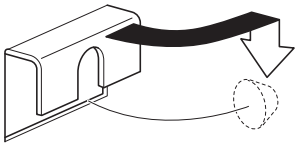
HBS 20-10
Part no. 067 819

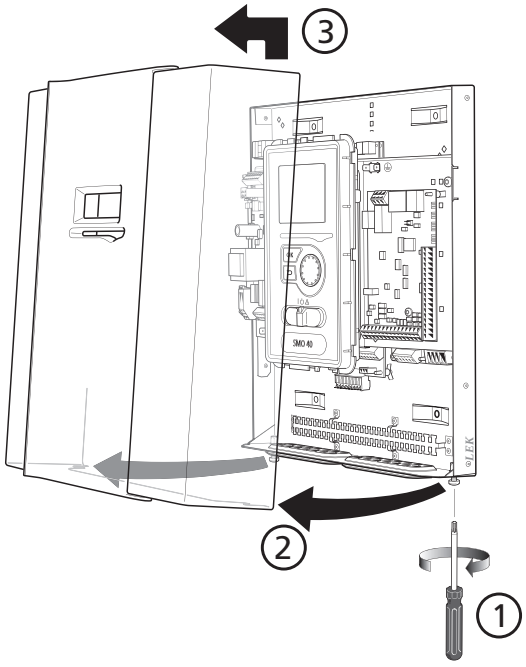
Check the software version of compatible older NIBE air/water heat pumps, see page 31.

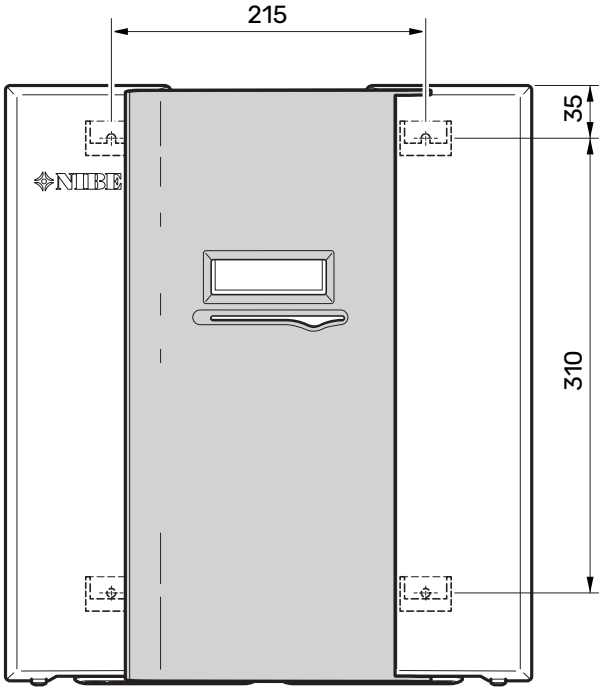
Delivery and handling

Removing the front panel

Loosen the screws slightly using a screwdriver. Lift the bottom edge of the front cover on the control module and unhook the cover at the upper edge.







Mounting

SMO 40 is a separate, electric control module and must be mounted on a wall.

Use all mounting points and mount the module upright, flat against the wall.Leave at least 100 mm of free space around the module to allow access and make cable routing easier during installation and servicing.

Caution

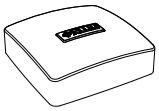
The screw type must be adapted to the surface on which installation is taking place.

The screw type must be adapted to the surface on which installation is taking place.

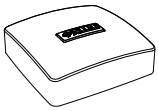
Caution

Screws for removing the front cover are reached from underneath.

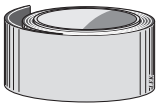
Supplied components



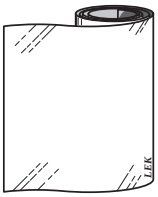
Outdoor temperature sensor (BT1)



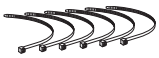
Room sensor (BT50).



Insulation tape



Aluminium tape



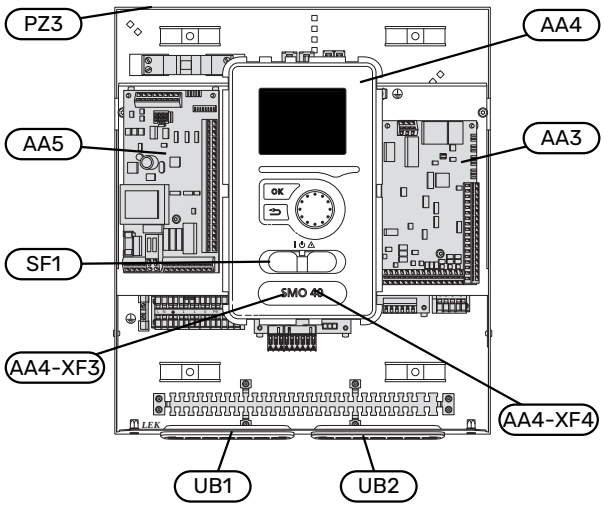
Cable ties

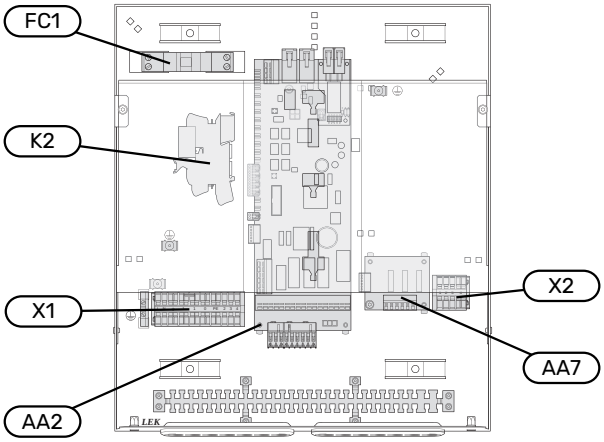
Temperature sensor

Current sensor

Heating pipe paste

The Control Module Design





ELECTRICAL COMPONENTS

AA2	Base card
AA3	Input circuit board
AA4	Display unit
AA5	Accessory card
AA7	Extra relay circuit board
FC1	Miniature circuit-breaker
K2	Emergency mode relay
X1	Terminal block, incoming electrical supply
X2	Terminal block, AUX4 - AUX6
SF1	Switch

MISCELLANEOUS

PZ3	Serial number plate
UB1	Cable grommet, incoming supply electricity, supply for accessories
UB2	Cable grommet, communication

Designations according to standard EN 81346-2.

Installing the installation

General

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

MINIMUM SYSTEM FLOWS

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

Each climate system must be dimensioned individually to provide the recommended system flows.

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

Air/water heat pump	Minimum flow during defrosting 100% circulation pump operation (l/s)	Minimum recommended pipe dimension (DN)	Minimum recommended pipe dimension (mm)
AMS 10-12/ HBS 05-12	0.29	20	22
AMS 10-16/ HBS 05-16	0.39	25	28

Air/water heat pump	Minimum flow during defrosting 100% circulation pump operation (l/s)	Minimum recommended pipe dimension (DN)	Minimum recommended pipe dimension (mm)
AMS 20-6/HBS 20-6	0.19	20	22
AMS 20-10/HBS 20-10			

Air/water heat pump	Minimum flow during defrosting 100% circulation pump operation (l/s)	Minimum recommended pipe dimension (DN)	Minimum recommended pipe dimension (mm)
F2040-12	0.29	20	22

Air/water heat pump	Minimum flow during defrosting 100% circulation pump operation (l/s)	Minimum recommended pipe dimension (DN)	Minimum recommended pipe dimension (mm)
F2050-6	0.19	20	22
F2050-10			

Air/water heat pump	Minimum flow during defrosting 100% circulation pump operation (l/s)	Minimum recommended pipe dimension (DN)	Minimum recommended pipe dimension (mm)
F2120-16 (3x400 V)	0.38	25	28
F2120-20 (3x400 V)	0.48	32	35

Air/water heat pump	Minimum flow during defrosting 100% circulation pump operation (l/s)	Minimum recommended pipe dimension (DN)	Minimum recommended pipe dimension (mm)
S2125-8 (1x230 V)	0.32	25	28
S2125-8 (3x400 V)			
S2125-12 (1x230 V)			
S2125-12 (3x400 V)			

Symbol key

Symbol	Meaning
	Unit box
	Shut-off valve
	Tapping valve
	Non-return valve
	Mixing valve
	Circulation pump
	Immersion heater
	Expansion vessel
	Filterball
	Pressure gauge
	Particle filter
	Safety valve
	Temperature sensor
	Trim valve
	Reversing valve/shunt
	Heat exchanger
	Cooling system
	Pool
	Control module
	Domestic hot water
	Addition
	Outdoor module
	Water heater
	Hot water circulation
	Heating system
	Heating system with lower temperature

Connecting air/water heat pump

You can find a list of compatible air/water heat pumps in section "System solutions".

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

Install as follows:

- expansion vessel
- pressure gauge
- safety valve / safety valves

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

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

  Installations with only one heat pump: a non-return valve is only required in those cases where the placement of the products in relation to each other can cause self-circulation.

  Cascade installations: each heat pump must be fitted with a non-return valve.

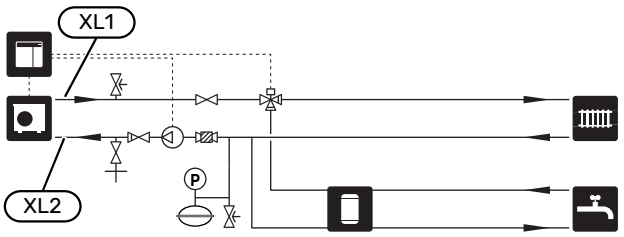
  If the heat pump is already fitted with a non-return valve, there is no need to install another.
- charge pump
- shut-off valve

  To facilitate any future servicing.
- filterball or particle filter

  Installed before connection "heating medium return" (XL2) (the lower connection) on the vacuum pump.

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

  If the system is to work with both a climate system and a water heater.



Climate system

A climate system is a system that regulates the indoor temperature with the help of the control system in SMO 40 and, for example, radiators, underfloor heating, underfloor cooling, fan coils, etc.

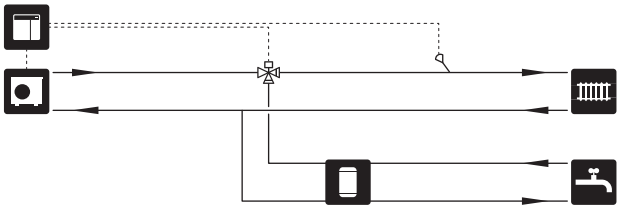
CONNECTING THE CLIMATE SYSTEM

Install as follows:

- supply temperature sensor (BT25)

  The sensor indicates when the heat pump will start to produce heating/cooling for the climate system.

- When connecting to systems with thermostats, some of the thermostats must be removed to ensure there is sufficient flow and heat generation.



Cold and hot water

Hot water production is activated in the start guide or in menu 5.2.

The settings for hot water are made in menu 5.1.1.

CONNECTING THE HOT WATER HEATER

Install as follows:

- controlling hot water sensor (BT6)

  The sensor is placed in the middle of the water heater.

- displayed hot water sensor (BT7)[1]

  The sensor is optional and is placed in the top of the water heater.

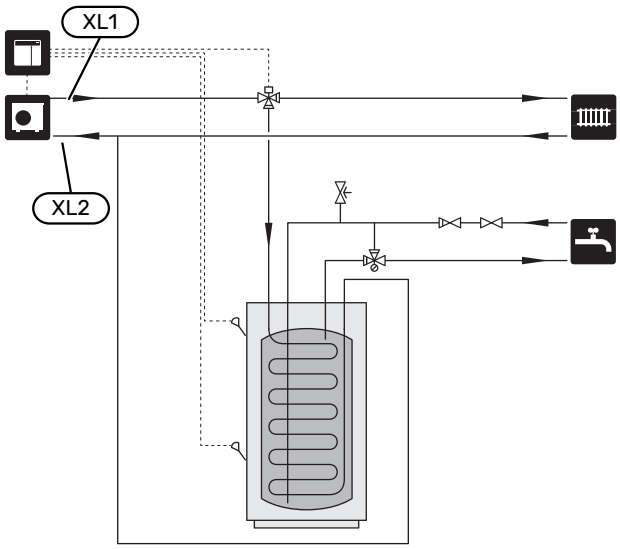
- shut-off valve
- non-return valve
- pressure relief valve

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

- mixing valve

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

1 The sensor is factory fitted on some water heater/accumulator tank models from NIBE.



Installation alternative

SMO 40 can be installed in several different ways, some of which are shown here.

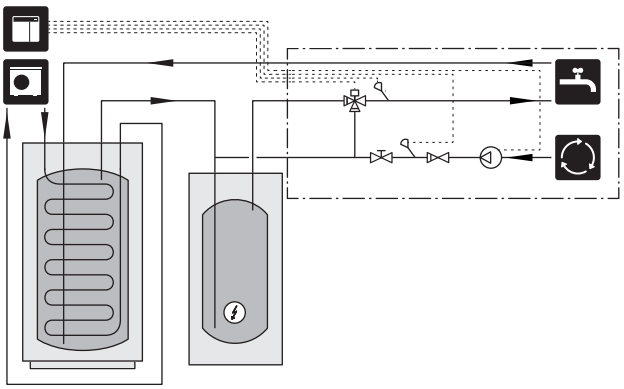
More information about the alternatives is available at nibe.eu and in the relevant assembly instructions for the accessories used. See section "Accessories" for a list of the accessories that can be used with SMO 40.

HOT WATER CIRCULATION

A circulation pump can be controlled by SMO 40 to circulate the hot water. The circulating water must have a temperature that prevents bacterial growth and scalding, and national standards must be satisfied.

The HWC return is connected to a freestanding water heater.

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



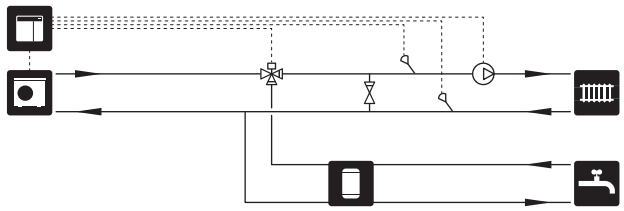
EXTERNAL HEATING MEDIUM PUMP

In installations where there is a large pressure drop in the system, an external heating medium pump (GP10) can be used as a supplement.

The installation can also be supplied with an external heating medium pump, if you want a constant flow in the climate system.

The heating medium pump is supplemented with an external return line sensor (BT71) and a non-return valve (RM1).

If the installation does not have an external supply temperature sensor (BT25), install this as well.



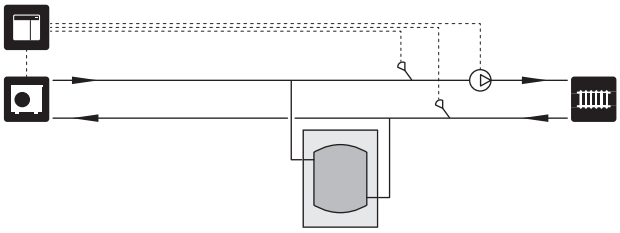
BUFFER VESSEL (UKV)

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

For further information, see the Installer Manual for the accessory.

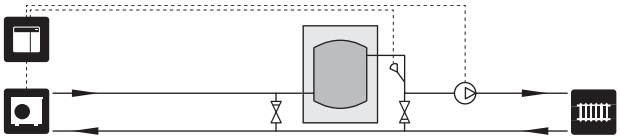
Flow equalisation

A 2-pipe, parallel-connected buffer vessel is used for high-temperature and/or low-flow systems. This connection principle requires a continuous flow over the external supply temperature sensor (BT25) and it is used as a buffer for the heat pump (volume expansion) and as a buffer for the climate system (for large, temporary power outputs such as defrosting and fan coil, etc.).



Flow equalisation

A 2-pipe-connected buffer vessel with non-return valves, external heating medium pump and external supply temperature sensor is used when the system volume in the climate system is less than the minimum recommended volume for the heat pump and it is necessary to create balance between power input and output.

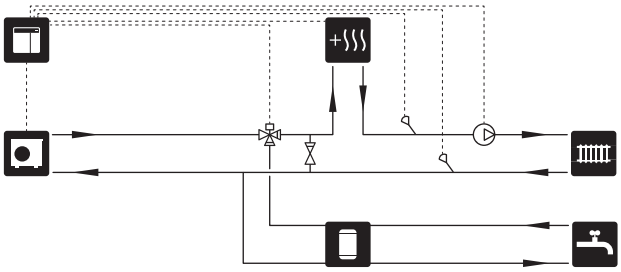


ADDITION

On cold days of the year, when the availability of energy from the air is lower, the additional heating can compensate and help to produce heat. The additional heating is also good to have as assistance, if the heat pump ends up outside its working range or if it has been blocked for any reason.

Step-controlled/shunt-controlled additional heat

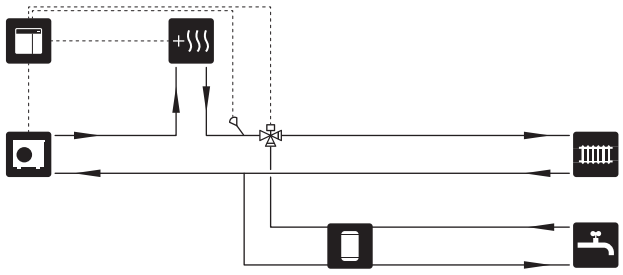
SMO 40 can, via a control signal, control step-controlled or shunt-controlled additional heat, which can also be prioritised. The additional heat is used for heat production.



Step-controlled additional heat before QN10

The additional heat is connected before the reversing valve (QN10) and is controlled via a control signal from SMO 40. The additional heat can be used for producing both hot water and heating.

The installation is supplemented with a supply temperature sensor after additional heat (BT63).

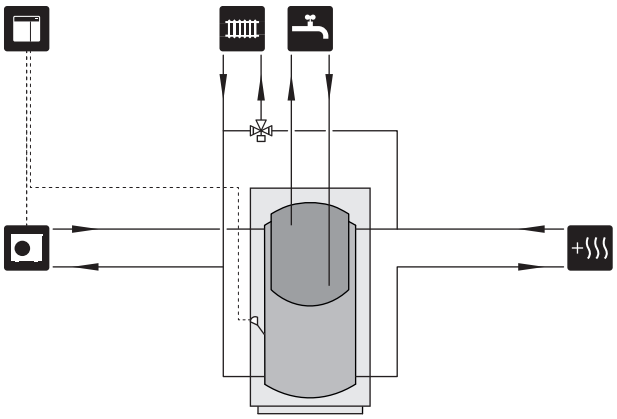


FIXED CONDENSING

If the heat pump is to work towards an accumulator tank with fixed condensing, you must connect an external supply temperature sensor (BT25). The sensor is placed in the tank.

The following menu settings are made:

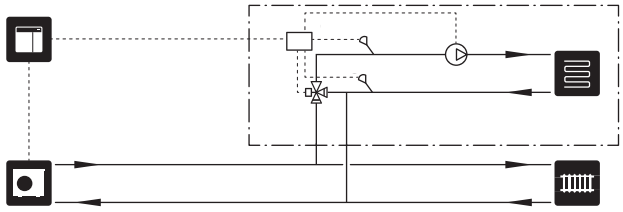
Menu	Menu setting (local variations may be required)
1.9.3.1 - min. flow line temp.	Desired temperature in the tank.
5.1.2 - max flow line temperature	Desired temperature in the tank.
5.11.1.2 - Charge pump (GP12)	intermittent
4.2 - op. mode	manual



EXTRA CLIMATE SYSTEM

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

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

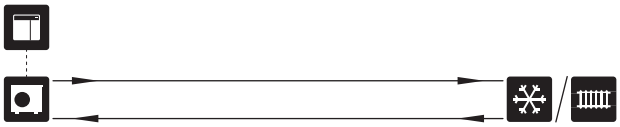


COOLING

Cooling in 2-pipe system

Cooling and heating are distributed via the same climate system.

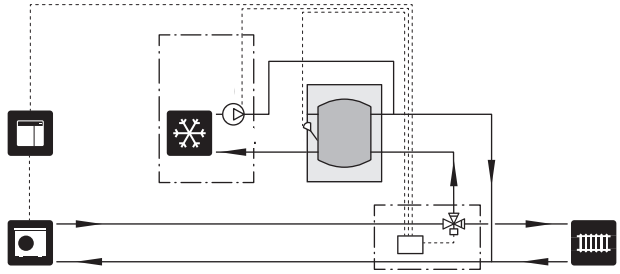
When there is a risk of condensation, components and climate systems must be insulated against condensation in accordance with current standards and provisions, or the min. supply temperature must be limited.



Cooling in 4-pipe system

With the accessory AXC 30, separate cooling and heating systems can be connected via a reversing valve.

The installation is supplemented with a supply temperature sensor for cooling (BT64).

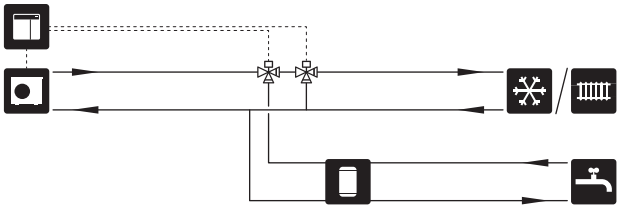


Delayed supply line for cooling

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

Via the reversing valve, the supply line circulates back to the heat pump until the temperature in the charge circuit reaches 20 °C. The valve then switches to the climate system. The temperature is measured with an internal sensor in the heat pump, no additional sensor is needed.

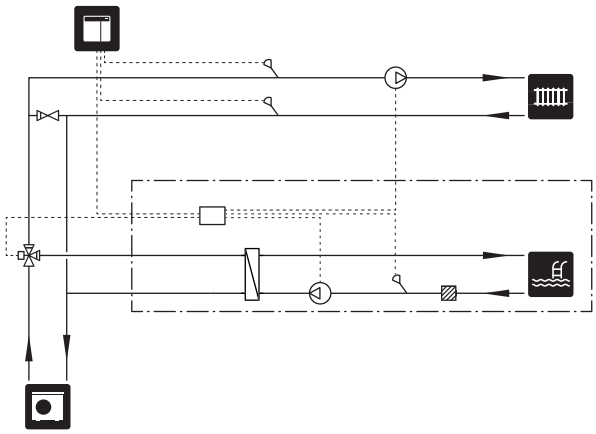
The reversing valve is activated via the AUX output in menu 5.4 - "soft in/outputs", "Cool. mode ind. w delay".



POOL

With the POOL 40 accessory, you can heat the pool with your system.

During pool heating, the heating medium circulates between the heat pump and the pool exchanger using the heat pump's charge pump.



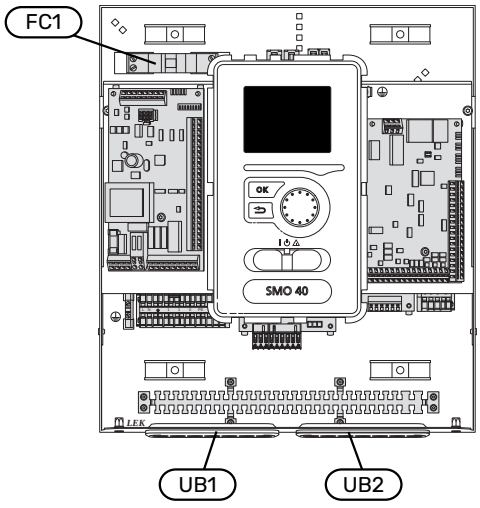
Electrical connections

General

- Electrical installation and wiring must be carried out in accordance with national provisions.
- Disconnect SMO 40 before insulation testing the house wiring.
- SMO 40 must be installed via an isolator switch. The cable area has to be dimensioned based on the fuse rating used.
- Use a screened cable for communication with the heat pump.
- To prevent interference, sensor cables to external connections must not be laid close to high voltage cables.
- The minimum area of communication and sensor cables to external connections must be 0.5 mm² up to 50 m, for example EKKX, LiYY or equivalent.
- When routing a cable into SMO 40, the cable grommets (UB1) and (UB2) must be used.
- For an electrical wiring diagram for SMO 40, see the "Technical specifications" section.

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

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



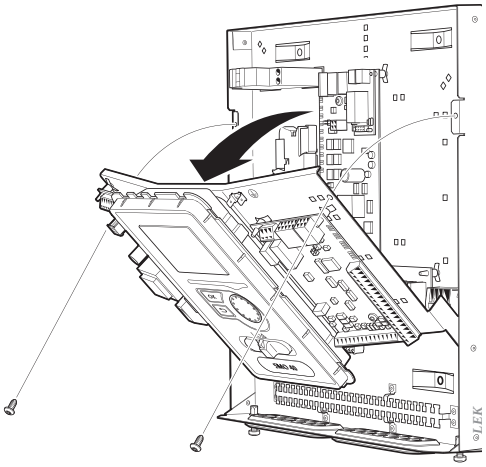
MINIATURE CIRCUIT-BREAKER

The control module operating circuit and parts of its internal components are internally fused by a miniature circuit breaker (FC1).

ACCESSIBILITY, ELECTRICAL CONNECTION

Removing the cover, see section "9".

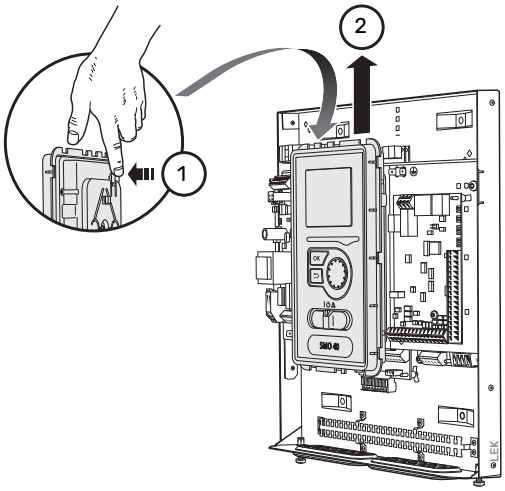
> **TIP**
>
> The cover to access the base board is opened using a Torx 25 screwdriver.



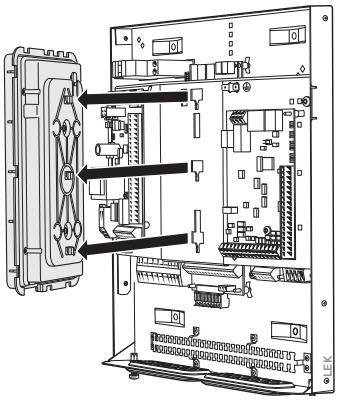
Dismantling

The display may need to be dismantled to allow easier access when connecting electrics.

1. Press in the catch on the upper rear side of the display unit towards you (1) and move the display unit upwards (2) so that the mountings unhook from the panel.

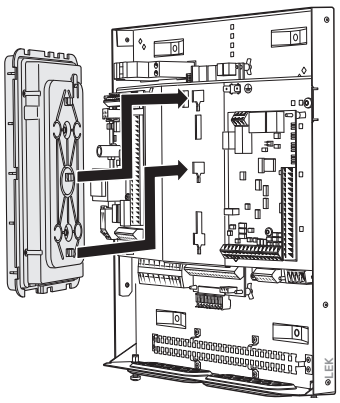


2. Lift the display unit from its mountings.

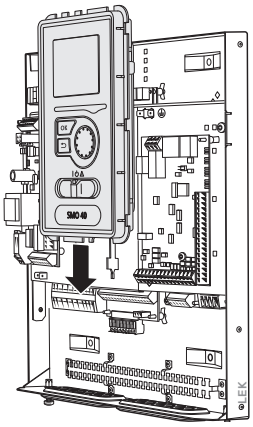


Mounting

1. Align the two lower mountings on the reverse of the display unit with the two upper holes in the panel as illustrated.



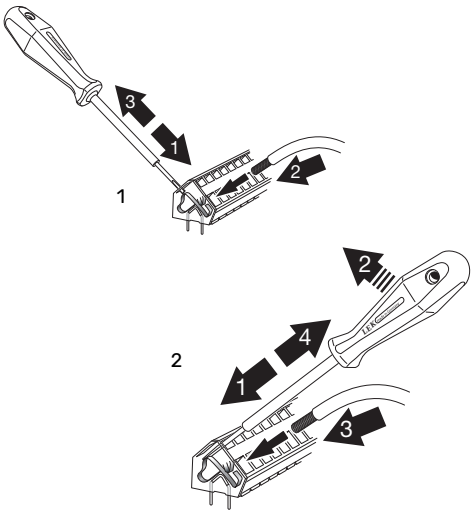
2. Secure the display on the panel by moving it downwards.



CABLE LOCK

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

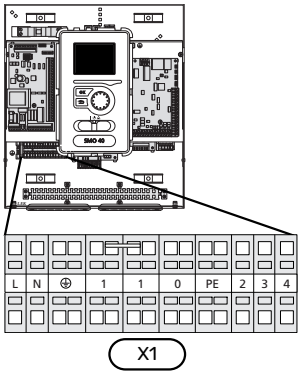
Terminal block on circuit board

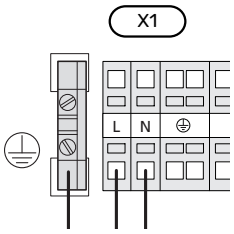


Connections

POWER CONNECTION

SMO 40 must be installed via an isolator switch. The cable area has to be dimensioned based on the fuse rating used.





TARIFF CONTROL

If there is a loss of voltage to the compressor in the heat pump for a certain period, simultaneous blocking of this must take place via a software-controlled input (AUX input) in order to avoid alarms, see section "External activation of functions". Compressor blocking must be performed on either the control module or on the air/water heat pump, not on both simultaneously.

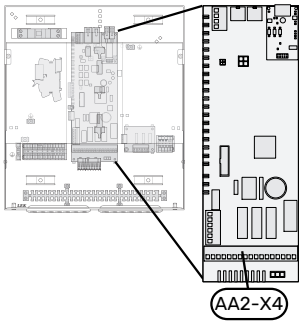
CONNECTING CHARGE PUMPS FOR THE HEAT PUMP 1 AND 2

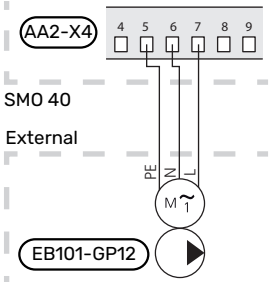
Connect charge pump 1 (EB101-GP12) to terminal block X4:5 (PE), X4:6 (N) and X4:7 (230 V) on the base board (AA2) as illustrated.

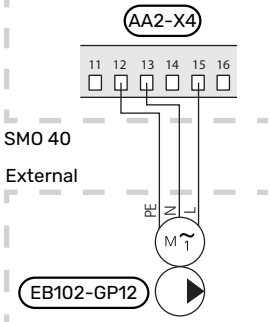
Control signal for charge pump 1 (EB101-GP12) is connected to terminal block X4:7 (GND, blue cable) and X4:8 (PWM, brown cable) on the input board (AA3) as illustrated.

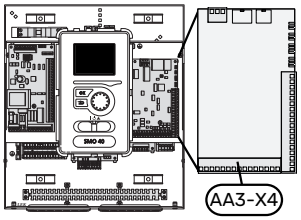
If two heat pumps are connected to SMO 40, the charge pump 2 (EB102-GP12) must be connected to terminal block X4:12 (PE), X4:13 (N) and X4:15 (230 V) on the base board (AA2) as illustrated. Control signal for charge pump 2 (EB102-GP12) is then connected to terminal block X4:5 (GND, blue cable) and X4:6 (PWM, brown cable) on the input board (AA3) as illustrated.

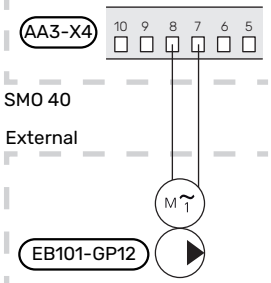
> **TIP**
>
> Two charge pumps (four if the internal accessory board is used) can be connected to and controlled by SMO 40. Several charge pumps can be connected if accessory boards (AXC) are used, two pumps per board.

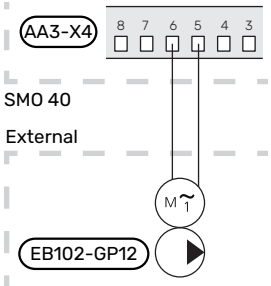












COMMUNICATION WITH HEAT PUMP

Connect the heat pump (EB101) to terminal block X4:1 (A), X4:2 (B) and X4:3 (GND) on the accessory board (AA5).

If multiple heat pumps are to be connected to the SMO 40 they must be connected in a cascade as illustrated "Cascade connection".

Caution

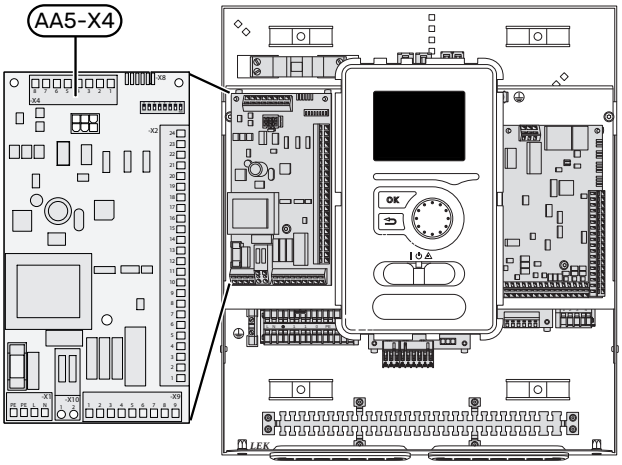
Up to 8 heat pumps can be controlled by SMO 40.

Caution

It is possible to combine various NIBE air/water heat pumps, of different sizes and models, with each other, effective from software version 8319.

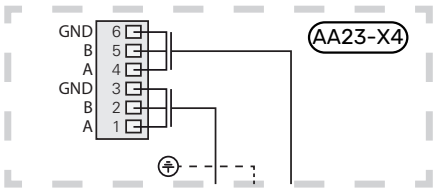
In earlier software versions, an air/water heat pump with an inverter-controlled compressor can only be combined with other inverter-controlled heat pumps of the same model.

Connecting to a heat pump

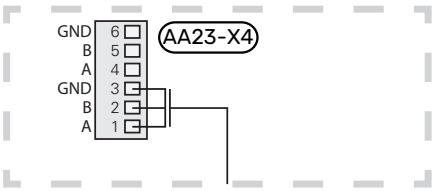


Cascade connection

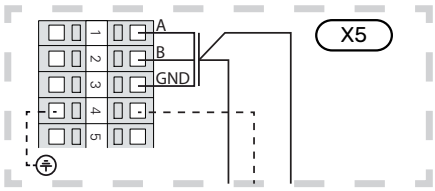
F2040/F2050/NIBE SPLIT HBS



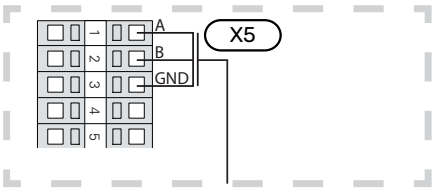
F2040/F2050/NIBE SPLIT HBS



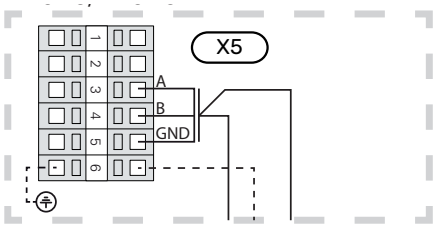
F2030



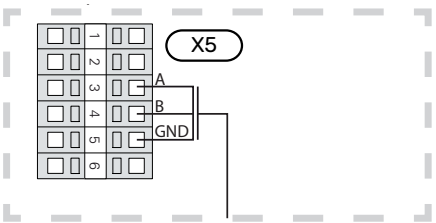
F2030



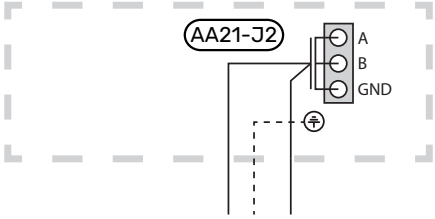
F2016/F2026



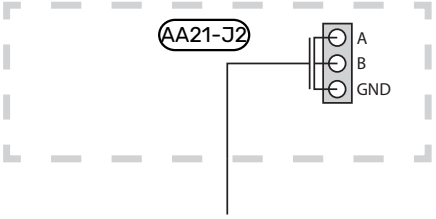
F2016/F2026



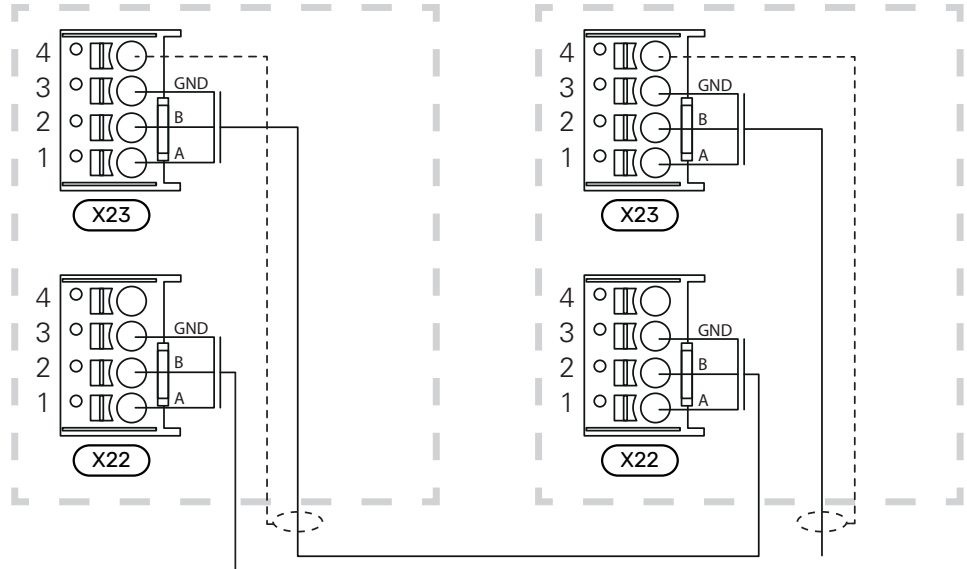
F2015/F2020/F2025/F2300



F2015/F2020/F2025/F2300

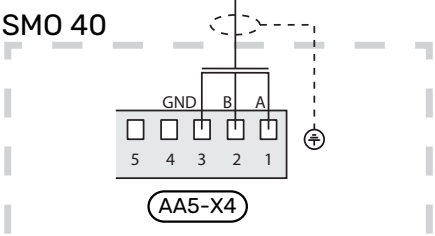


S2125/F2120



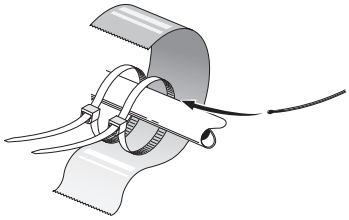
S2125/F2120

SMO 40



SENSORS

Temperature sensor installation on pipe



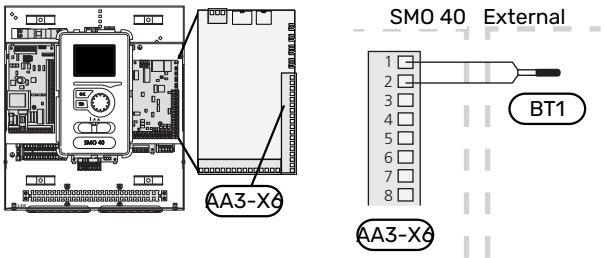
The temperature sensors are fitted using heat conducting paste, cable ties (the first cable tie is secured to the pipe in the middle of the sensor and the other cable tie is mounted approx. 5 cm after the sensor) and aluminium tape. Then insulate them using the enclosed insulation tape.

Outside sensor

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

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

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



Room sensor

SMO 40 is supplied with an enclosed room sensor (BT50). The room sensor has a number of functions:

1. Shows current room temperature in the display on SMO 40.
2. Option of changing the room temperature in °C.
3. Provides the option of fine-tuning the room temperature.

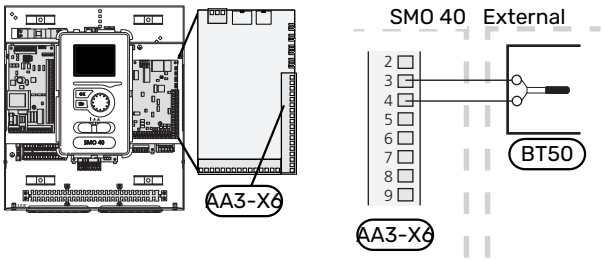
Install the sensor in a neutral position where the set temperature is wanted.

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

SMO 40 operates without the room sensor, but if you want to read the home's indoor temperature from the display on SMO 40, the sensor must be fitted. Connect the room sensor to X6:3 and X6:4 on the input board (AA3).

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

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



Caution

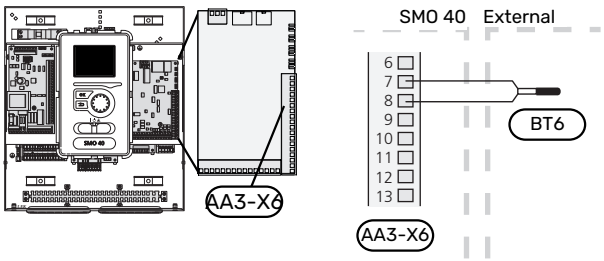
Changes of temperature in accommodation take time. For example, short time periods in combination with underfloor heating will not give a noticeable difference in room temperature.

Temperature sensor, hot water charging

The temperature sensor, hot water charging (BT6) is placed in the submerged tube on the water heater.

Connect the sensor to terminal block X6:7 and X6:8 on the input board (AA3).

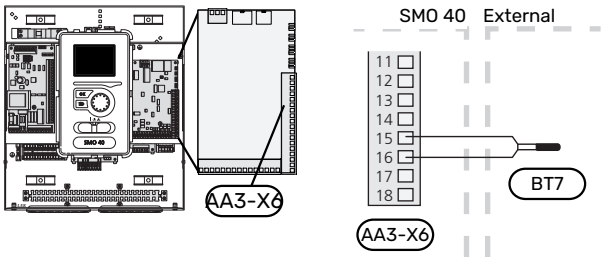
Hot water charging is activated in menu 5.2 or in the start guide.



Temperature sensor, hot water top

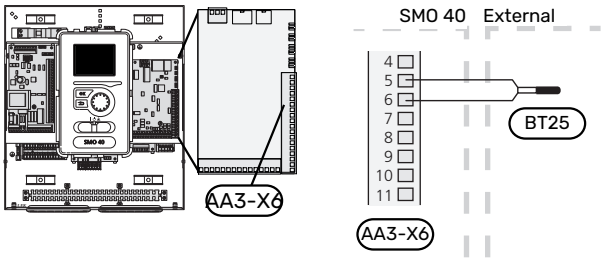
A temperature sensor for hot water top (BT7) can be connected to SMO 40 to show the water temperature at the top of the tank (if it is possible to install a sensor at the top of the tank).

Connect the sensor to terminal block X6:15 and X6:16 on the input board (AA3).



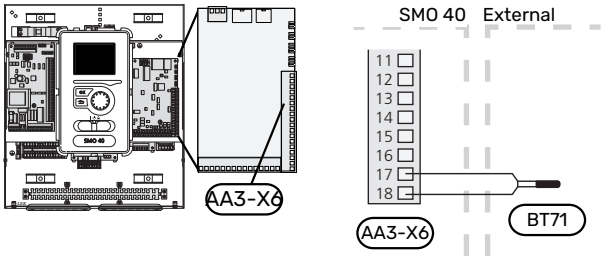
External supply temperature sensor

Connect the external supply temperature sensor (BT25) (required for additional heat after reversing valve, heating/hot water (QN10)), to terminal block X6:5 and X6:6 on the input board (AA3).



External return line sensor

Connect the external return line sensor (BT71) to terminal block X6:17 and X6:18 on the input board (AA3).



Caution

For docking that requires connection of other sensors, see "Possible selection for AUX inputs" on page 27.

Optional connections

LOAD MONITOR

Load monitor with current sensor

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

SMO 40 has a load monitor that, with the aid of a current sensor, controls the power steps for the external electric additional heat by disconnecting from the electric additional heat step-by-step in event of overload in a phase.

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

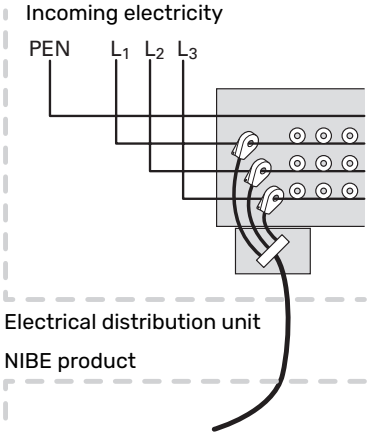
Reconnection occurs when the other current consumption is reduced.

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

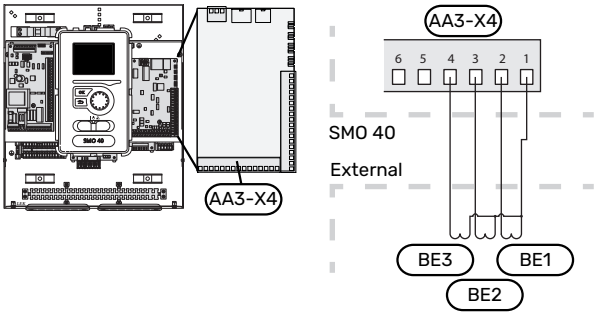
Connection and activation of current sensors

> **NOTE**
> The incoming current must not exceed 50 A and the voltage from the current sensor to the input board must not exceed 3.2 V. At a higher current/voltage, the enclosed current sensors are replaced with the accessory CMS 10-200.

1. Install a current sensor on each incoming phase conductor into the electrical distribution unit. This is best done in the electrical distribution unit.
2. Connect the current sensors to a multi-core cable in an enclosure directly adjacent to the electrical distribution unit. The multi-core cable between the enclosure and SMO 40 must have a cable area of at least 0.5 mm².



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

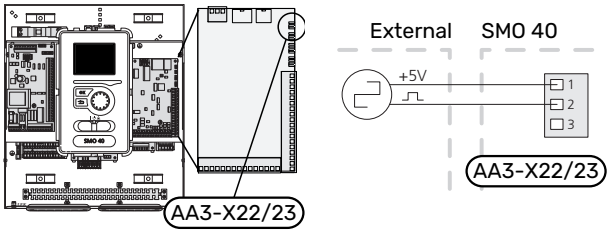


4. Specify the size of the property's main fuse in menu 5.1.12 - "addition".

CONNECTING EXTERNAL ENERGY METER

> **NOTE**
> Connection of external energy meter requires version 35 or later on input board (AA3) as well as "display version" 8762 or later.

One or two energy meters (BE6, BE7) are connected to terminal block X22 and/or X23 on input board (AA3).



Activate the energy meter(s) in menu 5.2.4 and then set the desired value (energy per pulse) in menu 5.3.21.

STEP CONTROLLED ADDITIONAL HEAT

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

Step-controlled additional heat before the reversing valve QN10

External step-controlled additional heat can be controlled by up to three potential-free relays in the control module (3 step linear or 7 step binary).

The electric additional heat will charge with the maximum permitted immersion heater output together with the compressor to conclude the hot water charging and return to charging the heating as soon as possible. This only occurs when the number of degree minutes is below the start value for the additional heat.

Step-controlled additional heat after the reversing valve QN10

External step-controlled additional heat can be controlled by two relays (2 step linear or 3 step binary), which means that the third relay is used to control the immersion heater in the water heater/accumulator tank.

With the AXC 30 accessory, a further three potential-free relays can be used for additional heat control, which then gives an additional 3 linear or 7 binary steps.

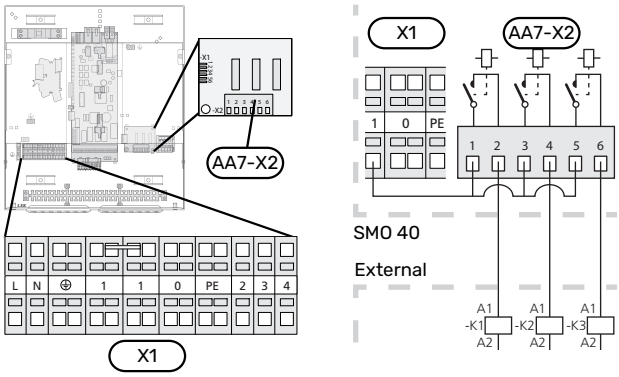
Step in occurs with at least 1 minute interval and step outs with at least 3 seconds interval.

Step 1 is connected to terminal block X2:2 on the additional relay board (AA7).

Step 2 is connected to terminal block X2:4 on the additional relay board (AA7).

Step 3 or immersion heater in the water heater/accumulator tank is connected to terminal block X2:6 on the additional relay board (AA7).

The settings for step controlled additional heat are made in menu 4.9.3 and menu 5.1.12.



If the relays are to be used for control voltage, bridge the supply from terminal block X1:1 toX2:1, X2:3 and X2:5 on additional relay board (AA7). Connect the neutral from the external additional heat to terminal block X1:0.

SHUNT CONTROLLED ADDITIONAL HEAT

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

This connection enables an external additional heater, e.g. an oil boiler, gas boiler or district heating exchanger to aid with heating.

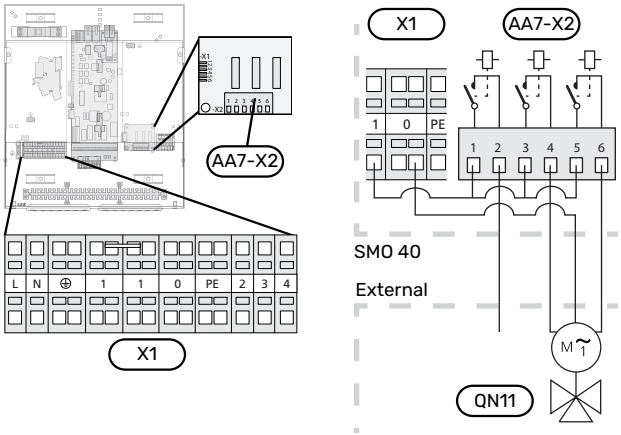
SMO 40 controls a shunt valve and start signal for the additional heat using three relays. If the installation cannot manage to maintain the correct supply temperature, the additional heat starts. When the boiler sensor (BT52) shows approx. 55 °C, SMO 40 sends a signal to the shunt (QN11) to open from the additional heat. The shunt (QN11) is controlled to ensure the true supply temperature corresponds with the control system's theoretically calculated set point value. When the heating demand drops sufficiently so that additional heat is no longer required, the shunt (QN11) closes completely. Factory-set minimum operating time for the boiler is 12 hours (can be adjusted in menu 5.1.12).

The settings for shunt controlled additional heat are made in menu 4.9.3 and menu 5.1.12.

The boiler sensor (BT52) is connected to soft inputs and selected in menu 5.4.

Connect the shunt motor (QN11) to terminal block X2:4 (230 V V, close) and 6 (230 V V, open) on the additional relay board (AA7) and terminal block X1:0 (N).

To control switching the additional heat on and off, connect it to terminal block X2:2 on the extra relay board (AA7).



If the relays are to be used for control voltage, bridge the supply from terminal block X1:1 toX2:1, X2:3 and X2:5 on additional relay board (AA7).

RELAY OUTPUT FOR EMERGENCY MODE

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

When the switch (SF1) is in "⚠" mode (emergency mode) the following components are activated (if they are connected).

- the circulation pumps (EB101-GP12 and EB102-GP12)
- external circulation pump (GP10)
- the potential free switching emergency mode relay (K2).

Caution

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

Caution

The relay outputs on the accessory board (AA5) may be subjected to a max load of 2 A (230 V~) in total.

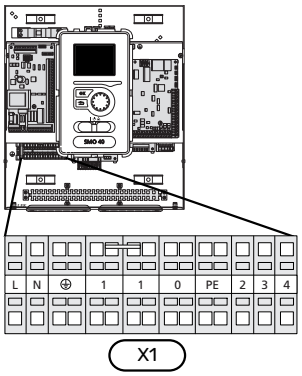
Caution

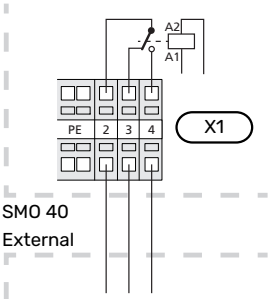
External accessories are disconnected.

Caution

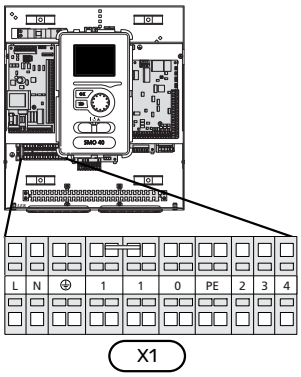
No hot water is produced when emergency mode is activated.

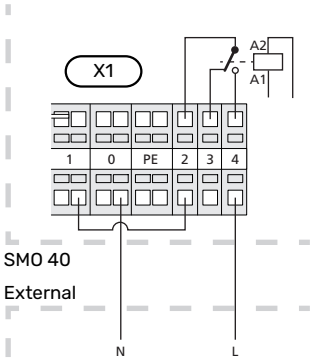
The emergency mode relay can be used to activate external additional heat, an external thermostat must then be connected to the control circuit to control the temperature. Ensure that the heating medium circulates through the external additional heating.





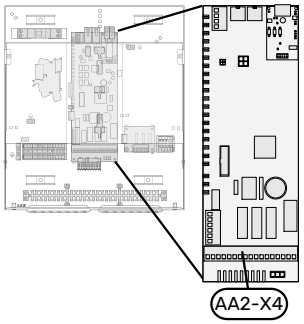
If the relay is to be used for control voltage, bridge the supply from terminal block X1:1 to X1:2 and connect neutral and control voltage from the external additional heat to X1:0 (N) and X1:4 (L).

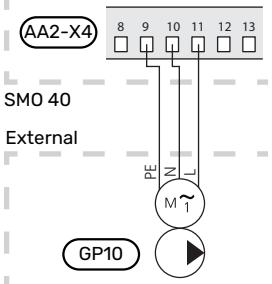




EXTERNAL CIRCULATION PUMP

Connect the external circulation pump (GP10) to terminal block X4:9 (PE), X4:10 (N) and X4:11 (230 V) on the base board (AA2) as illustrated.



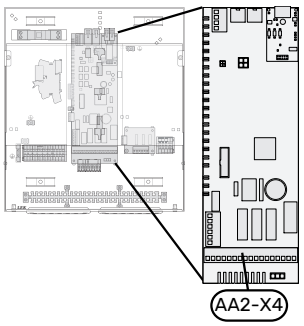


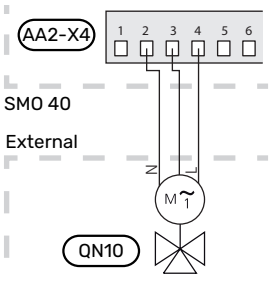
REVERSING VALVE, HEATING/HOT WATER

SMO 40 can be supplemented with an external reversing valve (QN10) for hot water control. (See page 58 for accessory)

Hot water production can be selected in menu 5.2.4.

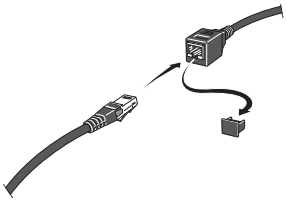
Connect the external reversing valve (QN10) as illustrated to terminal block X4:2 (N), X4:3 (control) and X4:4 (L) on the base board (AA2).





MYUPLINK

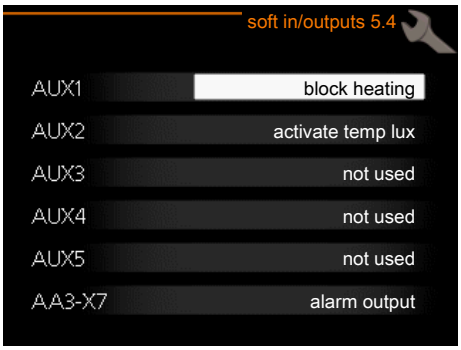
Connect the network connected cable (straight, Cat.5e UTP) with RJ45-contact (male) to RJ45 contact (female) on the bottom of the control module.



EXTERNAL CONNECTION OPTIONS

SMO 40 has software-controlled AUX inputs and outputs for connecting the external switch function (contact has to be potential-free) or sensor.

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



For certain functions, accessories may be required.

TIP

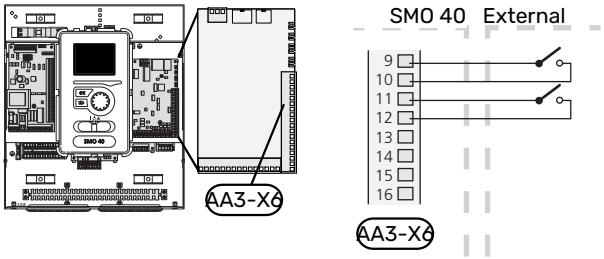
Some of the following functions can also be activated and scheduled via menu settings.

Selectable inputs

Selectable inputs on the input board (AA3) and terminal block (X2) for these functions are:

AUX1	AA3-X6:9-10
AUX2	AA3-X6:11-12
AUX3	AA3-X6:13-14
AUX4	X2:1
AUX5	X2:2
AUX6	X2:3

GND for AUX4-6 is connected to terminal block X2:4.



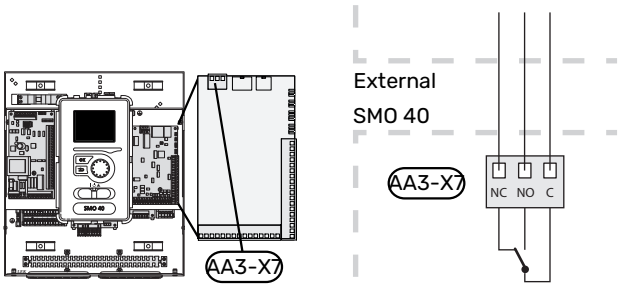
The example above uses the inputs AUX1 (X6:9-10) and AUX2 (X6:11-12) on the input board (AA3).

Selectable outputs

A selectable output is AA3-X7.

The output is a potential-free switching relay.

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



Caution

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

TIP

The AXC accessory is required, if more than two functions are to be connected to the AUX outputs.

Possible selection for AUX inputs

Temperature sensor

Available options are:

- external supply temperature sensor cooling (EQ1-BT25) is used when docking 2-pipe cooling (can be selected when the air/water heat pump is permitted to produce cooling)

- cooling/heating (BT74), determines when it is time to switch between cooling and heating mode. (can be selected when the air/water heat pump is permitted to produce cooling)

  When several room sensors have been installed, you can select which one of them will be controlling in menu 1.9.5.

  When the cooling/heating sensor (BT74) has been connected and activated in menu 5.4, no other room sensor can be selected in menu 1.9.5 - "cooling settings".
- supply cooling (BT64) is used with active cooling 4-pipe (can be selected when the air/water heat pump is permitted to produce cooling)
- boiler (BT52) (only shown if shunt-controlled additional heat is selected in menu 5.1.12 - " internal electrical addition")
- additional heat (BT63), is used when docking "step-controlled additional heat before reversing valve for hot water" in order to measure the temperature after the additional heat.
- displayed hot water sensor for HWC (BT70). Placed on the supply line.
- displayed hot water sensor for HWC (BT82). Placed on the return line.

Monitor

Available options are:

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

External activation of functions

An external switch function can be connected to SMO 40 to activate various functions. The function is activated during the time the switch is closed.

Possible functions that can be activated:

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

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

  – *climate system 1 to 8*

    Setting the value for the change is performed in menu 1.9.2 - "external adjustment".
- activation of one of four fan speeds.

  (Can be selected if ventilation accessory is activated.)

  The following five options are available:

  – 1–4 is normally open (NO)

  – 0 is normally closed (NC)

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

> **Caution**
>
> This function can only be used in mains networks that support the "SG Ready" standard.
>
> "SG Ready" requires two AUX inputs.

In cases where this function is required, it must be connected to terminal block X6 on the input board (AA3) or to terminal block X2.

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

Closed or open switch means one of the following:

– *Blocking (A: Closed, B: Open)*

  “SG Ready” is active. The compressor in the heat pump and additional heat is blocked.

– *Normal mode (A: Open, B: Open)*

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

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

  "SG Ready" is active. The system focuses on costs savings and can for example exploit a low tariff from the electricity supplier or over-capacity from any own power source (effect on the system can be adjusted in the menu 4.1.5).

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

  "SG Ready" is active. The system is permitted to run at full capacity at over capacity (very low price) with the electricity supplier (effect on the system is settable in menu 4.1.5).

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

- +Adjust

  Using +Adjust, the installation communicates with the underfloor heating's control centre* and adjusts the heating curve and calculated supply temperature according to the underfloor heating system's reconnection.

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

  *Support for +Adjust required

> **Caution**
>
> This accessory may require a software update in your SMO 40. The version can be checked in the "Service info" menu 3.1. Visit myuplink.com and click on the "Software" tab to download the latest software to your installation.

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

External blocking of functions

An external switch function can be connected to SMO 40 for blocking various functions. The switch must be potential-free and a closed switch results in blocking.

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

Functions that can be blocked:

- hot water (hot water production). Any hot water circulation (HWC) remains in operation.
- external supply temperature sensor (BT25) (control of temperature to the heating system)
- cooling (blocking cooling requirement)
- internally controlled additional heat
- compressor in heat pump (EB101) and/or (EB102)
- tariff blocking (additional heat, compressor, heating, cooling and hot water are disconnected)
- block OPT10 (Can be selected when the accessory OPT10 is activated.)
- block AZ10, blocks the compressor in F135. (Can be selected when the accessory F135 is activated.)

Possible selections for AUX output

Indications

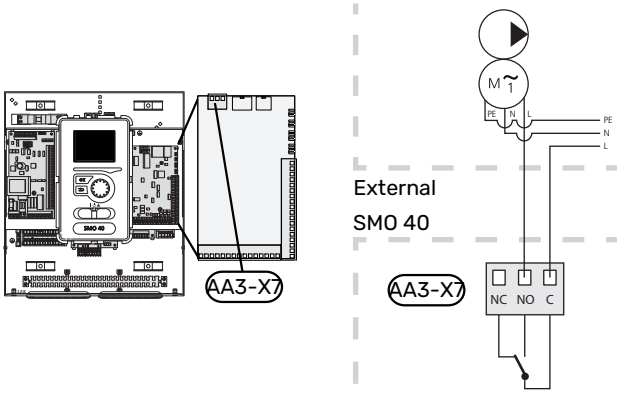
- common alarm
- cooling mode indication (can be selected when the heat pump is permitted to produce cooling)
- holiday
- away mode for "smart home" (complement to the functions in menu 4.1.7 - " smart home")

Control

- circulation pump for hot water circulation
- active cooling in a 4-pipe system (can be selected when the air/water heat pump is permitted to run cooling)
- external heating medium pump
- photovoltaic control (Can be selected when the accessory EME 10/20 is activated.)

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

An external circulation pump is connected to the AUX output, as illustrated below. If the pump has to work during an alarm, the cable is moved from position NO to position NC.



Connecting accessories

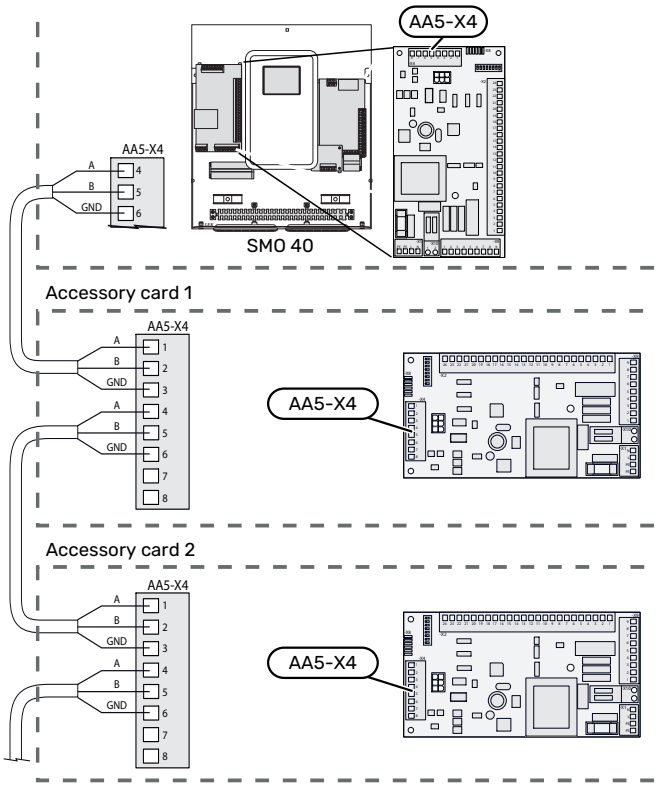
Instructions for connecting accessories are provided in the manual accompanying the accessory. See section "Accessories" for a list of the accessories that can be used with SMO 40. Connection for communication with the most common accessories is shown here.

ACCESSORIES WITH ACCESSORY BOARD (AA5)

Accessories with accessory board (AA5) are connected to the control module's terminal block X4:4-6 on the input board AA5.

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

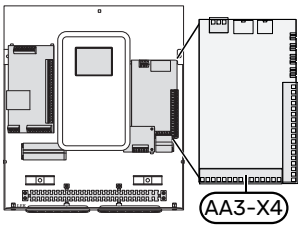
Because there can be different connections for accessories with accessory board (AA5), you should always read the instructions in the manual for the accessory that is to be installed.

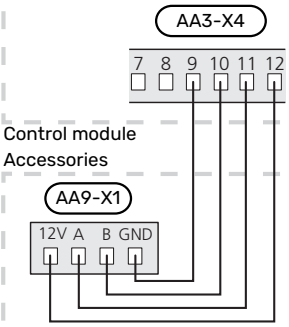


ACCESSORIES WITH COMMUNICATION BOARDS (AA9)

Accessories with communication board (AA9) are connected to the control module's terminal block X4:9-12 on the input board AA3.

Because there can be different connections for accessories with communication boards (AA9), you should always read the instructions in the manual for the accessory that is to be installed.





Commissioning and adjusting

Preparations

- SMO 40 must be ready-connected.
- The climate system must be filled with water and bled.

Check the reversing valve

1. Activate "AA2-K1 (QN10)" in menu 5.6.
2. Check that the reversing valve opens or is open for hot water charging.
3. Deactivate "AA2-K1 (QN10)" in menu 5.6.

Check AUX socket

To check any function connected to the AUX socket

1. Activate "AA3-X7" in menu 5.6.
2. Check the desired function.
3. Deactivate "AA3-X7" in menu 5.6.

Start-up and inspection

SOFTWARE VERSION

Compatible NIBE air/water heat pump has to be equipped with a control board that, as a minimum, has the software version given in the following list. The control board's version is shown in the heat pump's display (if applicable) at start-up.

Product	Software version
F2015	55
F2016	55
F2020	118
F2025	55
F2026	55
F2030	all versions
F2040	all versions
F2050	all versions
F2120	all versions
S2125	all versions
NIBE SPLIT HBS 05: AMS 10-6 + HBS 05-6 AMS 10-8 + HBS 05-12 AMS 10-12 + HBS 05-12 AMS 10-16 + HBS 05-16	all versions
NIBE SPLIT HBS 20: AMS 20-6 + HBS 20-6 AMS 20-10 + HBS 20-10	all versions

START GUIDE

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

1. Power the heat pump.
2. Set switch (SF1) on SMO 40 to position "I".
3. Follow the instructions in the display's start guide. If the start guide does not start when you start the SMO 40, you can start it manually in menu 5.7.

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

Commissioning

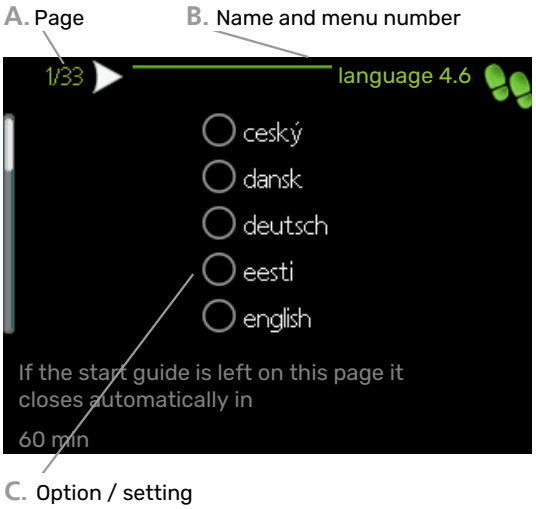
The first time the installation is started a start guide is started. The start guide instructions state what needs to carried out at the first start together with a run through of the installation's basic settings.

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

During the start-up guide, the reversing valves and the shunt are run back and forth to help vent the heat pump.

> **Caution**
>
> As long as the start guide is active, no function in SMO 40 will start automatically.
>
> The start guide will appear at each restart of SMO 40, until it is deselected on the last page.

Operation in the start guide



A. Page

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

Scroll between the pages of the start guide as follows:

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

B. Name and menu number

Here, you can see which menu in the control system this page of the start guide is based on. The digits in brackets refer to the menu number in the control system.

If you want to read more about affected menus either consult the help menu or read the user manual.

C. Option / setting

Make settings for the system here.

COMMISSIONING WITH ADDITIONAL HEATING ONLY

At first start follow the start guide, otherwise follow the list below.

1. Configure the additional heat in menu 5.1.12.
2. Go to menu 4.2 op. mode.
3. Mark “add. heat only”.

> **Caution**
>
> When commissioning without NIBE outdoor unit the "communication error" alarm may appear in the display.
>
> The alarm is reset if the relevant air/water heat pump is deactivated in menu 5.2.2 ("installed slaves").

COOLING MODE

If the installation contains one or more NIBE air/water heat pumps that can produce cooling (NIBE F2040 or F2120) cooling operation can be permitted. See relevant Installer Manual.

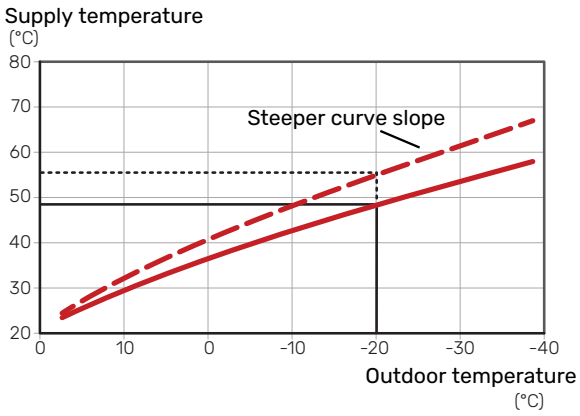
When cooling operation is permitted you can choose cooling mode indication in menu 5.4 for the AUX output.

Setting the cooling/heating curve

In the menus "heating curve" and "curve", you can see the heating and cooling curves for your house. The purpose of the curves is to provide an even indoor temperature, regardless of the outdoor temperature, and thereby energy-efficient operation. Based on these curves, SMO 40 determines the temperature of the water to the climate system (the supply temperature) and thus the indoor temperature.

CURVE COEFFICIENT

The slopes of the heating /cooling curves indicate how many degrees the supply temperature is to be increased/reduced when the outdoor temperature drops/increases. A steeper slope means a higher supply temperature for heating or a lower supply temperature for cooling at a certain outdoor temperature.

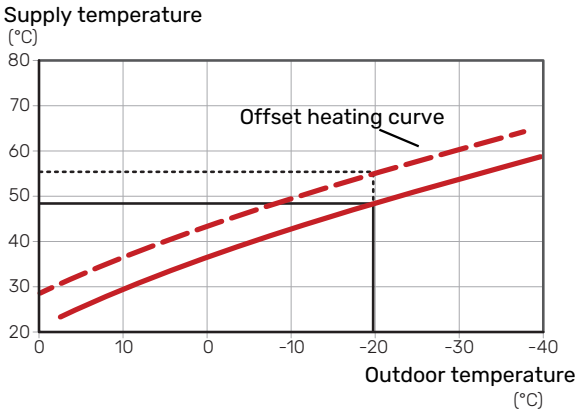


The optimum curve slope depends on the climate conditions in your location, whether the house has radiators, fan coils or underfloor heating and how well insulated the house is.

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

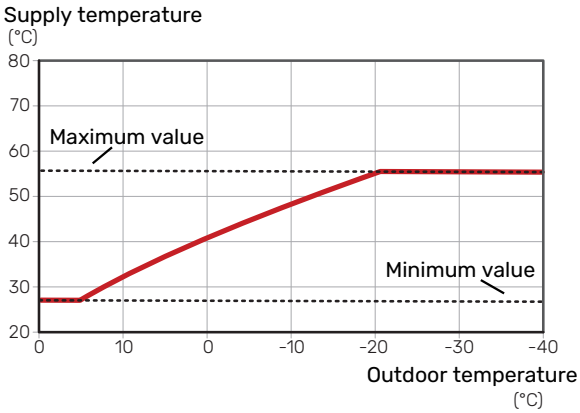
CURVE OFFSET

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



SUPPLY TEMPERATURE – MAXIMUM AND MINIMUM VALUES

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



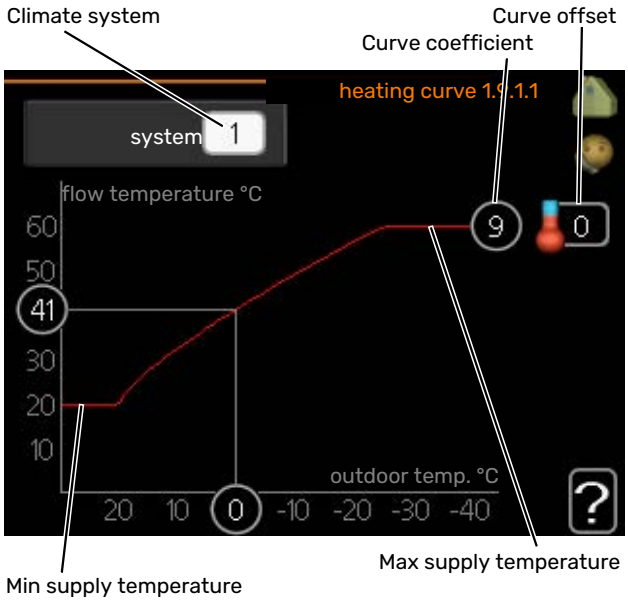
Caution

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

Caution

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

ADJUSTMENT OF CURVE



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

Caution

If you need to adjust "min. flow line temp." and/or "max flow line temperature", you do this in other menus.

Settings for "min. flow line temp." in menu 1.9.3.

Settings for "max flow line temperature" in menu 5.1.2.

Caution

Curve 0 means that "own curve" is used.

Settings for "own curve" are made in menu 1.9.7.

TO READ OFF A HEATING CURVE

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

myUplink

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

Visit myuplink.com for more information.

Update your system to the latest software version.

Specification

You need the following in order for myUplink to be able to communicate with your SMO 40:

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

We recommend our mobile apps for myUplink.

Connection

To connect your system to myUplink:

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

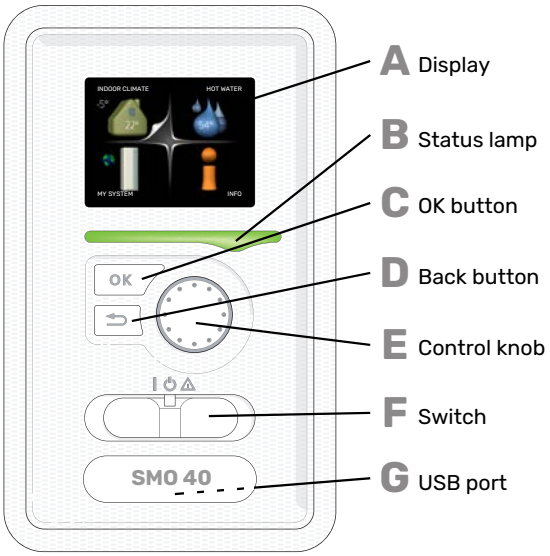
Range of services

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

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

Control - Introduction

Display unit



A DISPLAY

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

B STATUS LAMP

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

- lights green during normal operation.
- lights yellow in emergency mode.
- lights red in the event of a deployed alarm.

C OK BUTTON

The OK button is used to:

- confirm selections of sub menus/options/set values/page in the start guide.

D BACK BUTTON

The back button is used to:

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

E CONTROL KNOB

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

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

F SWITCH (SF1)

The switch assumes three positions:

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

The emergency mode must only be used in the event of a fault in the control module. In this mode, the compressor in the heat pump switches off and any immersion heater engages. The control module display is not lit and the status lamp shines yellow.

G USB PORT

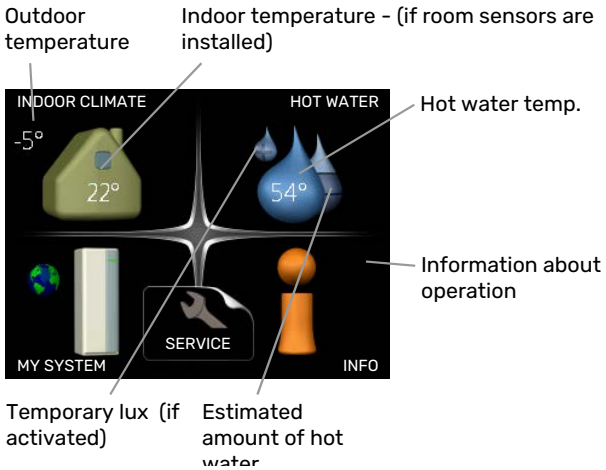
The USB port is hidden beneath the plastic badge with the product name on it.

The USB port is used to update the software.

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

Menu system

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



MENU 1 - INDOOR CLIMATE

Setting and scheduling the indoor climate. See information in the help menu or user manual.

MENU 2 - HOT WATER

Setting and scheduling hot water production. See information in the help menu or user manual.

This menu only appears if a water heater is installed in the system.

MENU 3 - INFO

Display of temperature and other operating information and access to the alarm log. See information in the help menu or user manual.

MENU 4 - MY SYSTEM

Setting time, date, language, display, operating mode etc. See information in the help menu or user manual.

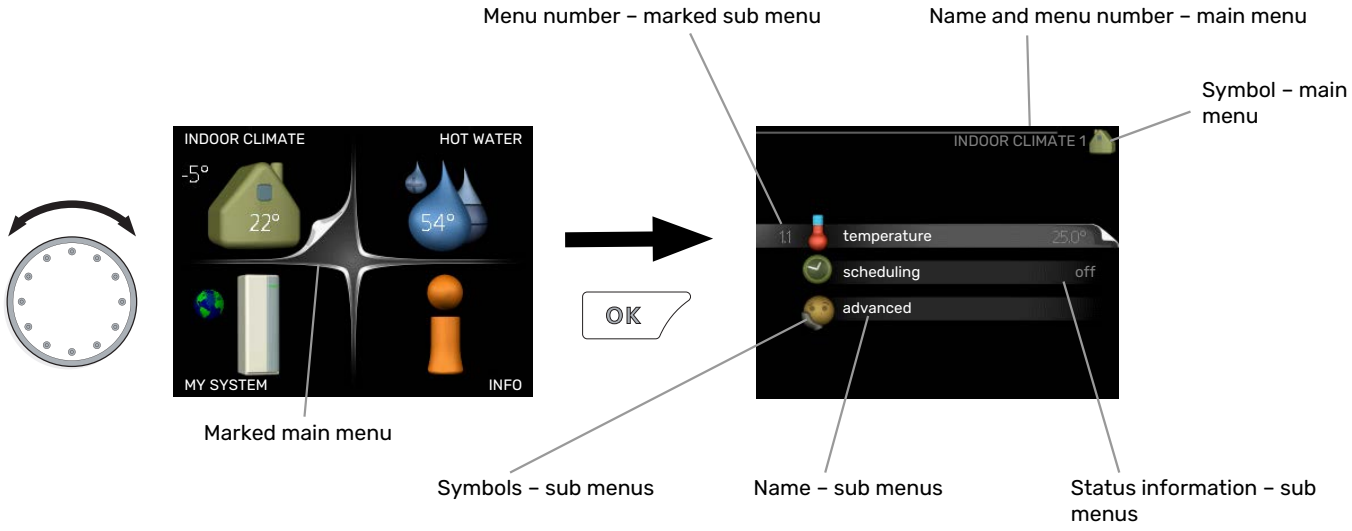
MENU 5 - SERVICE

Advanced settings. These settings are not available to the end user. The menu is visible when the Back button is pressed for 7 seconds, when you are in the start menu. See page 42.

SYMBOLS IN THE DISPLAY

The following symbols may appear on the display during operation.

Symbol	Description
	This symbol appears by the information sign if there is information in menu 3.1 that you should note.
	These two symbols indicate if the compressor in the outdoor module or the additional heat in the installation is blocked via SMO 40. These can, for example, be blocked depending on which operating mode is selected in menu 4.2, if blocking is scheduled in menu 4.9.5 or if an alarm has occurred that blocks one of them.  Blocking the compressor.  Blocking additional heat.
	This symbol appears if periodic increase or lux mode for the hot water is activated.
	This symbol indicates whether "holiday setting" is active in 4.7.
	This symbol indicates whether SMO 40 has contact with myUplink.
	This symbol indicates the actual speed of the fan if the speed has changed from the normal setting. Accessory needed.
	This symbol is visible in installations with active solar accessories.
	This symbol indicates whether pool heating is active. Accessory needed.
	This symbol indicates whether cooling is active. Heat pump with cooling function required.



OPERATION

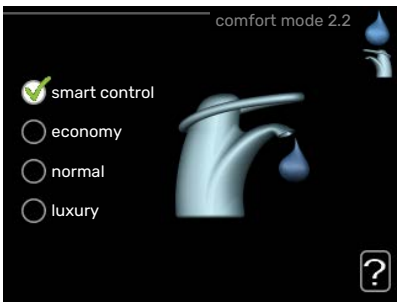
To move the cursor, turn the control knob to the left or the right. The marked position is white and/or has a turned up tab.

SELECTING MENU

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

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

SELECTING OPTIONS



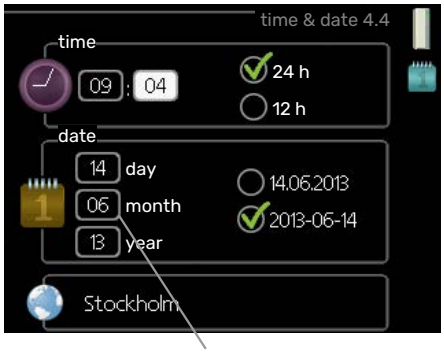
In an options menu the current selected option is indicated by a green tick.

To select another option:

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

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

SETTING A VALUE



To set a value:

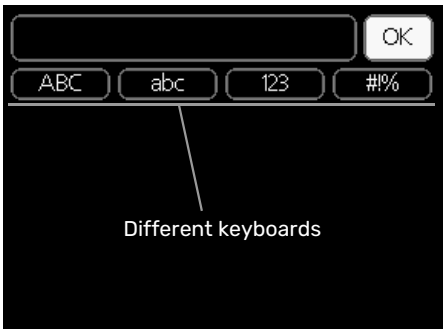
1. Mark the value you want to set using the control knob.

2. Press the OK button. The background of the value becomes green, which means that you have accessed the setting mode.

3. Turn the control knob to the right to increase the value and to the left to reduce the value.

4. Press the OK button to confirm the value you have set. To change and return to the original value, press the Back button.

USE THE VIRTUAL KEYBOARD



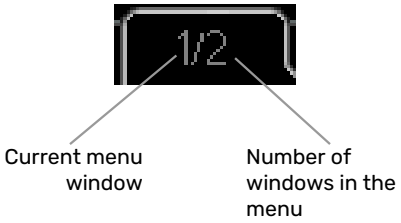
In some menus where text may require entering, a virtual keyboard is available.

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

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

SCROLL THROUGH THE WINDOWS

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



Scroll through the windows in the start guide

Arrows to scroll through window in start guide

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

HELP MENU

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

To access the help text:

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

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

Control

Menu 1 - INDOOR CLIMATE

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

* Accessories are needed.

** Heat pump with cooling function required.

Menu 2 - HOT WATER

2 - HOT WATER*	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. *

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

* Accessories are needed.

Menu 4 - MY SYSTEM

4 - MY SYSTEM	4.1 - plus functions	4.1.1 - pool *	
		4.1.2 - pool 2 *	
		4.1.3 - internet	4.1.3.1 - myUplink
			4.1.3.8 - tcp/ip settings
			4.1.3.9 - proxy settings
		4.1.4 - sms *	
		4.1.5 - SG Ready	
		4.1.6 - smart price adaption™	
		4.1.7 - smart home	
		4.1.8 - smart energy source™	4.1.8.1 - settings
			4.1.8.2 - set. price
			4.1.8.3 - CO2 impact
			4.1.8.4 - tariff periods, electricity
			4.1.8.6 - tariff per, ext. shunt add
			4.1.8.7 - tariff per, ext. step add
			4.1.8.8 - tariff periods, OPT10*
		Menu 4.1.10 – solar electricity *	
	4.2 - op. mode		
	4.3 - my icons		
	4.4 - time & date		
	4.6 - language		
	4.7 - holiday setting		
	4.9 - advanced	4.9.1 - op. prioritisation	
		4.9.2 - auto mode setting	
		4.9.3 - degree minute setting	
		4.9.4 - factory setting user	
		4.9.5 - schedule blocking	
		4.9.6 - schedule silent mode	
		4.9.7 – tools	

* Accessories are needed.

Menu 5 - SERVICE

OVERVIEW

5 - SERVICE	5.1 - operating settings	5.1.1 - hot water settings *	
		5.1.2 - max flow line temperature	
		5.1.3 - max diff flow line temp.	
		5.1.4 - alarm actions	
		5.1.5 - fan sp. exhaust air *	
		5.1.6 – fan sp. supply air*	
		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 - system settings	5.2.2 - installed slaves	
		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 *	
		5.3.4 - solar heating *	
		5.3.6 - step controlled add. heat	
		5.3.8 - hot water comfort *	
		5.3.11 - modbus *	
		5.3.12 - exhaust/supply air module *	
		5.3.14 - F135 *	
		5.3.15 - GBM communications module *	
		5.3.16 - humidity sensor *	
		5.3.21 - flow sensor / energy meter*	
	5.4 - soft in/outputs		
	5.5 - factory setting service		
	5.6 - forced control		
	5.7 - start guide		
	5.8 - quick start		
	5.9 - floor drying function		
	5.10 - change log		
	5.11 - 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		

* Accessory needed.

Go to the main menu and hold the Back button in for 7 seconds to access the Service menu.

Sub-menus

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

operating settings Operating settings for the control module.

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

accessory settings Operational settings for different accessories.

soft in/outputs Setting software-controlled in and outputs on the input board (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 different components in the indoor module.

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

quick start Quick starting the compressor.

> NOTE
>
> Incorrect settings in the service menus can damage the installation.

MENU 5.1 - OPERATING SETTINGS

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

MENU 5.1.1 - HOT WATER SETTINGS

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

The hot water settings require that hot water production is activated in menu 5.2.4 accessories.

economy

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

Factory setting start temp. economy: 42 °C

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

Factory setting stop temp. economy: 48 °C

normal

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

Factory setting start temp. normal: 46 °C

Setting range stop temp. normal: 5 – 65 °C

Factory setting stop temp. normal: 50 °C

luxury

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

Factory setting start temp. lux: 49 °C

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

Factory setting stop temp. lux: 53 °C

stop temp. per. increase

Setting range: 55 – 70 °C

Factory setting: 55 °C

step difference compressors

Setting range: 0.5 – 4.0 °C

Factory setting: 1.0 °C

charge method

Setting range: target temp, delta temp

Default value: delta temp

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

The charge method for hot water operation is selected here. “delta temp” is recommended for heaters with charge coil, “target temp” for double-jacketed heaters and heaters with hot water coil.

MENU 5.1.2 - MAX FLOW LINE TEMPERATURE

climate system

Setting range: 5-80 °C

Default value: 60 °C

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

> **Caution**
>
> For underfloor heating systems, max flow line temperature should normally be set to between 35 and 45°C.
>
> Check the max floor temperature with your floor supplier.

MENU 5.1.3 - MAX DIFF FLOW LINE TEMP.

max diff compressor
Setting range: 1 – 25 °C

Default value: 10 °C

max diff addition
Setting range: 1 – 24 °C

Default value: 7 °C

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

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

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

MENU 5.1.4 - ALARM ACTIONS

Select how you want the control module to alert you that there is an alarm in the display here. The different alternatives are; the heat pump stops producing hot water and/or reduces the room temperature.

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

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

normal and speed 1-4
Setting range: 0 – 100 %

Set the speed for the five different selectable speeds for the fan here.

> **Caution**
>
> An incorrectly set ventilation flow can damage the house and may also increase energy consumption.

MENU 5.1.6 - FAN SP. SUPPLY AIR (ACCESSORY REQUIRED)

normal and speed 1-4
Setting range: 0 – 100 %

Set the speed for the five different selectable speeds for the fan here.

> **Caution**
>
> An incorrectly set value may damage the house in the long term and possibly increase energy consumption.

MENU 5.1.12 - ADDITION

Make settings for connected additional heat (step controlled or shunt controlled additional heat) here.

Select whether step controlled or shunt controlled additional heat is connected. Then you can make settings for the different alternatives.

add.type: step controlled

max step
Setting range (binary stepping deactivated): 0 – 3

Setting range (binary stepping activated): 0 – 7

Default value: 3

fuse size
Setting range: 1 - 200 A

Factory setting: 16 A

transformation ratio
Setting range: 300 - 3000

Factory setting: 300

Select this option, if the step-controlled additional heat is connected and is positioned before or after the reversing valve for hot water charging (QN10). Step-controlled additional heat could be, for example, an external electric boiler.

When binary stepping is deactivated (off), the settings refer to linear stepping.

Here, you can set the maximum number of permitted additional heat steps, whether there is internal additional heat in the tank (only accessible if the additional heat is positioned after the reversing valve for hot water charging (QN10)), whether binary stepping is to be used, the size of the fuse and the transformer ratio.

TIP

In order to select location before or after QN10, you need to tick "hot water production" in menu 5.2.4 - accessories and add a docking in menu 5.2.3 - docking. (Only one air/water heat pump in the system applies for this option.)

add.type: shunt controlled

prioritised additional heat
Setting range: on/off

Factory setting: off

minimum running time
Setting range: 0 – 48 h

Default value: 12 h

min temp.
Setting range: 5 – 90 °C

Default value: 55 °C

mixing valve amplifier
Setting range: 0.1 –10.0

Default value: 1.0

mixing valve step delay
Setting range: 10 – 300 s

Default values: 30 s

fuse size
Setting range: 1 - 200 A

Factory setting: 16 A

transformation ratio
Setting range: 300 - 3000

Factory setting: 300

Select this option if shunt controlled additional heat is connected.

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

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

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

MENU 5.1.14 - FLOW SET. CLIMATE SYSTEM

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

Default value: radiator

Setting range DOT: -40.0 – 20.0 °C

The factory setting of DOT value depends on the country that has been given for the product's location. The example below refers to Sweden.

Factory setting DOT: -20.0 °C

own setting
Setting range dT at DOT: 0.0 – 25.0

Factory setting dT at DOT: 10.0

Setting range DOT: -40.0 – 20.0 °C

Factory setting DOT: -20.0 °C

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

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

MENU 5.1.22 - HEAT PUMP TESTING

NOTE

This menu is intended for testing SMO 40 according to different standards.

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

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

MENU 5.1.23 - COMPRESSOR CURVE

Caution

This menu is only displayed if SMO 40 is connected to a heat pump with inverter controlled compressor.

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

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

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

MENU 5.1.25 - TIME FILTER ALARM

months btwn filter alarms
Setting range: 1 – 24

Factory setting: 3

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

MENU 5.2 - SYSTEM SETTINGS

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

MENU 5.2.2 - INSTALLED SLAVES

If one or more air/water heat pumps are connected to the control module, you set it here.

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

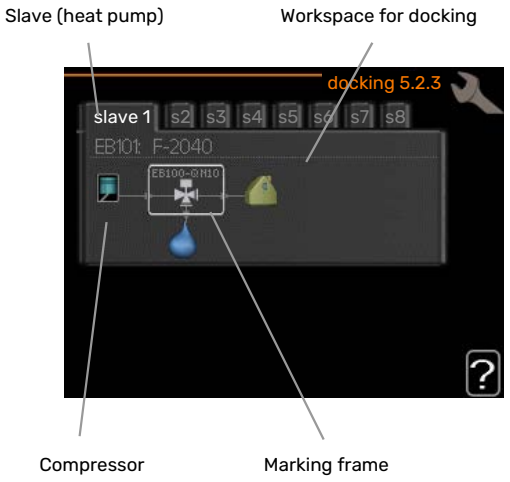
search installed slaves

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

MENU 5.2.3 - DOCKING

Enter how your system is docked regarding pipes, for example to pool heating, hot water heating and heating the building.

This menu has a docking memory which means that the control system remembers how a particular reversing valve is docked and automatically enters the correct docking the next time you use the same reversing valve.



Slave: Here you select the heat pump for which the docking setting is to be adjusted.

Compressor: Here, you select whether the compressor in the heat pump is blocked (factory setting) or standard (docked, for example, to pool heating, hot water charging and heating the building).

Marking frame: Move around the marking frame using the control knob. Use the OK button to select what you want to change and to confirm the setting in the options box that appears to the right.

Workspace for docking: The system docking is drawn here.

Symbol	Description
	Compressor (blocked)
	Compressor (standard)
	Reversing valves for hot water, cooling respectively pool control. The designations above the reversing valve indicate where it is electrically connected (EB101 = Slave 1, CL11 = Pool 1 etc.).
	Hot water charging
	Pool 1
	Pool 2
	Heating (heating the building, includes any extra climate system)
	Cooling

MENU 5.2.4 - ACCESSORIES

Set which accessories are installed on the installation here.

If the water heater is connected to SMO 40 hot water charging must be activated here.

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

search installed acc.

Mark “search installed acc." and press the OK button to automatically find connected accessories for SMO 40.

MENU 5.3 - ACCESSORY SETTINGS

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

MENU 5.3.2 - SHUNT CONTROLLED ADD. HEAT

prioritised additional heat
Setting range: on/off

Factory setting: off

start diff additional heat
Setting range: 0 – 2000 DM

Default values: 400 DM

minimum running time
Setting range: 0 – 48 h

Default value: 12 h

min temp.
Setting range: 5 – 90 °C

Default value: 55 °C

mixing valve amplifier
Setting range: 0.1 –10.0

Default value: 1.0

mixing valve step delay
Setting range: 10 – 300 s

Default values: 30 s

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

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

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

TIP

See the accessory installation instructions for function description.

MENU 5.3.3 - EXTRA CLIMATE SYSTEM

use in heating mode
Setting range: on/off

Factory setting: on

use in cooling mode
Setting range: on/off

Factory setting: off

mixing valve amplifier
Setting range: 0.1 – 10.0

Default value: 1.0

mixing valve step delay
Setting range: 10 – 300 s

Default values: 30 s

Contr. pump GP10
Setting range: on/off

Factory setting: off

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

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

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

Caution

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

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

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

See the accessory installation instructions for function description.

MENU 5.3.4 - SOLAR HEATING

start delta-T GP4
Setting range: 1 – 40 °C

Default value: 8 °C

stop delta-T GP4
Setting range: 0 – 40 °C

Default value: 4 °C

max. tank temperature
Setting range: 5 – 110 °C

Default value: 95 °C

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

Default value: 125 °C

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

Default value: 2 °C

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

Default value: 110 °C

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

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

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

freeze protection

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

solar panel cooling

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

See the accessory installation instructions for function description.

MENU 5.3.6 - STEP CONTROLLED ADD. HEAT

start diff additional heat
Setting range: 0 – 2000 DM

Default values: 400 DM

diff. between additional steps
Setting range: 0 – 1000 DM

Default values: 30 DM

max step
Setting range
(binary stepping deactivated): 0 – 3

Setting range
(binary stepping activated): 0 – 7

Default value: 3

binary stepping
Setting range: on/off

Factory setting: off

Make settings for step controlled addition here. Step controlled addition is for example an external electric boiler.

It is possible, for example, to select when the additional heat is to start, to set the maximum number of permitted steps and whether binary stepping is to be used.

When binary stepping is deactivated (off), the settings refer to linear stepping.

See the accessory installation instructions for function description.

MENU 5.3.8 - HOT WATER COMFORT

activating imm heater
Setting range: on/off

Factory setting: off

activ. imm heat in heat mode
Setting range: on/off

Factory setting: off

activating the mixing valve
Setting range: on/off

Factory setting: off

outgoing hot water
Setting range: 40 - 65 °C

Default value: 55 °C

mixing valve amplifier
Setting range: 0.1 – 10.0

Default value: 1.0

mixing valve step delay
Setting range: 10 – 300 s

Default values: 30 s

Make settings for the hot water comfort here.

See the accessory installation instructions for function description.

activating imm heater: The immersion heater is activated here, if installed in the water heater.

activ. imm heat in heat mode: Activate here whether the immersion heater in the tank (requires the above alternative to be activated) is to be permitted to charge hot water, if the compressors in the heat pump are prioritising heating.

activating the mixing valve: Activated if mixer valve is installed and it is to be controlled from SMO 40. When the option is active, you can set the outgoing hot water temperature, shunt amplification and shunt waiting time for the mixer valve.

outgoing hot water: Here, you can set the temperature at which the mixer valve is to restrict hot water from the water heater.

MENU 5.3.11 - MODBUS

address
Factory setting: address 1

word swap
Factory setting: not activated

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

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

See the accessory installation instructions for function description.

MENY 5.3.12 - EXHAUST/SUPPLY AIR MODULE

months btwn filter alarms
Setting range: 1 – 24

Default value: 3

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

Default value: 5 °C

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

Default value: 4 °C

bypass during heating
Setting range: on/off

Factory setting: off

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

Default value: 25 °C

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

Factory setting: ERS 20 / ERS 30

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

Default value: level monitor

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

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

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

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

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

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

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

TIP

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

MENU 5.3.14 - F135

charge pump speed
Setting range: 1 – 100 %

Factory setting: 70 %

hot water at cooling
Setting range: on/off

Factory setting: off

Here you can set the charge pump speed for F135. You can also choose whether you want to be able to charge hot water with F135 at the same time as the outdoor module produces cooling.

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

MENU 5.3.15 - GBM COMMUNICATION MODULE

start diff additional heat

Setting range: 10 – 2,000 DM

Factory setting: 700 DM

hysteresis

Setting range: 10 – 2,000 DM

Factory setting: 100 DM

Make settings for the gas boiler GBM 10-15 here. For example . you can select when the gas boiler is to start. See the accessory installation instructions for a description of function.

MENU 5.3.16 - HUMIDITY SENSOR

climate system 1 HTS
Setting range: 1–4

Default value: 1

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

Factory setting: off

prevent condensation, syst.
Setting range: on/off

Factory setting: off

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

Factory setting: off

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

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

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

See the Installer Manual for HTS 40 for function description.

MENU 5.3.21 - FLOW SENSOR / ENERGY METER

Supply temperature sensor

set mode
Setting range: EMK150 / EMK300/310 / EMK500

Factory setting: EMK150

energy per pulse
Setting range: 0 – 10000 Wh

Factory setting: 1000 Wh

pulses per kWh
Setting range: 1 – 10000

Factory setting: 500

Energy meter

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

Default value: energy per pulse

energy per pulse
Setting range: 0 – 10000 Wh

Factory setting: 1000 Wh

pulses per kWh
Setting range: 1 – 10000

Factory setting: 500

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

Flow sensor (Energy measurement kit EMK)

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

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

Starting from software version 8801R2 , you can select the flow sensor (EMK) you have connected in the system.

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

pulses per kWh: Here you set the number of pulses per kWh that are sent to SMO 40.

> **Caution**
>
> The software in SMO 40 must be software version 8801R2 or later. Visit myuplink.com and click on the "Software" tab to download the latest software to your installation.

Energy meter (Electricity meter)

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

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

pulses per kWh: Here you set the number of pulses per kWh that are sent to SMO 40.

MENU 5.4 - SOFT IN/OUTPUTS

Here you can select which in/output on the input board (AA3) and the terminal block (X2) the external switch function (page 27) has to be connected to.

Selectable inputs on terminal blocks AUX 1-6 (AA3-X6:9-14 and X2:1-4) and output AA3-X7.

MENU 5.5 - FACTORY SETTING SERVICE

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

Caution

When resetting, the start guide is displayed the next time the control module is restarted.

MENU 5.6 - FORCED CONTROL

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

MENU 5.7 - START GUIDE

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

See page 31 for more information about the start guide.

MENU 5.8 - QUICK START

It is possible to start the compressor from here.

Caution

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

NOTE

Do not quick start the compressor too many times over a short period of time, as this could damage the compressor and its surrounding equipment.

MENU 5.9 - FLOOR DRYING FUNCTION

length of period 1 – 7

Setting range: 0 – 30 days

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

Factory setting, period 4: 3 days

temp. period 1 – 7

Setting range: 15 – 70 °C

Default value:

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

Set the function for under floor drying here.

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

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

TIP

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

MENU 5.10 - CHANGE LOG

Read off any previous changes to the control system here.

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

Caution

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

MENU 5.11 - SLAVE SETTINGS

Settings for installed slaves can be made in the sub menus.

MENU 5.11.1 - EB101 - 5.11.8 - EB108

Make settings for the installed slaves here.

MENU 5.11.1.1 - HEAT PUMP

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

MENU 5.11.1.2 - CHARGE PUMP (GP12)

op. mode
Heating/cooling

Setting range: auto / intermittent

Default value: intermittent

Set the operating mode for the charge pump here.

auto: The charge pump runs according to the current operating mode for SMO 40.

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

speed during operation
heating, hot water, pool, cooling

Setting range: auto / manual

Default value: auto

Manual setting

Setting range: 1–100 %

Default values: 70 %

min. allowed speed
Setting range: 1–100 %

Default values: 1 %

speed in wait mode
Setting range: 1–100 %

Default values: 30 %

max. allowed speed
Setting range: 80–100 %

Default values: 100 %

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

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

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

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

5.12 - COUNTRY

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

Language settings can be made regardless of this selection.

Caution

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

Service

Service actions

> **NOTE**
> Servicing should only be carried out by persons with the necessary expertise.
>
> When replacing components on SMO 40 only replacement parts from NIBE may be used.

EMERGENCY MODE

> **NOTE**
> Switch (SF1) must not be put into mode "I" or ⚠ before the installation is filled with water. The compressor in the heat pump can be damaged.

Emergency mode is used in event of operational interference and in conjunction with service. Hot water is not produced in emergency mode.

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

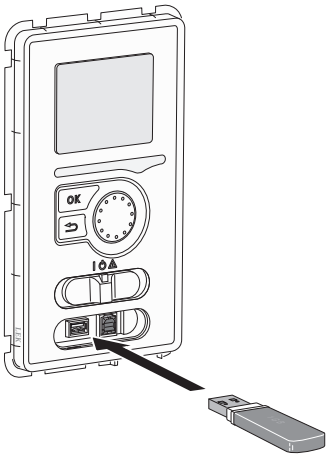
- The status lamp illuminates yellow.
- The display is not lit and the control computer is not connected.
- Hot water is not produced.
- The compressors in the heat pumps are switched off. Charge pump (EB101-GP12) and charge pump (EB102-GP12) (if installed) are running.
- Accessories are switched off.
- The heating medium pump is active.
- The emergency mode relay (K2) is active.

External additional heat is active if it is connected to the emergency mode relay (K2, terminal block X1). Ensure that the heating medium circulates through the external additional heat.

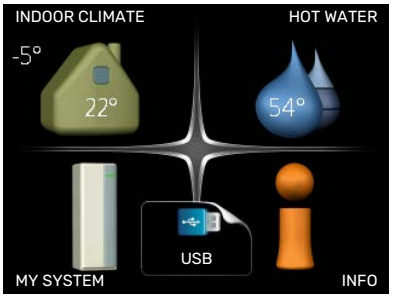
TEMPERATURE SENSOR DATA

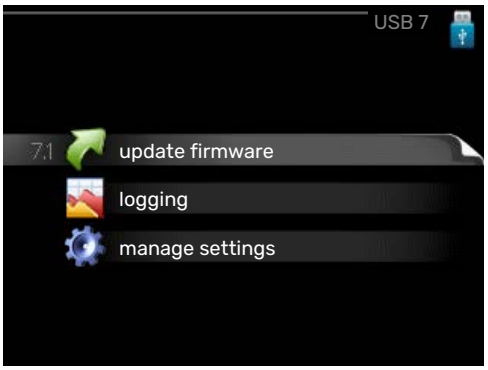
Temperature (°C)	Resistance (kOhm)	Voltage (VDC)
-10	56.20	3.047
0	33.02	2.889
10	20.02	2.673
20	12.51	2.399
30	8.045	2.083
40	5.306	1.752
50	3.583	1.426
60	2.467	1.136
70	1.739	0.891
80	1.246	0.691

USB SERVICE OUTLET



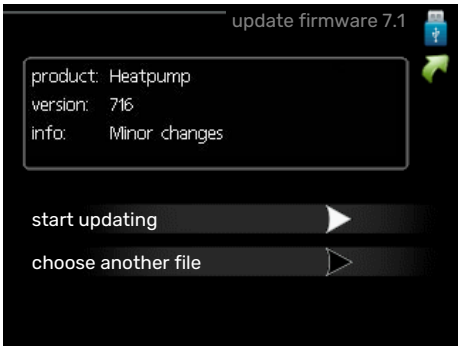
The display unit is equipped with a USB socket that can be used to update the software and save logged information in SMO 40.





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

Menu 7.1 - "update firmware"



This allows you to update the software in SMO 40.

> **NOTE**
>
> For the following functions to work the USB memory must contain files with software for SMO 40 from NIBE.

The fact box at the top of the display shows information (always in English) of the most probable update that the update software has selected form the USB memory.

This information states the product for which the software is intended, the software version and general information about it. If you want a file other than the one selected, the correct file can be selected through "choose another file".

start updating

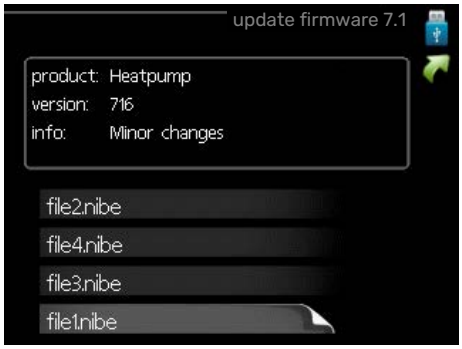
Select “start updating" if you want to start the update. You are asked whether you really want to update the software. Respond "yes" to continue or "no" to undo.

If you responded"yes" to the previous question the update starts and you can now follow the progress of the update on the display. When the update is complete SMO 40 restarts.

> **TIP**
>
> A software update does not reset the menu settings in SMO 40.

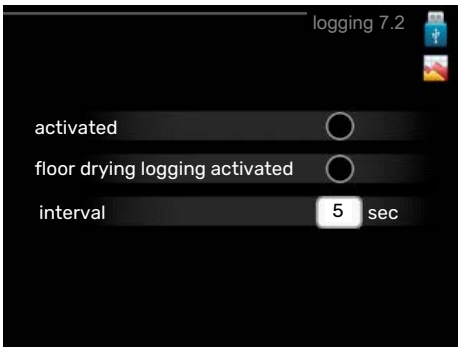
> **Caution**
>
> If the update is interrupted before it is complete (for example, by a power cut), the software can be reset to the previous version if the OK button is held in during start-up until the green lamp comes on (takes about 10 seconds).

choose another file



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

Menu 7.2 - logging



Setting range: 1 s – 60 min

Factory setting range: 5 s

Here you can choose how current measurement values from SMO 40 should be saved onto a log file on the USB memory.

1. Set the desired interval between loggings.
2. Tick “activated".
3. The present values from SMO 40 are saved in a file in the USB memory at the set interval until “activated" is unticked.

Caution

Untick "activated" before removing the USB memory.

Logging floor drying

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

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

Caution

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

Menu 7.3 - manage settings

save settings
Setting option: on/off

recover settings
Setting option: on/off

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

save settings: Here, you save menu settings in order to restore them later or to copy the settings to another SMO 40.

Caution

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

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

Caution

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

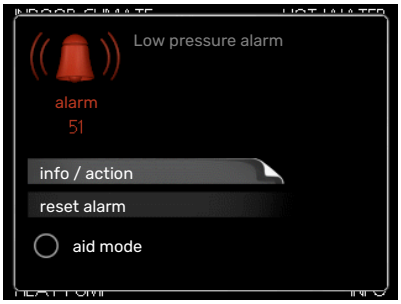
Disturbances in comfort

In most cases, SMO 40 notes a malfunction (a malfunction can lead to disruption in comfort) and indicates this with alarms, and instructions for action, in the display.

Info-menu

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

Manage alarm



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

ALARM

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

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

reset alarm In many cases, it is sufficient to select "reset alarm" for the product to revert to normal operation. If a green light comes on after selecting "reset alarm", the alarm has been remedied. If the red light is still on, and a menu called "alarm" is visible in the display, the problem causing the alarm still remains.

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

Caution

To select aid mode an alarm action must be selected in the menu 5.1.4.

Caution

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

Troubleshooting

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

Basic actions

Start by checking the following items:

- The switch's (SF1) position.
- Group and main fuses of the building.
- Miniature circuit breaker for SMO 40 (FC1).
- The building's earth circuit breaker.
- The installation's residual current device (RCD).
- Correctly set load monitor.

Low hot water temperature or a lack of hot water

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

- Closed or throttled externally mounted filling valve for the hot water.
  - Open the valve.
- Mixing valve (if there is one installed) set too low.
  - Adjust the mixer valve.
- SMO 40 in incorrect operating mode.
  - Enter menu 4.2. If mode "auto" is selected, select a higher value on "stop additional heat" in menu 4.9.2.
  - If mode "manual" is selected, select "addition".
- Large hot water consumption.
  - Wait until the hot water has heated up. Temporarily increased hot water capacity (temporary lux) can be activated in menu 2.1.
- Too low hot water setting.
  - Enter menu 2.2 and select a higher comfort mode.
- Low hot water access with the "Smart Control" function active.
  - If the hot water usage has been low, less hot water than normal will be produced. Restart the product.
- Too low or no operating prioritisation of hot water.

- Enter menu 4.9.1 and increase the time for when hot water is to be prioritised. Note that if the time for hot water is increased, the time for heating production is reduced, which can give lower/uneven room temperatures.

- "Holiday mode" activated in menu 4.7.
  - Enter menu 4.7 and select "Off".

Low room temperature

- Closed thermostats in several rooms.
  - Set the thermostats to max, in as many rooms as possible. Adjust the room temperature via menu 1.1, instead of choking the thermostats.

    See the "Saving tips" section in the User manual for more detailed information about how to best set the thermostats.
- SMO 40 in incorrect operating mode.
  - Enter menu 4.2. If mode "auto" is selected, select a higher value on "stop heating" in menu 4.9.2.
  - If mode "manual" is selected, select "heating". If this is not enough, select "addition".
- Too low set value on the automatic heating control.
  - Enter menu 1.1 "temperature" and adjust the offset heating curve up. If the room temperature is only low in cold weather the curve slope in menu 1.9.1 "heating curve" needs adjusting up.
- Too low or no operating prioritisation of heat.
  - Enter menu 4.9.1 and increase the time for when heating is to be prioritised. Note that if the time for heating is increased the time for hot water production is reduced, which can give smaller amounts of hot water.
- "Holiday mode" activated in menu 4.7.
  - Enter menu 4.7 and select "Off".
- External switch for changing room temperature activated.
  - Check any external switches.
- Air in the climate system.
  - Vent the climate system.
- Closed valves to the climate system.
  - Open the valves.

High room temperature

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

Low system pressure

- Not enough water in the climate system.
  - Fill the climate system with water and check for leaks. In event of repeated filling, contact the installer.

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

- There is no heating or hot water demand, nor cooling demand.
  - SMO 40 does not call on heating, hot water or cooling.
- Compressor blocked due to the temperature conditions.
  - Wait until the temperature is within the product's working range.
- Minimum time between compressor starts has not been reached.
  - Wait for at least 30 minutes and then check if the compressor has started.
- Alarm tripped.
  - Follow the display instructions.

Additional heating only

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

SET THE INSTALLATION TO ADDITIONAL HEAT MODE

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

> **Caution**
>
> When commissioning without NIBE air/water heat pump, the "communication error" alarm may appear in the display.
>
> The alarm is reset if the relevant air/water heat pump is deactivated in menu 5.2.2 ("installed slaves").

Accessories

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

Not all accessories are available on all markets.

DOCKING KIT SOLAR 40

Solar 40 means that SMO 40 (together with VPAS) can be connected to thermal solar heating.

Part no 067 084

DOCKING KIT SOLAR 42

Solar 42 means that SMO 40 (together with VPBS) can be connected to thermal solar heating.

Part no 067 153

IMMERSION HEATER IU

3 kW
Part no. 018 084

6 kW
Part no. 018 088

9 kW
Part no. 018 090

ENERGY MEASUREMENT KIT EMK 300

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

Cu pipe Ø22.

Part no. 067 314

ENERGY MEASUREMENT KIT EMK 500

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

Cu pipe Ø28.

Part no. 067 178

EXTERNAL ELECTRIC ADDITIONAL HEAT ELK

These accessories may need an accessory board AXC 30 (step controlled additional heat).

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

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

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

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

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

EXTRA SHUNT GROUP ECS

This accessory is used when SMO 40 is installed in houses with two or more different heating systems that require different supply temperatures.

ECS 40 (Max 80 m²)
Part no 067 287

ECS 41 (approx. 80-250 m²)
Part no 067 288

EXHAUST AIR MODULE F135

F135 is an exhaust air module specially designed to combine recovery of mechanical exhaust air with an air/water heat pump. Indoor module/control module controls F135.

Part no. 066 075

AUXILIARY RELAY HR 10

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

Part no 067 309

COMMUNICATION MODULE FOR SOLAR ELECTRICITY EME 20

EME 20 is used to enable communication and control between inverters for solar cells from NIBE and SMO 40.

Part no. 057 215

COMMUNICATIONS MODULE MODBUS 40

MODBUS 40 enables SMO 40 to be controlled and monitored using a DUC (computer sub-centre) in the building. Communication is then performed using MODBUS-RTU.

Part no 067 144

COMMUNICATIONS MODULE SMS 40

When there is no internet connection, you can use the accessory SMS 40 to control SMO 40 via SMS.

Part no 067 073

CONNECTION BOX K11

Connection box with thermostat and overheating protection. (When connecting Immersion heater IU)

Part no. 018 893

CHARGE PUMP CPD 11

Charge pump for heat pump

CPD 11-25/65
Part no. 067 321

CPD 11-25/75
Part no. 067 320

MEASUREMENT KIT FOR SOLAR GENERATED ELECTRICITY EME 10

EME 10 is used to optimise the use of solar generated electricity. EME 10 measures the relevant current from the inverter via a current transformer and can work with all inverters.

Part no. 067 541

POOL HEATING POOL 40

POOL 40 is used to enable pool heating with SMO 40.

Part no 067 062

ROOM UNIT RMU 40

The room unit is an accessory with a built-in room sensor, which allows the control and monitoring of SMO 40 to be carried out in a different part of your home to where it is located.

Part no 067 064

ROOM SENSORRTS 40

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

Part no. 067 065

CURRENT SENSOR CMS 10-200

Current sensor with working area 0-200 A.

Part no. 067 596

ACCESSORY CARD AXC 30

An accessory board for active cooling (4-pipe system), extra climate system, hot water comfort or if more than two charge pumps are to be connected to SMO 40. It can also be used for step-controlled additional heat (e.g. external electric boiler), shunt-controlled additional heat (e.g. wood/oil/gas/pellet boiler).

An accessory board is required if for example an HWC pump is to be connected to SMO 40 at the same time that the common alarm indication is activated.

Part no. 067 304

WATER HEATER/ACCUMULATOR TANK

AHPS

Accumulator tank without an immersion heater with a solar coil (copper corrosion protection) and a hot water coil (stainless steel corrosion protection).
Part no. 256 119

AHPH

Accumulator tank without an immersion heater with an integrated hot water coil (stainless steel corrosion protection).
Part no. 256 120

VPA

Water heater with double-jacketed vessel.

VPA 450/300

Corrosion protection:

Copper	Part no. 082 030
Enamel	Part no. 082 032

VPAS

Water heater with double-jacketed vessel and solar coil.

VPAS 300/450

Corrosion protection:

Copper	Part no. 082 026
Enamel	Part no. 082 027

VPB

Water heater without immersion heater with charging coil.

VPB 200

Corrosion protection:

Copper	Part no. 081 068
Enamel	Part no. 081 069
Stainless	Part no. 081 070

VPB 300

Corrosion protection:

Copper	Part no. 081 071
Enamel	Part no. 081 073
Stainless	Part no. 081 072

VPB 500

Corrosion protection:

Copper	Part no. 081 054

VPB 750

Corrosion protection:

Copper	Part no. 081 052

VPB 1000

Corrosion protection:

Copper	Part no. 081 053

HOT WATER CONTROL

VST 05

Reversing valve, cu-pipe Ø22
(Max recommended power, 8 kW)
Part no. 089 982

VST 11

Reversing valve, cu-pipe Ø28
(Max recommended power, 17 kW)
Part no. 089 152

VST 20

Reversing valve, cu-pipe Ø35
(Max recommended power, 40 kW)
Part no 089 388

REVERSING VALVE FOR COOLING

VCC 05

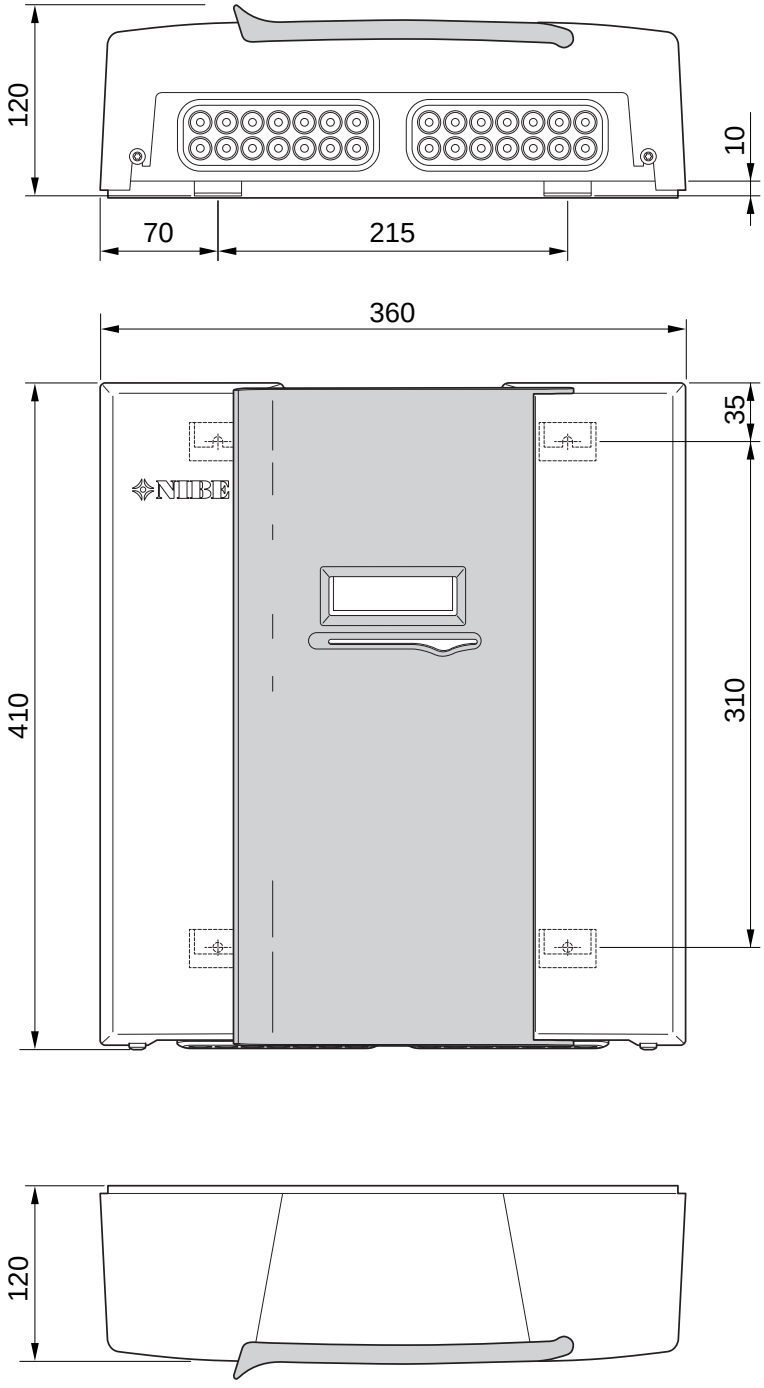
Reversing valve, Cu pipe Ø22 mm
Part no. 067 311

VCC 11

Reversing valve, Cu pipe Ø28 mm
Part no. 067 312

Technical data

Dimensions



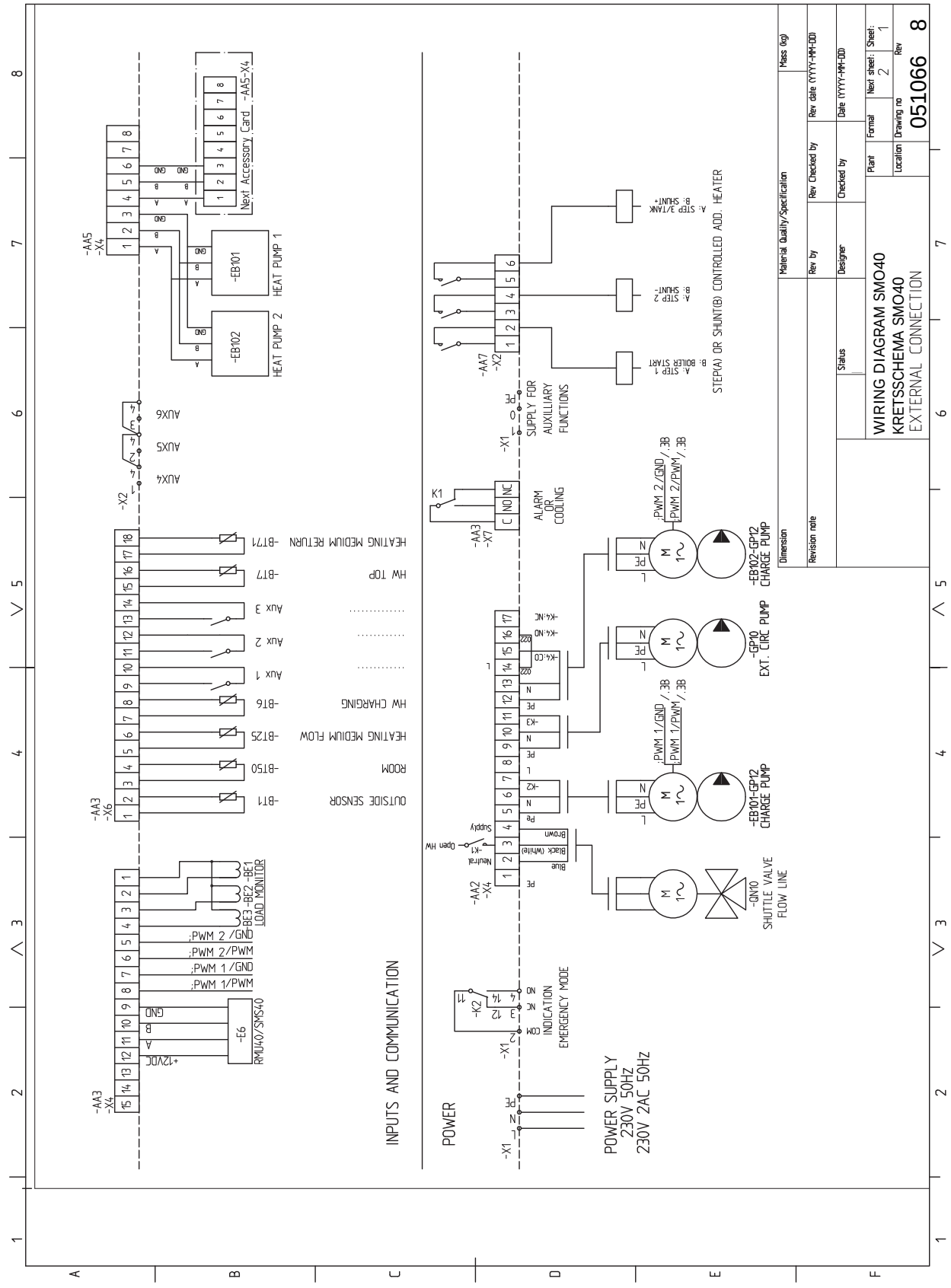
Technical specifications

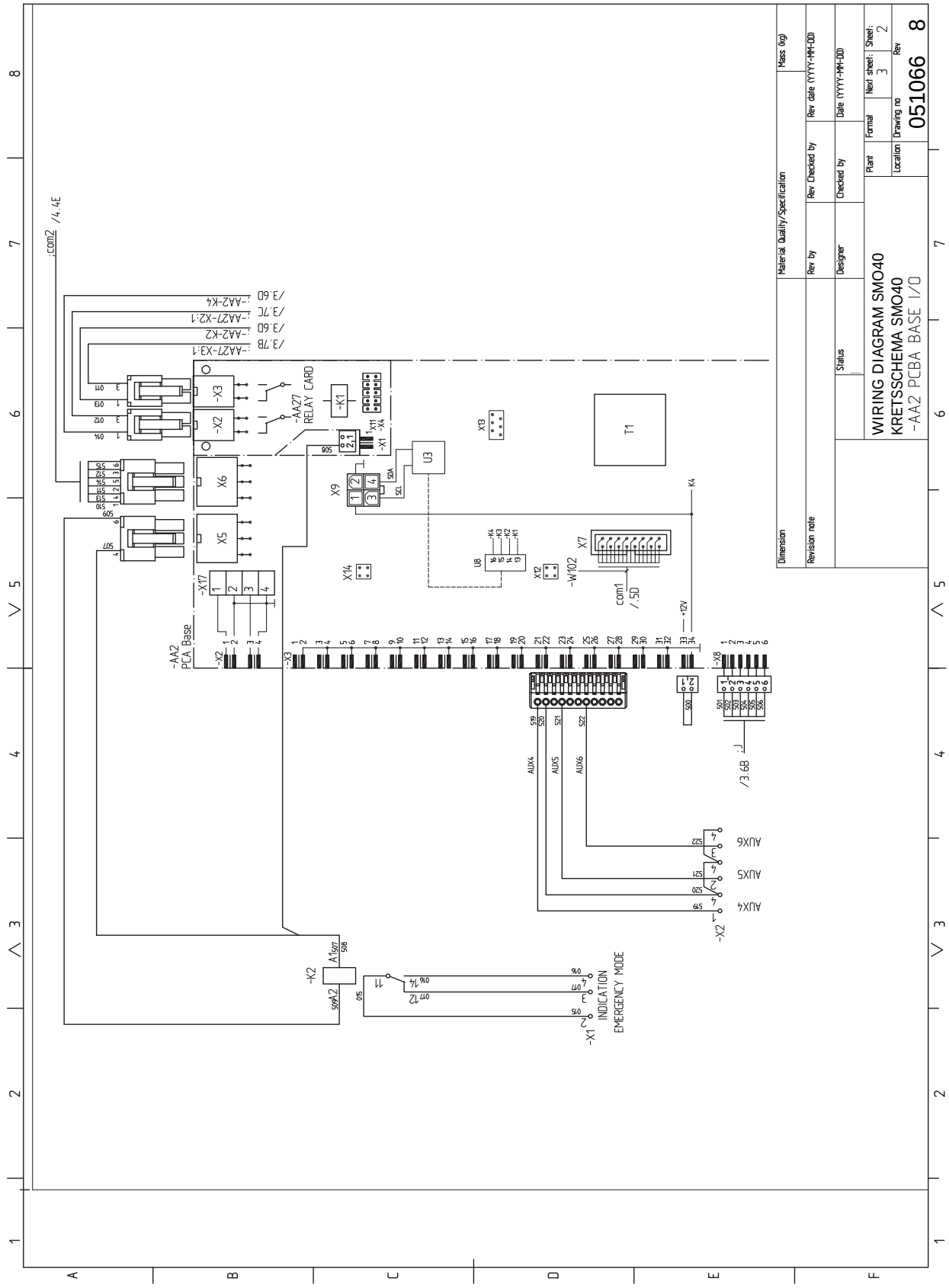
SMO 40		
Electrical data		
Rated voltage		230V~ 50Hz
Enclosure class		IP21
Rated value for impulse voltage	kV	4
Pollution degree		2
Fuse	A	10
Optional connections		
Max number air/water heat pumps		8
Max number of sensors		8
Max number of charge pumps with internal accessory cards		4
Max number of charge pumps with external accessory cards		8
Max number of outputs for additional heat step		3
Miscellaneous		
Operation mode according to EN 60 730-1		Type 1
Area of operation	°C	-25 – 70
Ambient temperature	°C	5 – 35
Program cycles, hours		1, 24
Program cycles, days		1, 2, 5, 7
Resolution, program	min.	1
Dimensions and weight		
Width	mm	360
Depth	mm	120
Height	mm	410
Weight	kg	5.15
Part no.		
Part No.		067 225

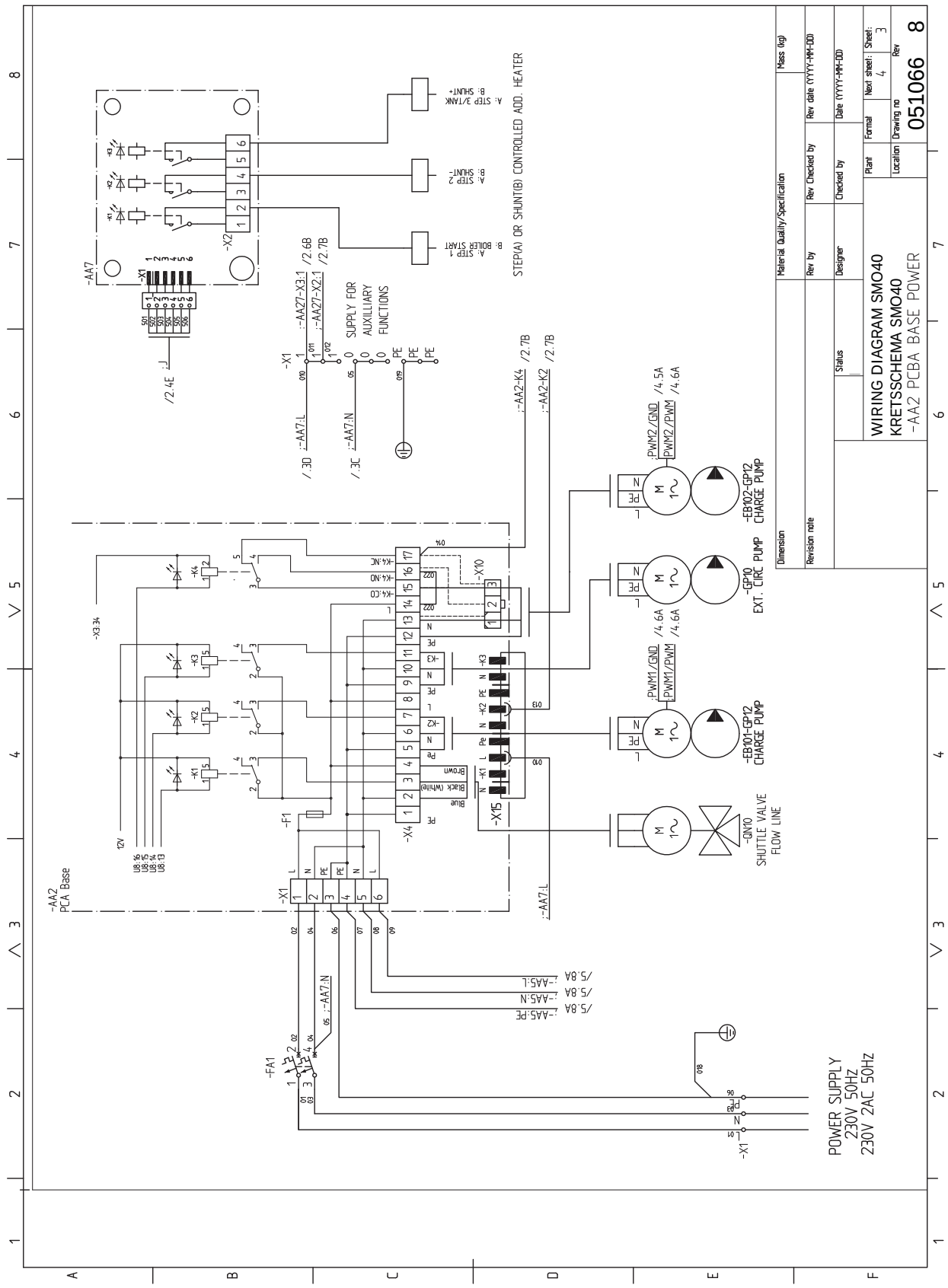
Energy labelling

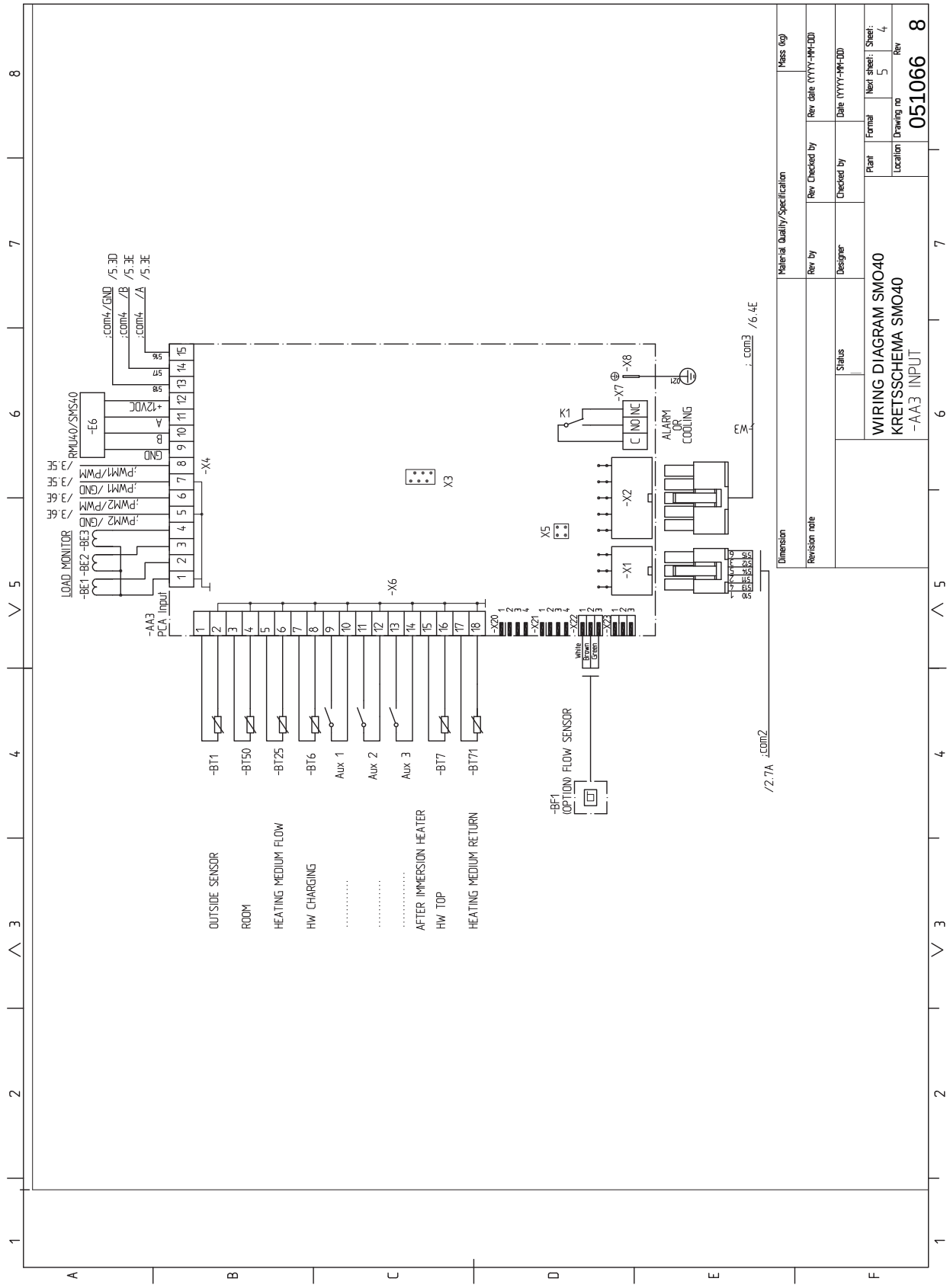
Supplier		NIBE	
Model		**SMO 40 + F2300**	**SMO 40 + S2125 / F2120 / NIBE SPLIT HBS / F2040 / F2050**
Controller, class		VII	VI
Controller, contribution to efficiency	%	3.5	4.0

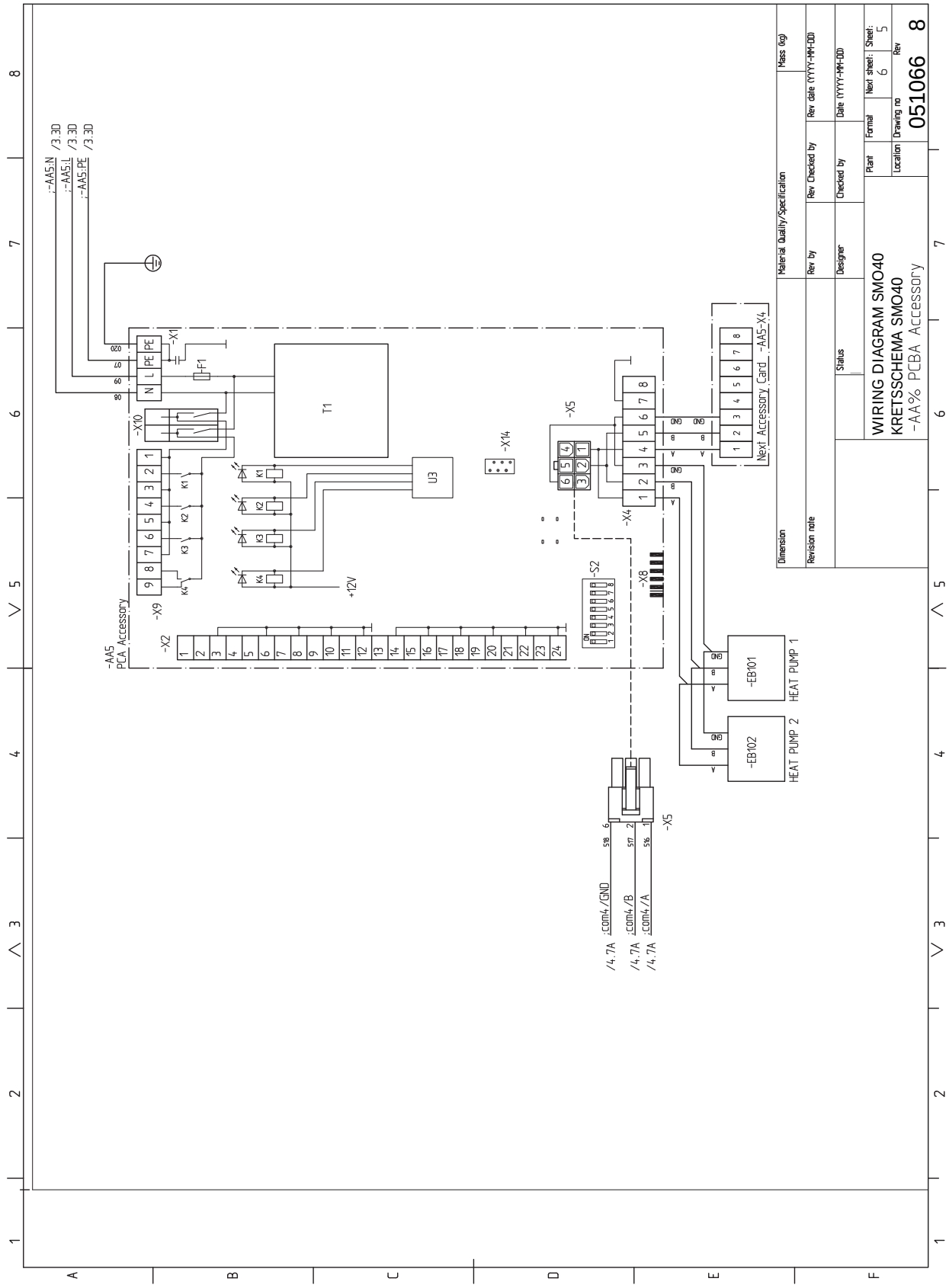
Electrical circuit diagram

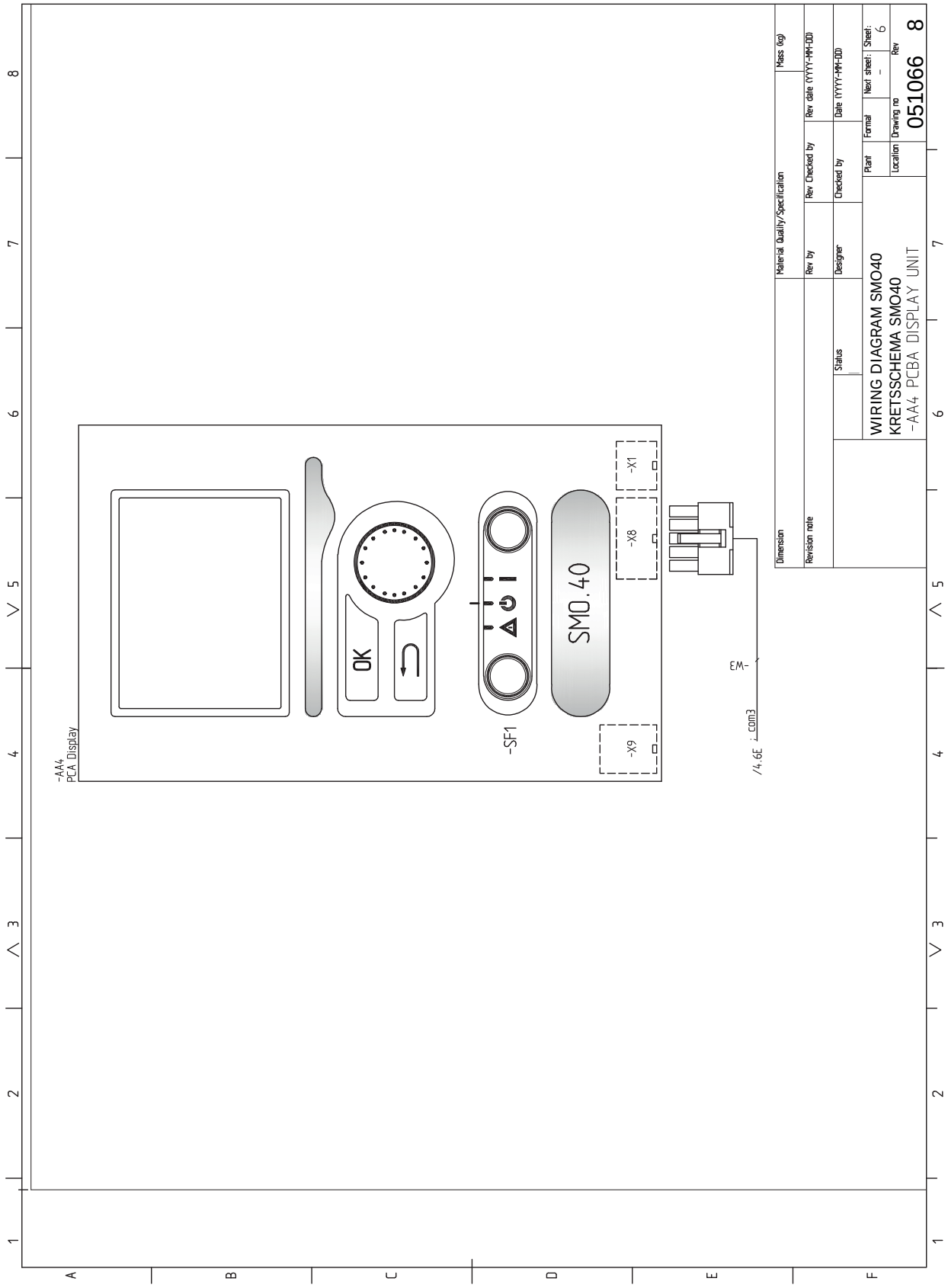



WIRING DIAGRAM SMO40
KRETSSCHEMA SMO40
-AA2 PCBA BASE I/O
051066 8
-AA2 PCA Base
-AA27 RELAY CARD
INDICATION EMERGENCY MODE
AUX4
AUX5
AUX6
-X1
-X2
-X3
-X4
-X5
-X6
-X7
-X8
-X9
-X11
-X12
-X13
-X14
-X17
-K1
-K2
T1
U3
U8
-W102
com1
+12V


WIRING DIAGRAM SMO40
KRETSSCHEMA SMO40
-AA2 PCBA BASE POWER
051066 8
POWER SUPPLY
230V 50Hz
230V 2AC 50Hz
STEP(A) OR SHUNT(B) CONTROLLED ADD. HEATER
SUPPLY FOR AUXILIARY FUNCTIONS
-AA2 PCA Base
-EB102-GP12 CHARGE PUMP
-GP10 EXT. CIRC. PUMP
-EB101-GP12 CHARGE PUMP
-QN10 SHUTTLE VALVE FLOW LINE


WIRING DIAGRAM SMO40
KRETSSCHEMA SMO40
-AA3 INPUT
051066 8
-AA3
PCA Input
-X4
-X6
-X1
-X2
X3
X5
-X7
-X8
K1
C NO NC
ALARM
OR
COOLING
-E6
RMUA0/SMS40
GND
+12VDC
.com4/GND /5.3D
.com4 /B /5.3E
.com4 /A /5.3E
LOAD MONITOR
-BE1 -BE2 -BE3
.PWM2 /GND /3.6F
.PWM2 /PWM /3.6F
.PWM1 /GND /3.5F
.PWM1 /PWM /3.5F
-BT1 OUTSIDE SENSOR
-BT50 ROOM
-BT25 HEATING MEDIUM FLOW
-BT6 HW CHARGING
Aux 1 .....
Aux 2 .....
Aux 3 .....
-BT7 AFTER IMMERSION HEATER
-BT71 HW TOP
HEATING MEDIUM RETURN
-BF1
(OPTION) FLOW SENSOR
White
Brown
Green
.com2 /2.7A
.com3 /6.4E
-W3
Material Quality/Specification
Mass (kg)
Dimension
Revision note
Rev by
Rev Checked by
Rev date (YYYY-MM-DD)
Designer
Checked by
Date (YYYY-MM-DD)
Status
Plant
Format
Next sheet: 5
Sheet: 4
Location
Drawing no
Rev


WIRING DIAGRAM SMO40
KRETSSCHEMA SMO40
-AA% PCBA Accessory
051066 8
-AA5 PCA Accessory
Next Accessory Card -AA5-X4
T1
U3
-X1
-X2
-X4
-X5
-X8
-X9
-X10
-X14
-S2
-F1
-EB101
-EB102
HEAT PUMP 1
HEAT PUMP 2
+12V
-AA5:N /3.3D
-AA5:L /3.3D
-AA5:PE /3.3D
/4.7A :com4/GND
/4.7A :com4/B
/4.7A :com4/A
Material Quality/Specification
Mass (kg)
Dimension
Revision note
Rev by
Rev Checked by
Rev date (YYYY-MM-DD)
Designer
Checked by
Date (YYYY-MM-DD)
Status
Plant
Format
Next sheet: 6
Sheet: 5
Location
Drawing no
Rev


-AA4
PCA Display
OK
-SF1
SM0.40
-X1
-X8
-X9
/4.6E
-W3
com3
Material Quality/Specification
Mass (kg)
Dimension
Revision note
Rev by
Designer
Rev Checked by
Checked by
Rev date (YYYY-MM-DD)
Date (YYYY-MM-DD)
Status
Plant
Format
Next sheet:
Sheet:
6
Location
Drawing no
051066 8
Rev
WIRING DIAGRAM SMO40
KRETSSCHEMA SMO40
-AA4 PCBA DISPLAY UNIT

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IHB EN 2316-1 731357

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