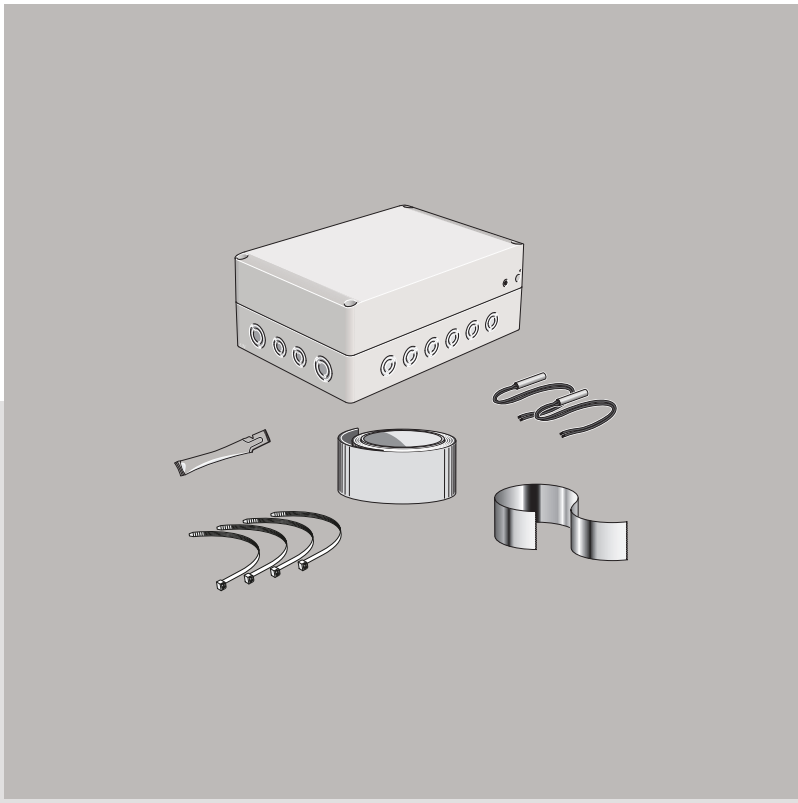
IHB 2113-3
231464

AXC 30

Installer manual

Accessory card



S-series

F-series

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S

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.

This is an original manual. It may not be translated without the approval of NIBE.

Rights to make any design or technical modifications are reserved.

SYMBOLS

NOTE

This symbol indicates danger to person or machine .

Caution

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

TIP

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

MARKING

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

IP21 Classification of enclosure of electro-technical equipment.

Danger to person or machine.

Read the Installer Manual.

General

This accessory is used to enable connection and control of the following accessory functions. One AXC 30 is required for each function.

In the control module, there are connections to enable the connection and control of one of the following accessory functions. One, or more, additional accessory functions require one AXC 30 each.

- shunt-controlled additional heat
- step-controlled additional heat
- extra climate system
- hot water comfort
- active cooling (4-pipe system)
- pool heating
- connection of several heat pumps.

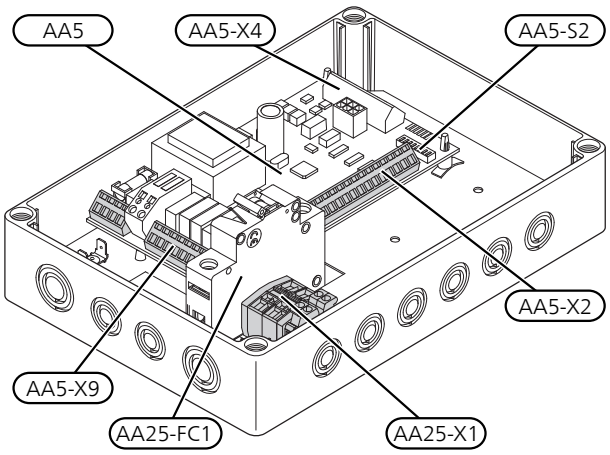
COMPATIBLE PRODUCTS

- SMO S40

CONTENTS

4 x	Cable ties
2 x	Heating pipe paste
1 x	Insulation tape
1 x	AXC module
2 x	Aluminium tape
2 x	Temperature sensor

COMPONENT LOCATION, AXC MODULE (AA25)



ELECTRICAL COMPONENTS

AA5	Accessory card	
	AA5-S2	DIP switch
	AA5-X2	Terminal block, inputs
	AA5-X4	Terminal block, communication
	AA5-X9	Terminal block, outputs
AA25	AXC module	
	AA25-FC1	Miniature circuit-breaker
	AA25-X1	Terminal block, power supply

Designations according to standard EN 81346-2.

S

Common electrical connection

NOTE

All electrical connections must be carried out by an authorised electrician.

Electrical installation and wiring must be carried out in accordance with the stipulations in force.

The main product must be disconnected from the power supply when installing AXC 30.

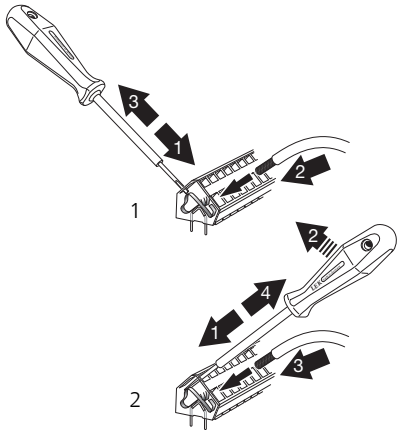
S

- 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.
- AXC 30 must be installed via an isolator switch. The cable area has to be dimensioned based on the fuse rating used.
- Mark the relevant electrical cabinet with a warning about external voltage, in those cases where a component in the cabinet has a separate supply.
- AXC 30 restarts after a power failure.

Electrical circuit diagrams are at the end of the chapter for each connection option.

CABLE LOCK

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

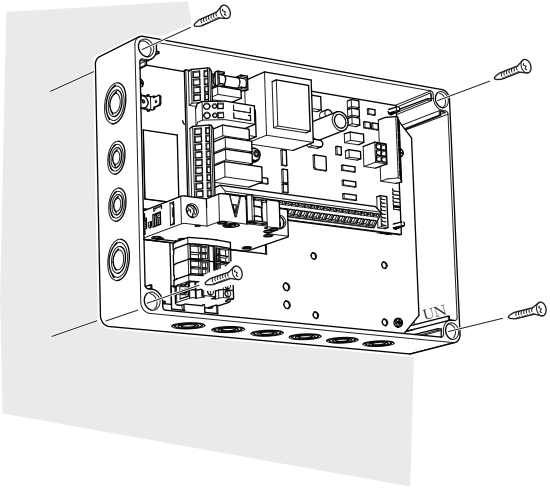


MOUNTING

The AXC module (AA25) is a separate, electric control module and must be mounted on a wall.

Caution

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



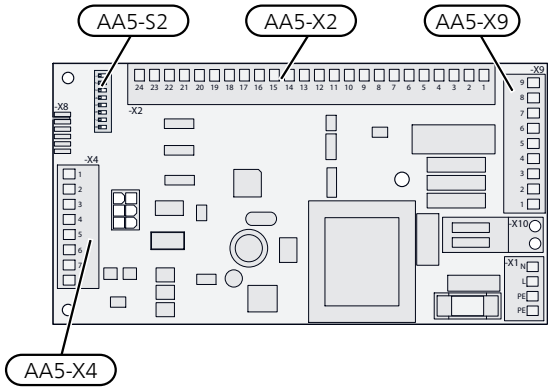
Use all mounting points and mount the module upright, flat against the wall.

Leave at least 100 mm of free space around the module to allow access and make cable routing easier during installation and servicing.

NOTE

The installation must be carried out in such a way that IP21 is satisfied.

OVERVIEW ACCESSORY BOARD (AA5)

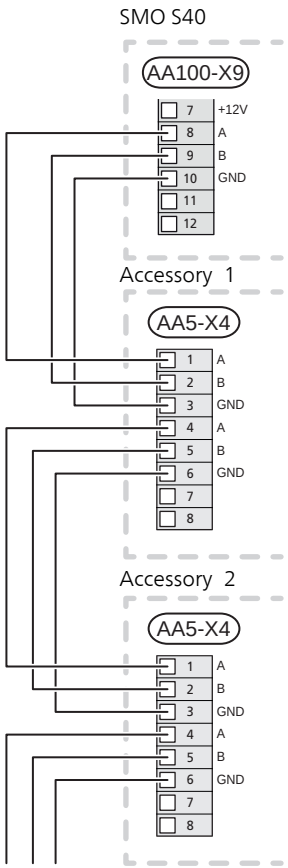


CONNECTING COMMUNICATION

AXC 30 contains an accessory board (AA5) that connects directly to the control module on its joint board (terminal block AA100-X9).

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

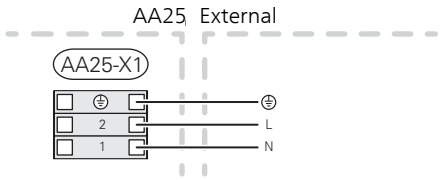
Because there can be different connections for accessories with accessory board (AA5), you should always read the instructions in the manual for the accessory that is to be installed.



POWER CONNECTION

Connect the power supply cable to terminal block AA25-X1 as illustrated.

Tightening torque for earth cable: 0.5–0.6 Nm.



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Shunt controlled additional heat

GENERAL

This function enables an external additional heater, e.g. an electric boiler, wood boiler, pellet boiler, oil boiler, gas boiler or district heating, to assist with the heating.

The indoor module controls a shunt valve (EM1-QN11) and a circulation pump (EM1-GP10) via the accessory board in AXC 30. If the heat pump cannot maintain the correct supply temperature, at the external supply temperature sensor, (EM1-BT25), the additional heat starts. When the boiler temperature on the boiler sensor (EM1-BT52) exceeds the set value, the indoor module transmits a signal to the shunt (EM1-QN11) to open from the additional heat. The shunt (EM1-QN11) is regulated so the true supply temperature corresponds with the indoor module's theoretical calculated set point value. When the heating demand drops sufficiently, so that additional heat is no longer required, the shunt (EM1-QN11) closes completely.

Factory-set minimum operating time for the boiler is 12 hours.

The function smart energy source can be selected if you want to prioritise automatically between heat pump operation and additional heat versus the best price or environmental impact.

S

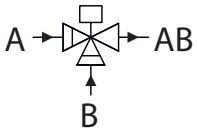
PIPE CONNECTIONS

The external circulation pump (EM1-GP10) is placed on the supply line to the climate system after the temperature sensor (AA35-BT25).

SHUNT VALVE

The shunt valve (EM1-QN11) must be placed on the supply line to the climate system after the heat pump according to the outline diagram.

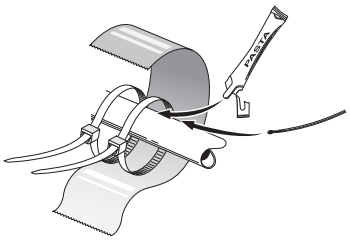
- Connect the supply line from the heat pump to the external heat source via the T-pipe to port B on the shunt valve (closes on reduce signal).



- Connect the supply line to the climate system from the shunt valve to the common port AB (always open)
- Connect the supply line from the external additional heat to the shunt valve to port A (opens on increase signal).

TEMPERATURE SENSOR

- Install the boiler sensor (EM1-BT52) in a suitable location in the external additional heat.
- The external supply temperature sensor (AA35-BT25), connected in the indoor module's control module, must be installed on the supply line to the climate system after the shunt valve (EM1-QN11).



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

NOTE

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

SYSTEM DIAGRAM

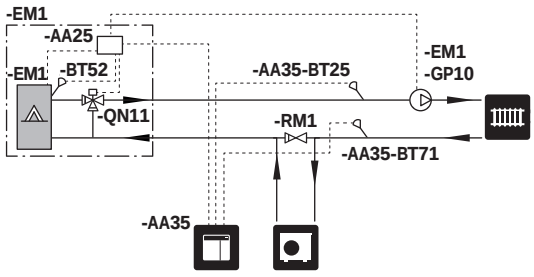
Caution

This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

EM1	**Mixing valve controlled additional heat, boiler**
AA25	AXC module
BT52	Boiler sensor
GP10	External heating medium pump
QN11	Mixing valve, addition
AA35	**SMO S40**
BT25	External supply temperature sensor
BT71	External return line sensor
Miscellaneous	
RM1	Non-return valve

OUTLINE DIAGRAM WITH SHUNT-CONTROLLED ADDITIONAL HEAT



ELECTRICAL CONNECTION

NOTE

Read section "Common electrical connection" for instructions regarding electrical connection.

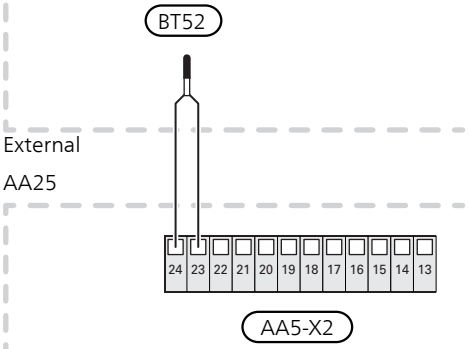
CONNECTION OF SENSORS AND EXTERNAL BLOCKING

Boiler sensor (EM1-BT52)

Connect the sensor to AA5-X2:23-24.

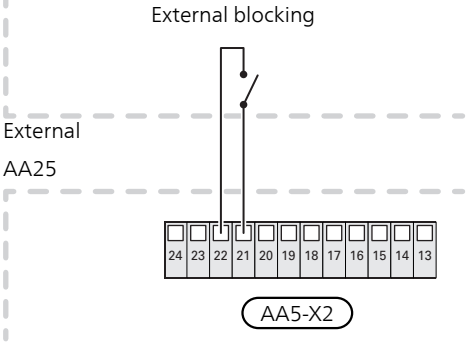
Caution

Sensor cable splicing must fulfil IP54.



External blocking (optional)

A contact (NO) can be connected to AA5-X2:21-22 to block the accessory. When the contact closes, the accessory is blocked.



External supply temperature sensor (AA35-BT25)

Sensor (BT25) must be connected in the main product.

See the Installer Manual for the main product.

External return line sensor (AA35-BT71)

Sensor (BT71) must be connected in the main product.

See the Installer Manual for the main product.

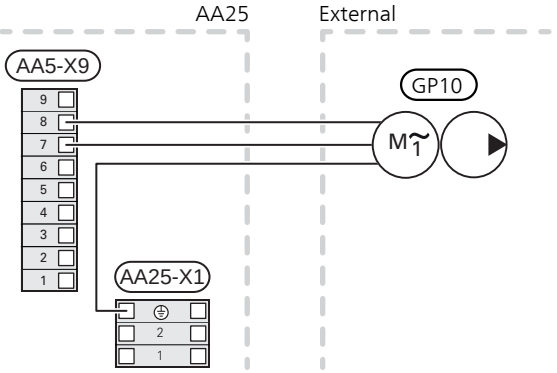
S

Caution

The relay outputs on the accessory board can have a max load of 2A (230V) in total.

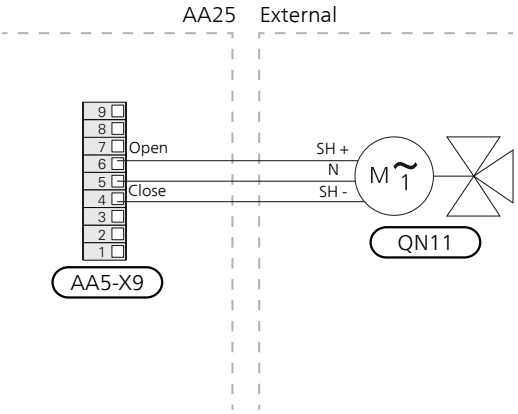
CONNECTION OF THE CIRCULATION PUMP (EM1-GP10)

Connect the external heating medium pump (GP10) to AA5-X9:7 (N), AA5-X9:8 (230 V) and X1:PE.



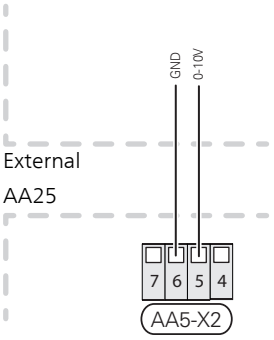
CONNECTION OF THE SHUNT VALVE MOTOR (EM1-QN11)

Connect the shunt motor (QN11) to AA5-X9:6 (230V, open), AA5-X9:5 (N) and AA5-X9:4 (230V, close).



Connection of 0-10 V control of shunt motor (EM1-QN11)

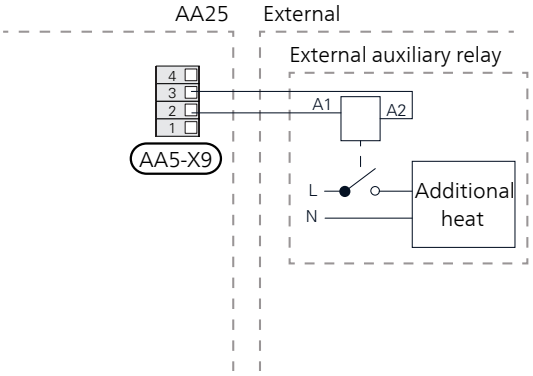
Connect a 2-core cable to AA5-X2:5 (0-10 V) and AA5-X2:6 (GND).



At 0 V the shunt is closed and at 10 V the shunt is open.

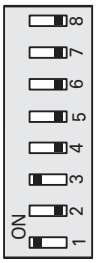
CONNECTION OF THE AUXILIARY RELAY FOR ADDITIONAL HEATING

Connect the auxiliary relay for switching the additional heat on and off to AA5-X9:2 (230V) and AA5-X9:3 (N).



DIP SWITCH

The DIP switch (S2) on the accessory board (AA5) must be set as follows.



PROGRAM SETTINGS

Program setting of AXC 30 can be performed via the start guide or directly in the menu system.

Start guide

The start guide appears at first start-up after the heat pump installation, but can also be found in menu 7.7.

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 7.2.1 - Add/remove accessories

Here, you state which accessories are installed for the compatible product.

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

Menu 7.2.3 - Shunt-contr. add. heat(AXC)

Prioritised add. heat

Setting range: on/off

Setting range: 0 – 2000 DM

Minimum operating time

Setting range: 0 – 48 h

Lowest temperature

Setting range: 5 – 90 °C

Shunt amplification

Setting range: 0.1 –10.0

Shunt waiting time

Setting range: 10 – 300 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 add. 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.

See the accessory installation instructions for function description.

Menu 7.5.3 - Forced control

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

NOTE

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

Menu 4.6 - Smart Energy Source

Smart Energy Source

Alternative: on/off

Control method

Alternatives: Price per kWh / CO2

If Smart Energy Source™ is activated AXC 30 prioritises how / to what extent each docked energy source will be used. Here you can select whether the system will use the energy source that is cheapest at the time or the one that is most carbon dioxide neutral at the time.

Caution

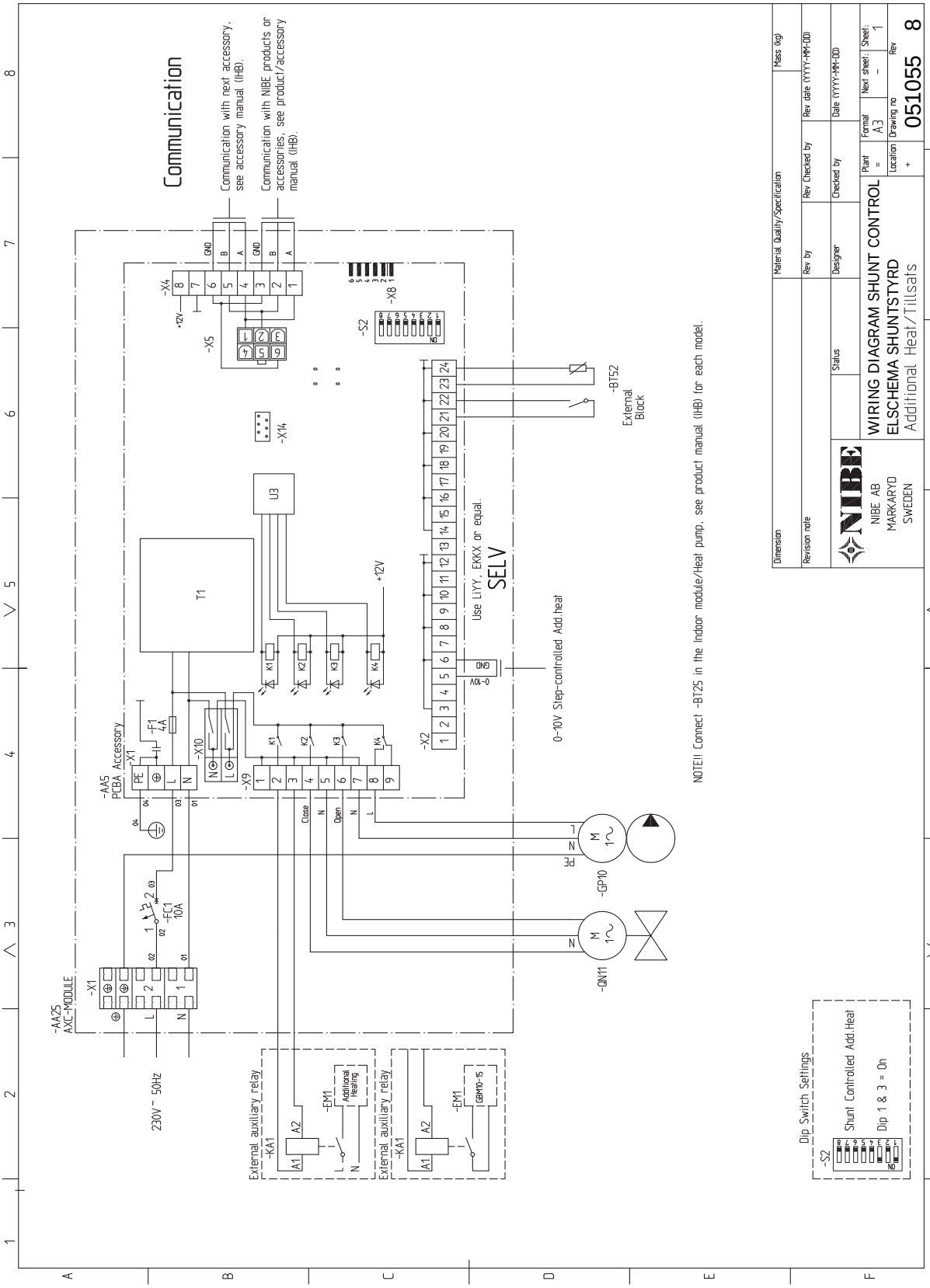
Your choices in this menu affect menu 4.7 - Energy price.

Caution

Also see the Installer Manual for the main product.

S

ELECTRICAL CIRCUIT DIAGRAM



Step controlled additional heat

GENERAL

This function enables an external additional heater, e.g. an electric boiler, to aid with heating.

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

The flow through the additional heat is ensured by the external circulation pump (EB1-GP10).

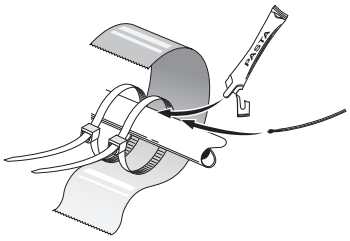
PIPE CONNECTIONS

The external circulation pump (EM1-GP10) is placed on the supply line to the climate system after the temperature sensor (AA35-BT25).

If the climate system's flow exceeds the maximum recommended flow for the electric boiler, a bypass must be installed so that only a partial flow passes through the electric boiler.

TEMPERATURE SENSOR

- The external supply temperature sensor (AA35-BT25), connected in the indoor module's control module, must be installed on the supply line to the climate system after the additional heat.



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

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

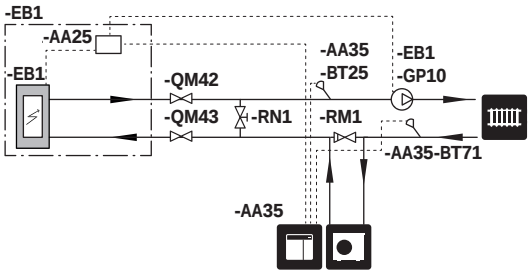
SYSTEM DIAGRAM

> ☞ *Caution*
>
> This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

EB1	**Step controlled additional heat**
AA25	AXC module
GP10	External heating medium pump
AA35	**SMO S40**
BT25	External supply temperature sensor
BT71	External return line sensor
Miscellaneous	
QM42-43	Shut-off valve
RN1	Trim valve
RM1	Non-return valve

OUTLINE DIAGRAM WITH STEP-CONTROLLED ADDITIONAL HEAT



S

ELECTRICAL CONNECTION

NOTE

Read section "Common electrical connection" for instructions regarding electrical connection.

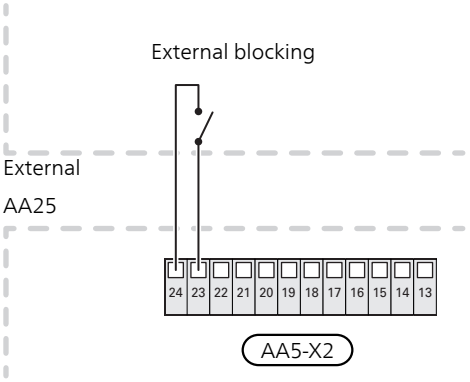
CONNECTION OF SENSORS AND EXTERNAL BLOCKING

External blocking (optional)

A contact (NO) can be connected to AA5-X2:23-24 to block the accessory. When the contact closes, the accessory is blocked.

Caution

The relay outputs on the accessory board can have a max load of 2 A (230 V) in total.



External supply temperature sensor (AA35-BT25)

Sensor (BT25) must be connected in the main product.

See the Installer Manual for the main product.

External return line sensor (AA35-BT71)

Sensor (BT71) must be connected in the main product.

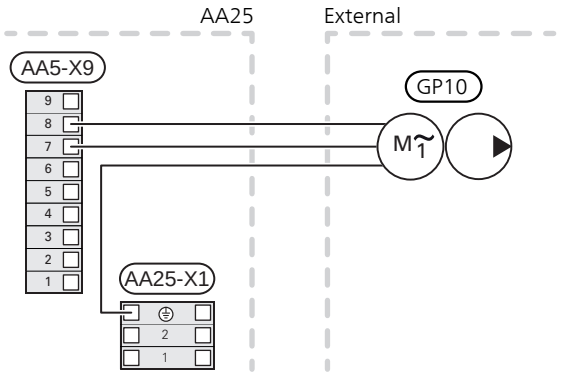
See the Installer Manual for the main product.

Caution

The relay outputs on the accessory board can have a max load of 2A (230V) in total.

CONNECTING HEATING MEDIUM PUMP (EB1-GP10)

Connect the external heating medium pump (GP10) to AA5-X9:7 (N), AA5-X9:8 (230 V) and X1:PE.



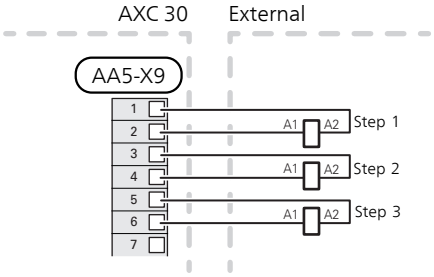
CONNECTION OF RELAYS

Connecting additional step

Connect step 1 to AA5-X9:1 and 2.

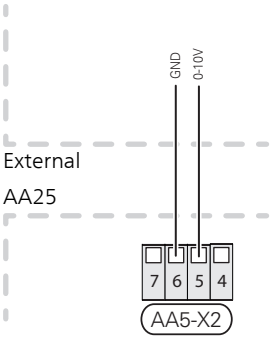
Connect step 2 to AA5-X9:3 and 4.

Connect step 3 to AA5-X9:5 and 6.



Connection of 0-10 V control of additional heat step

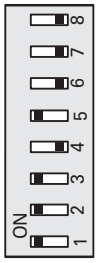
Connect a 2-core cable to AA5-X2:5 (0-10 V) and AA5-X2:6 (GND).



0 V = 0 steps and 10 V = max. number of set steps.

DIP SWITCH

The DIP switch (S2) on the accessory board (AA5) must be set as follows.



PROGRAM SETTINGS

Program setting of AXC 30 can be performed via the start guide or directly in the menu system.

START GUIDE

The start guide appears upon first start-up after the heat pump installation, but is also found in menu 7.7.

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 7.2.1 - Add/remove accessories

Here, you state which accessories are installed for the compatible product.

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

Menu 7.2.6 - Step-control add. heat(AXC)

Relative DM start additional heat

Setting range: 0 – 2000 DM

Diff. between add heat steps

Setting range: 0 – 1,000 DM

Max step

Setting range
(binary stepping deactivated): 0 – 3

Setting range
(binary stepping activated): 0 – 7

Binary stepping

Setting range: on/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 7.5.3 - Forced control

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

NOTE

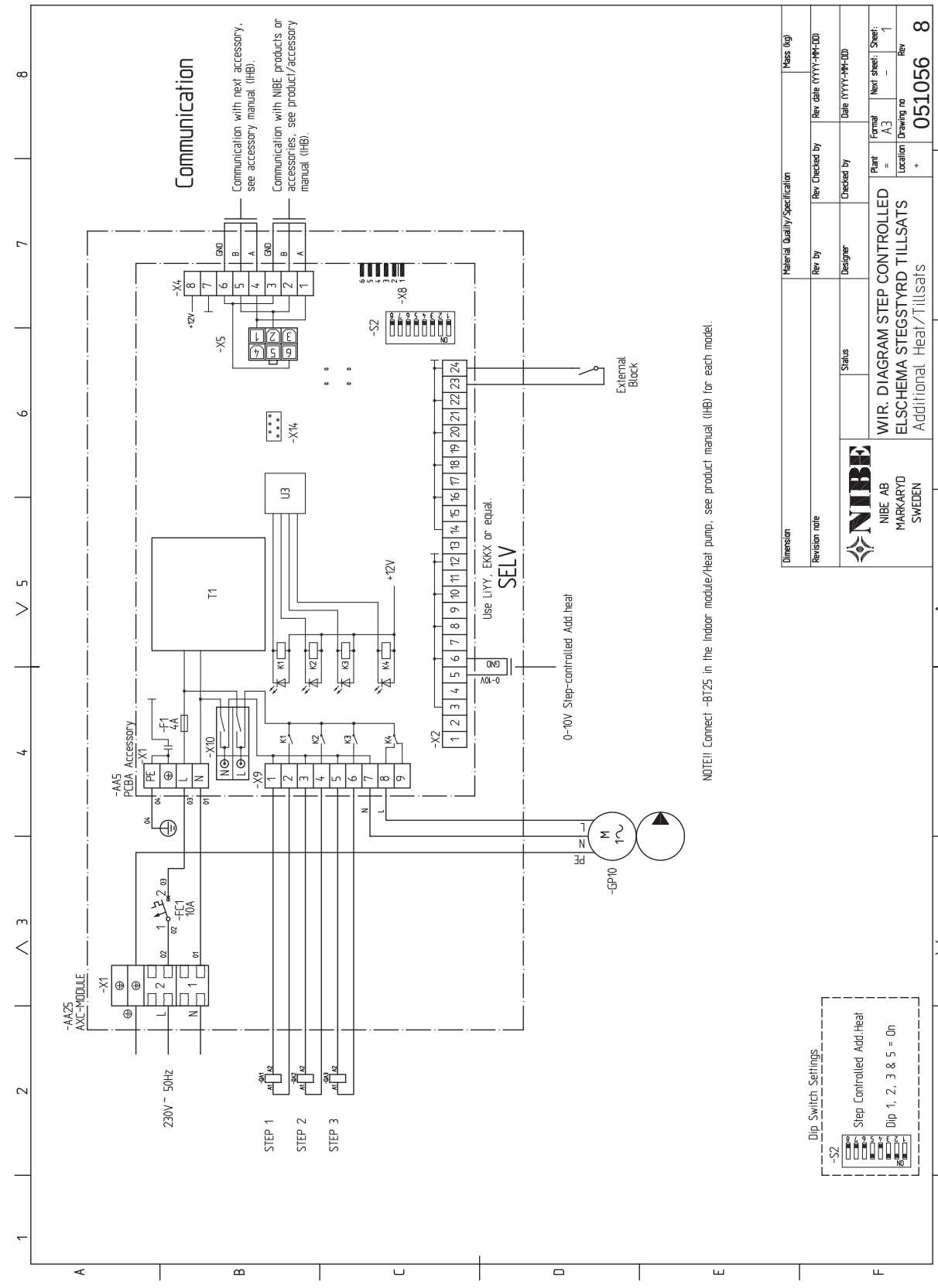
Forced control is only intended to be used for troubleshooting purposes. Using the function in any other way may cause damage to the components in your climate system.

Caution

Also see the Installer Manual for the main product.

S

ELECTRICAL CIRCUIT DIAGRAM



Extra climate system

GENERAL

This function is used when SMO S40 is going to control more than one climate system. It is possible to connect up to eight different climate systems (heating and/or cooling systems) that require different supply temperatures, for example where the house has both radiator systems and underfloor heating systems.

Caution

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

Check the max floor temperature with your floor supplier.

Caution

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

PIPE CONNECTIONS

GENERAL

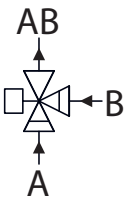
When connecting extra climate systems, they must be connected so that they have a lower working temperature than the climate system 1.

CIRCULATION PUMP

The extra circulation pump (EP21-GP10) is positioned in the extra climate system according to the outline diagram.

SHUNT VALVE

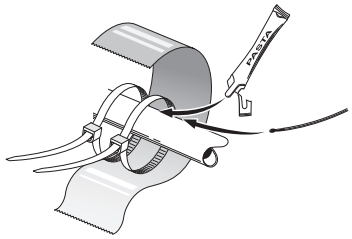
The shunt valve (EP21-QN25) is located on the supply line after the heat pump/indoor module, before the first radiator in the climate system 1. The return line from the extra climate system is connected to the shunt valve and to the return line from the climate system 1, see image and outline diagram.



- Connect the supply line to the climate system from the heat pump to port A on the shunt valve (opens on increase signal)
- Connect the return line from the climate system to port B on the shunt valve via the T-pipe (closes on reduce signal).
- Connect the supply line to the climate system to the common port AB on the shunt valve (always open).

TEMPERATURE SENSOR

- The supply line sensor (EP21-BT2) is installed on the pipe between the circulation pump (EP21-GP10) and shunt valve (EP21-QN25).
- The return line sensor (EP21-BT3) is installed on the pipe from the extra climate system.



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

NOTE

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

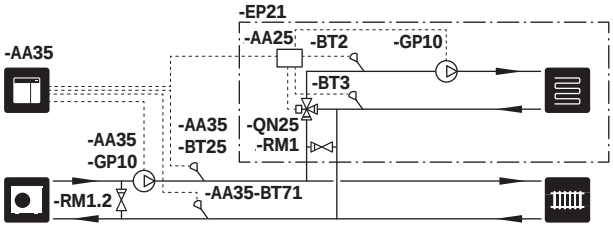
SYSTEM DIAGRAM

Caution

This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

EP21	**Climate system**
AA25	AXC module
BT2	Flow temperature sensor, extra climate system
BT3	Return line sensor, extra climate system
GP10	Circulation pump, extra climate system
QN25	Shunt valve
RM1	Non-return valve
AA35	**SMO S40**
BT25	External supply temperature sensor
BT71	External return line sensor
GP10	External heating medium pump
RM1.2	Non-return valve



S

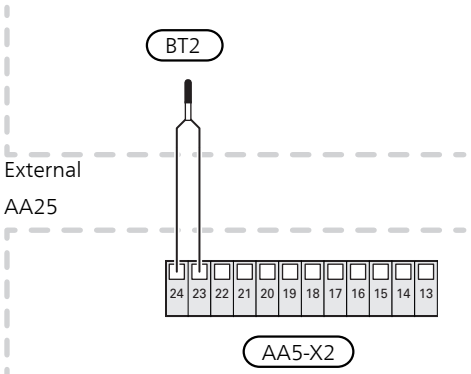
ELECTRICAL CONNECTION

> *NOTE*
>
> Read section "Common electrical connection" for instructions regarding electrical connection.

CONNECTION OF SENSORS AND EXTERNAL ADJUSTMENT

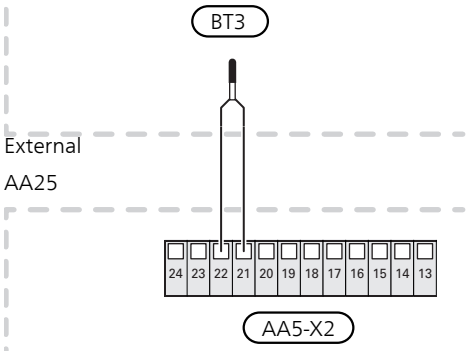
Supply temperature sensor, extra climate system (EP21-BT2)

Connect the supply temperature sensor to AA5-X2:23-24.



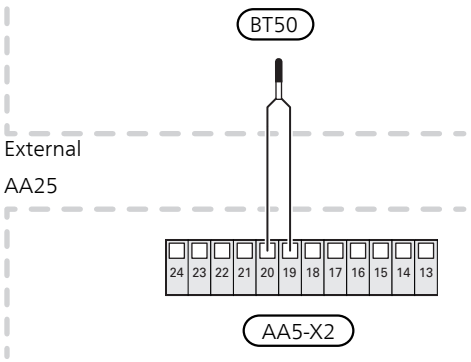
Return line sensor, extra climate system (EP21-BT3)

Connect the return line sensor to AA5-X2:21-22.



Room sensor, extra climate system (EP21-BT50) (optional)

Connect the room sensor to AA5-X2:19-20.



External supply temperature sensor (AA35-BT25)

Sensor (BT25) must be connected in the main product.

See the Installer Manual for the main product.

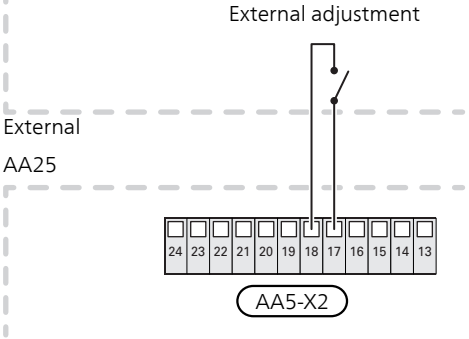
External return line sensor (AA35-BT71)

Sensor (BT71) must be connected in the main product.

See the Installer Manual for the main product.

External adjustment (optional)

A potential-free switch can be connected to AA5-X2:17-18 for external adjustment of the climate system.

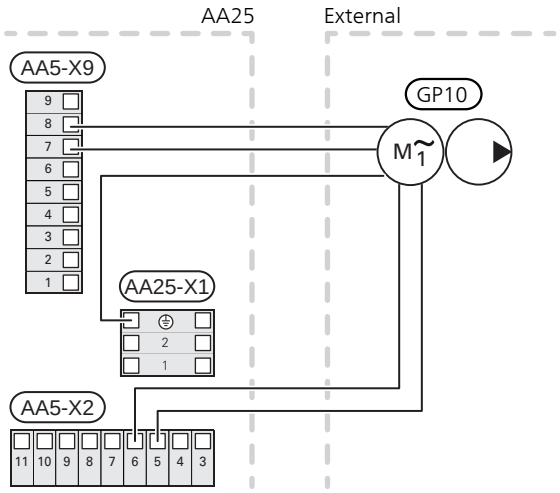


> *Caution*
>
> The relay outputs on the accessory board can have a max load of 2A (230V) in total.

CONNECTION OF THE CIRCULATION PUMP (EP21-GP10)

Connect the external heating medium pump (GP10) to AA5-X9:7 (N), AA5-X9:8 (230 V) and X1:PE.

Connect 0-10V control signal for heating medium pump (GP10) to AA5-X2:5(0-10V) and AA5-X2:6(GND)



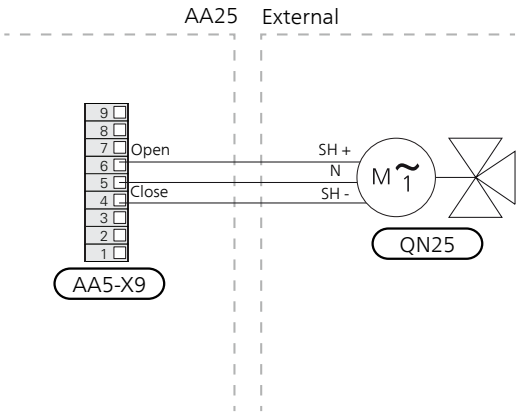
Pump speed EP21-GP10	
100 %	approx. 0 V DC
50 %	approx. 5 V DC
0 %	approx. 10 V DC

CONNECTING EXTERNAL HEATING MEDIUM PUMP (AA35-GP10)

To connect the external heating medium pump (GP10, see the relevant product's Installer Manual.

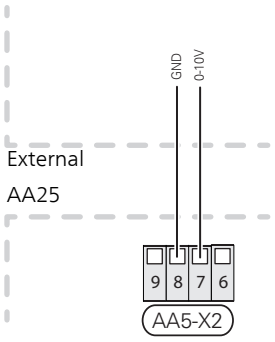
CONNECTION OF THE SHUNT VALVE MOTOR (EP21-QN25)

Connect the shunt motor (QN25) to AA5-X9:6 (230V, open), AA5-X9:5 (N) and AA5-X9:4 (230V, close).



Connection of 0-10 V control of shunt motor (EP21-QN25)

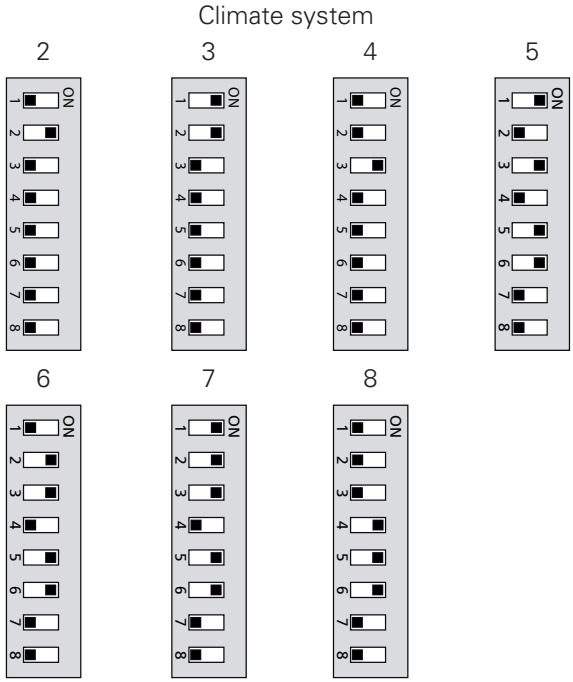
Connect a 2-core cable to AA5-X2:7 (0-10 V) and AA5-X2:8 (GND).



At 0 V the shunt is closed and at 10 V the shunt is open.

DIP SWITCH

Connections in the control module are used to enable connection and control of the climate system 2. One or more additional climate systems require one AXC 30 each. The DIP switch (S2) on the accessory board (AA5) must be set as follows, with each climate system having a unique setting.



S

PROGRAM SETTINGS

Activating AXC 30 can be performed via the start guide or directly in the menu system.

START GUIDE

The start guide appears upon first start-up after heat pump installation, but is also found in menu 7.7.

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 7.2.1 - Add/remove accessories

Here, you state which accessories are installed for the compatible product.

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

Menu 1.1 - Temperature

You make temperature settings for your installation here.

Menu 1.3 - Room sensor settings

Here, you make your settings for room sensors and zones. The room sensors are grouped by zone.

Here, you select the zone to which a sensor will belong. It is possible to connect multiple room sensors to each zone. Each room sensor can be given a unique name.

The control of heating, cooling, humidity and ventilation are activated by ticking each option. Which options are shown depends on which type of sensor is installed. If control is not activated, the sensor will be the displaying sensor.

Caution

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

Menu 1.30.7 - Own curve

Own curve, heat

Caution

Curve 0 must be selected for own curve to apply.

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

Supply temp

Setting range: 5 – 80 °C

Own curve, cooling

Caution

Curve 0 must be selected for own curve to apply.

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

Supply temp

Setting range: -5 – 40 °C

Menu 7.2.4 - Extra climate system (ECS)

Use in heating mode

Setting range: on/off

Use in cooling mode

Setting range: on/off

Shunt amplification

Setting range: 0.1 – 10.0

Shunt waiting time

Setting range: 10 – 300 s

Contr. pump GP10

Setting range: on/off

Control signal

Setting range: PWM / 0-10V*

Manual speed

Setting range: 0 – 100%

Factory setting: 70%

*Factory setting

The shunt amplification and shunt waiting time for the different extra climate systems that are installed are also set here.

Menu 7.5.3 - Forced control

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

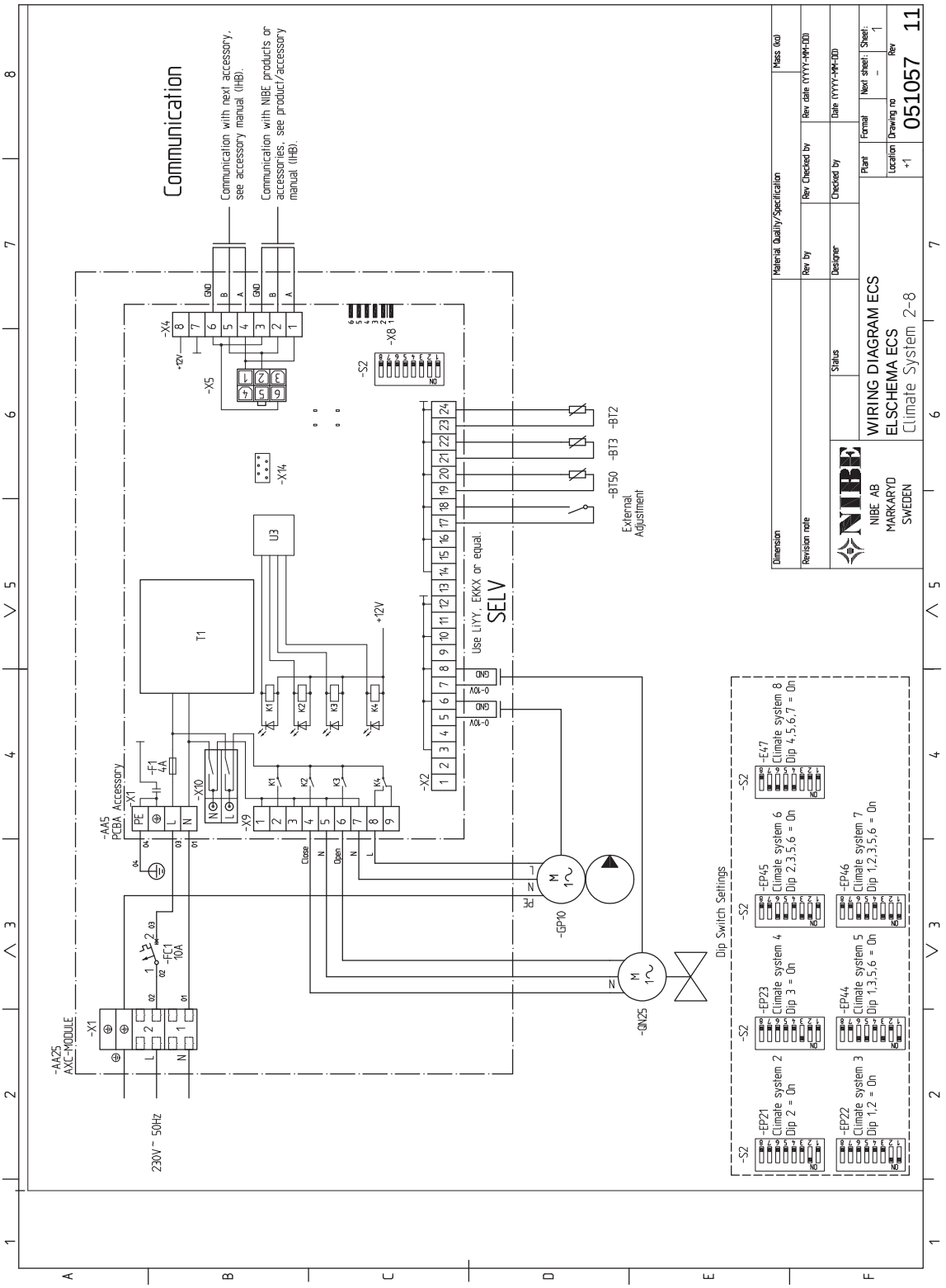
NOTE

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

Caution

Also see the Installer Manual for the main product.

ELECTRICAL CIRCUIT DIAGRAM



S

Hot water comfort

GENERAL

This function provides the opportunity to control additional heat in the tank, mixing valve and hot water circulation.

ADDITIONAL HEAT IN TANK

If an immersion heater is installed in the tank, it can be permitted to produce hot water at the same time as the heat pump prioritises heating or cooling.

MIXING VALVE

A temperature sensor reads the temperature of the outgoing hot water to the domestic hot water and adjusts the mixing valve from the water heater until the set temperature has been reached.

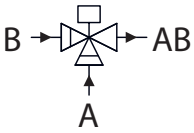
HOT WATER CIRCULATION (HWC)

One pump can be controlled for the circulation of the hot water during selectable periods.

PIPE CONNECTIONS

MIXING VALVE

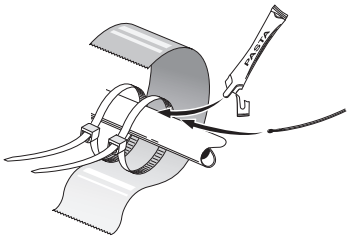
The mixer valve (QZ1-FQ3) must be placed on the outgoing hot water line from the water heater according to the outline diagram.



- Connect the incoming cold water via the T-pipe to port B on the mixer valve (closes at signal).
- Connect the mixed water to the domestic hot water taps from the mixer valve to the common port AB (always open).
- Connect the outgoing hot water from the water heater to the mixer valve to port A (opens on signal)

TEMPERATURE SENSOR

- Temperature sensor, outgoing hot water, (QZ1-BT70) is installed as close to the mixing valve (QZ1-FQ3) as possible.



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

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

S

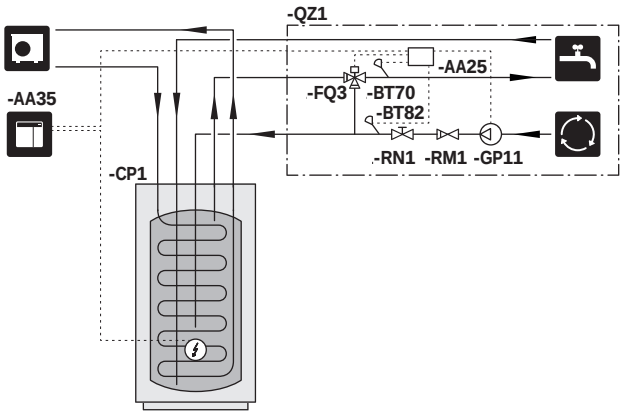
SYSTEM DIAGRAM

EXPLANATION

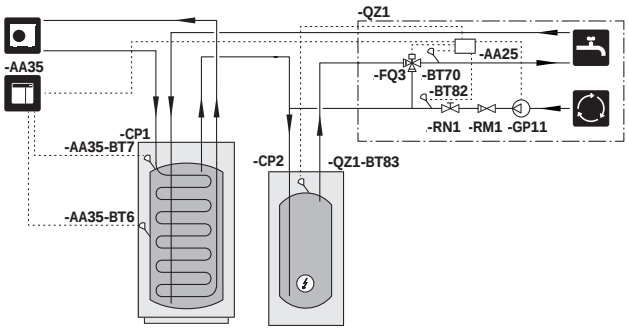
> *Caution*
>
> This is an outline diagram. Actual installations must be planned according to applicable standards.

QZ1	**Hot water comfort**
AA25	AXC module
GP11	Hot water circulation pump
FQ3	Mixer valve, hot water
RN1	Trim valve
RM1	Non-return valve
BT70	Flow line sensor
BT82	Return line sensor, hot water
BT83	Temperature sensor, hot water heater
CP1	**Water heater**
CP2	**Additional water heater**
AA35	**SMO S40**
BT6	Temperature sensor, hot water
BT7	Temperature sensor, hot water top

OUTLINE DIAGRAM WITH ADDITIONAL HEAT IN THE WATER HEATER, HWC AND ELECTRONIC MIXING VALVE



OUTLINE DIAGRAM WITH ADDITIONAL WATER HEATER, HWC AND ELECTRONIC MIXING VALVE



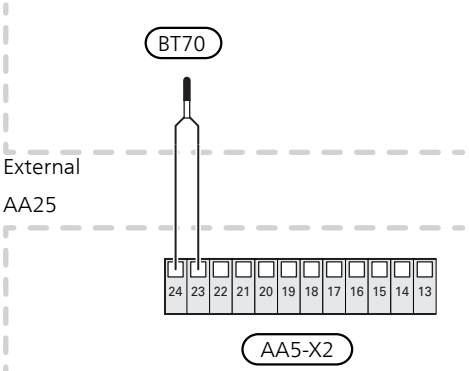
ELECTRICAL CONNECTION

> *NOTE*
>
> Read section "Common electrical connection" for instructions regarding electrical connection.

CONNECTION OF SENSORS AND EXTERNAL BLOCKING

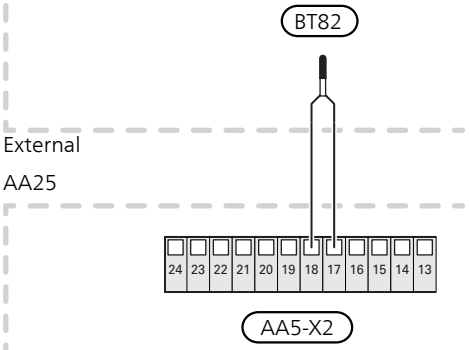
Hot water sensor, supply line (QZ1-BT70)

Connect the hot water sensor to AA5-X2:23-24.



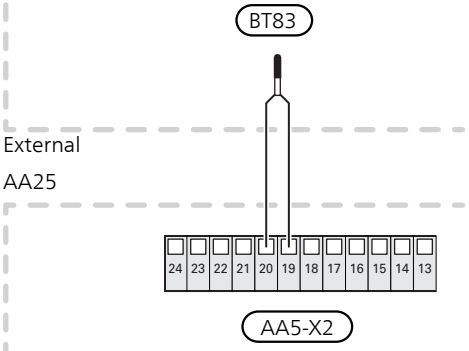
Temperature sensor, hot water comfort, return line (QZ1-BT82)

Connect the temperature sensor to AA5-X2:17-18.



Temperature sensor, hot water heater (QZ1-BT83)

Connect the temperature sensor to AA5-X2:19-20.

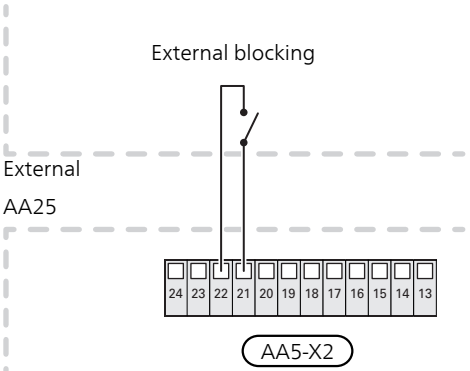


S

S

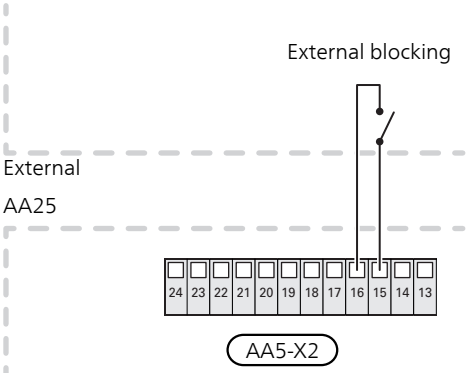
External blocking

A contact (NO) can be connected to AA5-X2:21-22 to block the accessory. When the contact closes, the accessory is blocked.



External blocking, hot water circulation pump (QZ1-GP11)

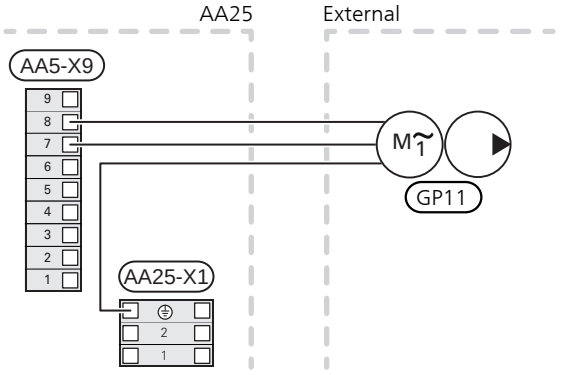
A contact (NO) can be connected to AA5-X2:15-16 to block the hot water circulation pump. When the contact closes, the hot water circulation pump is blocked.



> ***Caution***
>
> The relay outputs on the accessory board can have a max load of 2A (230V) in total.

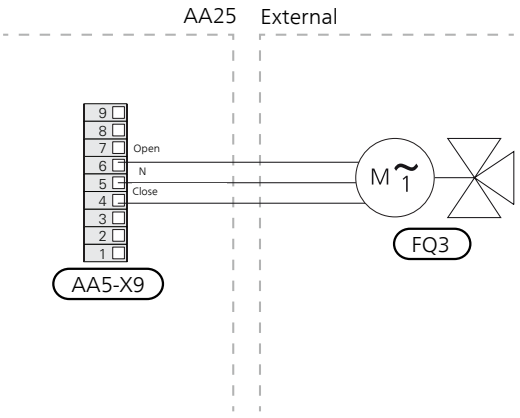
CONNECTION OF THE HOT WATER CIRCULATION PUMP (QZ1-GP11)

Connect the circulation pump (GP11) to AA5-X9:8 (230V), AA5-X9:7 (N) and X1:.



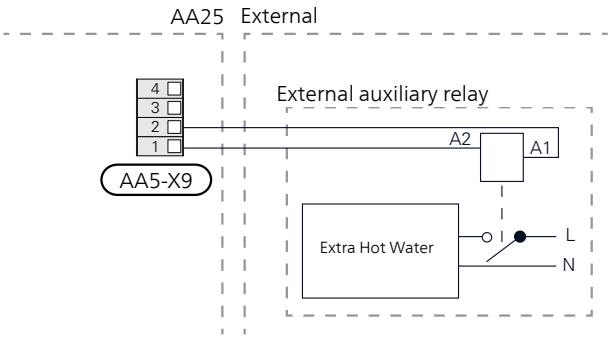
CONNECTION OF THE MIXER VALVE (QZ1-FQ3)

Connect the mixing valve motor (FQ3) to AA5-X9:6 (230V, open), AA5-X9:5 (N) and AA5-X9:4 (230V, close).



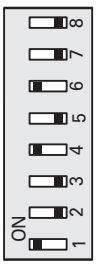
CONNECTION OF AUXILIARY RELAY FOR ADDITIONAL HEAT IN TANK

Connect the auxiliary relay for switching the additional heat on and off to AA5-X9:1 (N) and AA5-X9:2 (230V).



DIP SWITCH

The DIP switch (S2) on the accessory board (AA5) must be set as follows.



PROGRAM SETTINGS

Program setting of AXC 30 can be performed via the start guide or directly in the menu system.

START GUIDE

The start guide appears at first start-up after the heat pump installation, but can also be found in menu 7.7.

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 7.2.1 - Add/remove accessories

Here, you state which accessories are installed for the compatible product.

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

Menu 2.5 - Hot water circulation

Operating time

Setting range: 1 – 60 min

Downtime

Setting range: 0 – 60 min

Period

Active days

Setting range: Monday – Sunday

Start time

Setting range: 00:00 – 23:59

Stop time

Setting range: 00:00 – 23:59

Set hot water circulation for up to five periods per day here. During the set periods, the hot water circulation pump will run according to the settings above.

"Operating time" decide how long the hot water circulation pump must run per operating instance.

"Downtime" decide how long the hot water circulation pump must be stationary between operating instances.

"Period" Here, you set the period of time during which the hot water circulation pump will run, by selecting *Active days*, *Start time* and *Stop time*.

> ⚠ *NOTE*
>
> Hot water circulation is activated in menu 7.4 "Selectable in/outputs" or 7.2.8 "Hot water comfort".

Menu 7.2.8 - Hot water comfort (AXC)

Activating immersion heater.

Setting range: on/off

Activ. imm heater in heating oper

Setting range: on/off

Activating mixing valve

Setting range: on/off

Outgoing hot water

Setting range: 40 - 65 °C

Shunt amplification

Setting range: 0.1 – 10.0

Shunt waiting time

Setting range: 10 – 300 s

Make settings for the hot water comfort here.

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

Activ. imm heater in heating oper: 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 mixing valve: Activated if mixer valve is installed and it is to be controlled from AXC 30. 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 7.5.3 - Forced control

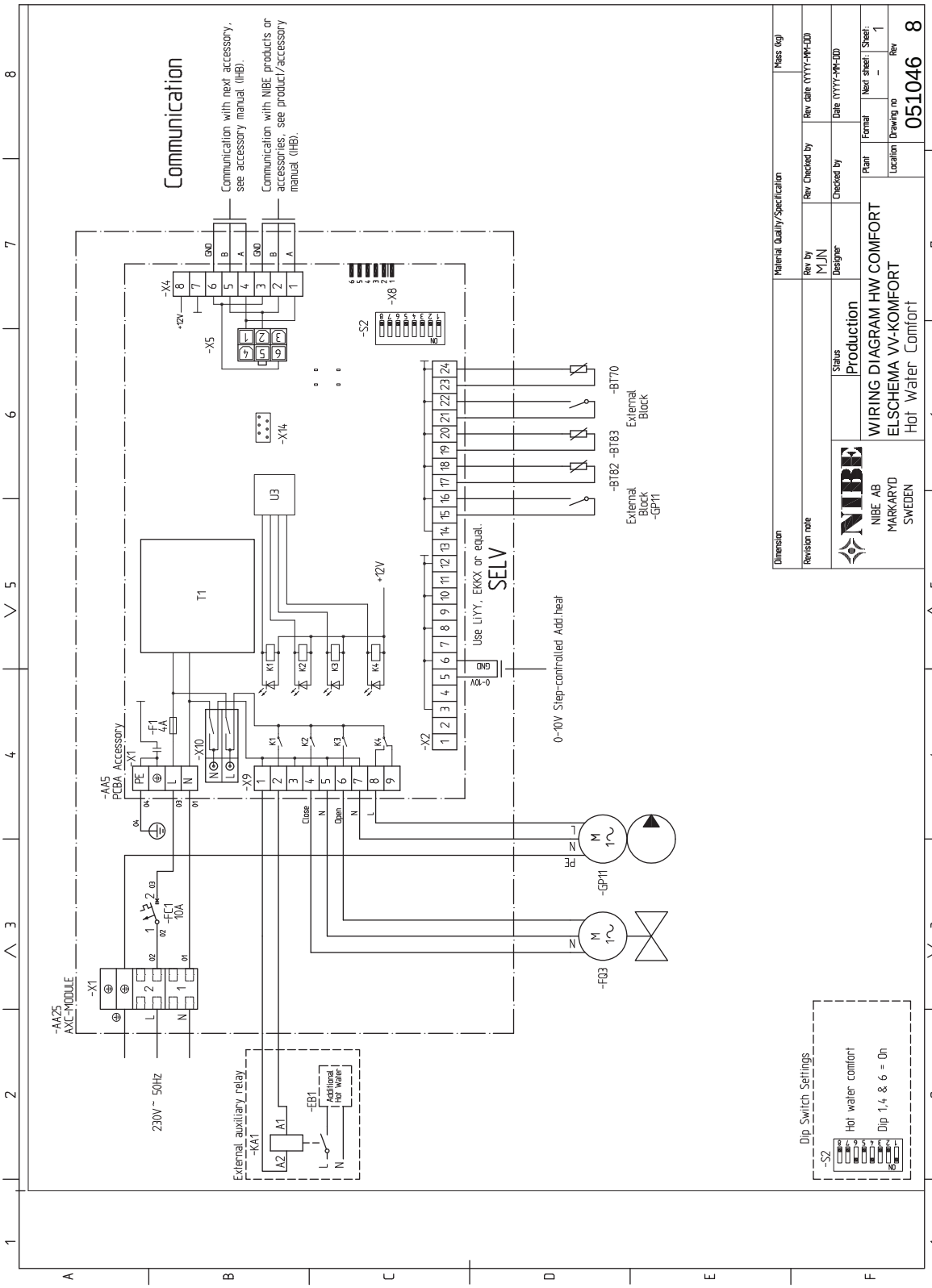
Here you can force control the various components in the installation. The most important safety functions remain active however.

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

> ☞ *Caution*
>
> Also see the Installer Manual for the main product.

S

ELECTRICAL CIRCUIT DIAGRAM



Active cooling in 4-pipe system

GENERAL

This function makes it possible to control the production of cooling.

The cooling system is supplied with cooling from the heat pump using a circulation pump (AA35-GP12)

For the installation to work, the cooling system must flow freely at all times, for example using a volume vessel (UKV) for cooling.

Operating mode cooling is activated by the temperature on the outdoor temperature sensor (AA35-BT1) and any room sensor (AA35-BT50), room unit or separate room sensor for cooling (AA35-BT74) (if two different rooms are to be cooled or heated at the same time, for example).

When cooling is required, the cooling reversing valve (EQ1-QN12) and the circulation pump (EQ1-GP10) are activated.

Cooling production is regulated by the cooling sensor (EQ1-BT64) and a cooling set point value that is determined by the selected cooling curve.

As an accessory, a cooling reversing valve is required, e.g. VCC 22/VCC 28.

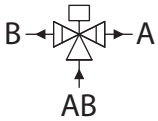
PIPE CONNECTIONS

GENERAL

Pipes and other cold surfaces must be insulated with diffusion-proof material to prevent condensation. Where the cooling demand is high, fan convectors with drip trays and drain connection are needed.

REVERSING VALVE, COOLING/HEATING

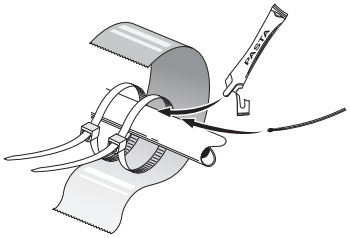
The reversing valve (EQ1-QN12) is located in the system on the supply line from the heat pump.



- Connect the supply line to the climate systems from the heat pump to the common port AB on the reversing valve (always open).
- Connect the supply line to the climate system for cooling to port A on the reversing valve.
- Connect the supply line to the climate system for heating to port B on the reversing valve.

TEMPERATURE SENSOR

Temperature sensor (EQ1-BT64) is mounted on the supply line to the cooling system at the T-pipe connection to the volume vessel (CP10.2).



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

NOTE

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

S

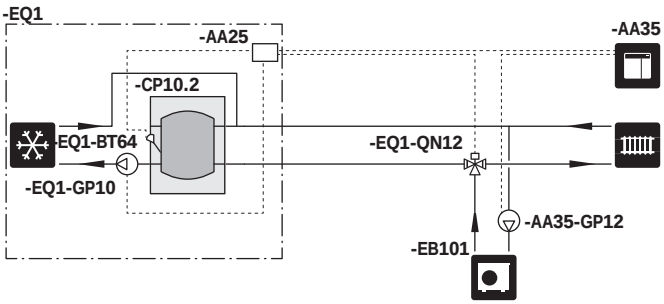
SYSTEM DIAGRAM

Caution

This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

EQ1	**Active cooling.**
AA25	AXC module
BT64	Temperature sensor, flow line cooling
CP10.2	UKV
GP10	External heating medium pump
QN12	Reversing valve, heating/cooling
EB101	**Heat pump**
AA35	**SMO S40**
GP12	Charge pump



ELECTRICAL CONNECTION

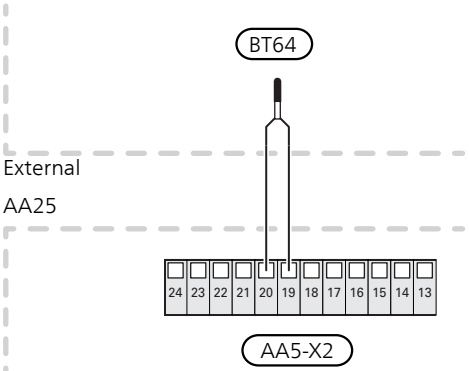
NOTE

Read section "Common electrical connection" for instructions regarding electrical connection.

CONNECTION OF SENSORS AND EXTERNAL BLOCKING

Temperature sensor, supply line cooling (EQ1-BT64)

Connect the sensor to AA5-X2:19-20.



Temperature sensor, cooling/heating sensor, (AA35-BT74)

An extra temperature sensor (room sensor for cooling) is connected to SMO S40 allow to better determination of when it is time to switch between heating and cooling operation. The settings are made in menu 7.1.10.2

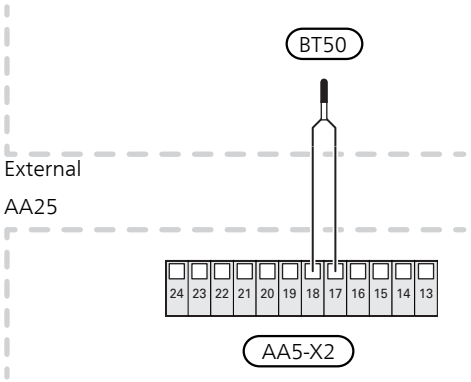
Connect the temperature sensor to one of the AUX inputs in SMO S40, see the Installer Manual for the correct connection. The appropriate AUX input is selected in menu 7.4

Place the temperature sensor in a neutral position in the room where the set temperature is required. It is important that the sensor is not obstructed from measuring the correct room temperature by being located, for example, in a recess, between shelves, behind a curtain, above or close to a heat source, in a draft from an external door or in direct sunlight. Closed radiator thermostats can also cause problems.

Room sensor (EQ1-BT50).

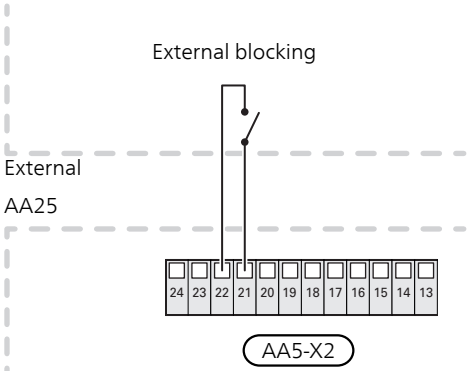
A room sensor can be connected as shown, and it can also control the room temperature in cooling/heating operation.

Connect the room sensor to AA5-X2:17-18.



External blocking (optional)

A contact (NO) can be connected to AA5-X2:21-22 to allow blocking of the cooling operation. When the contact closes, cooling operation is blocked.

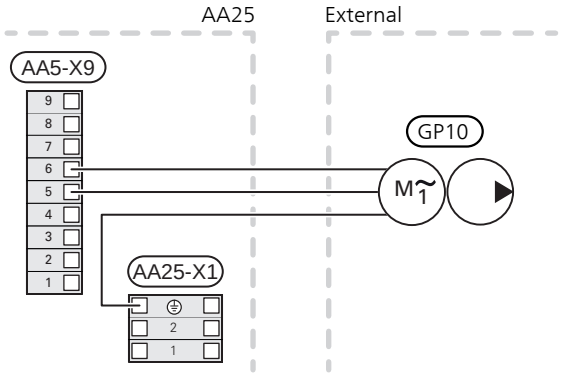


Caution

The relay outputs on the accessory board can have a max load of 2A (230V) in total.

CONNECTION OF THE COOLING CIRCULATION PUMP (EQ1-GP10)

Connect the circulation pump (GP10) to AA5-X9:6 (230V), AA5-X9:5 (N) and X1:3 (PE)

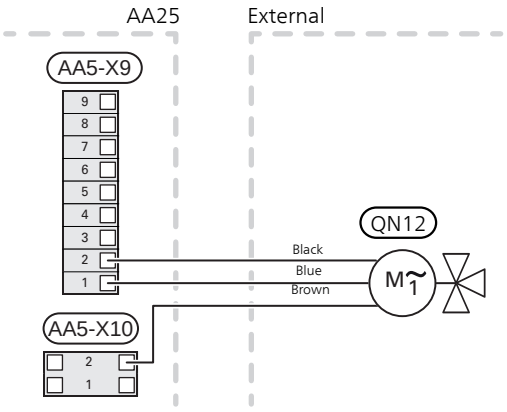


Caution

The charge pump ((AA35-GP12) is connected in the control module. See the control module's Installer Manual to connect the charge pump.

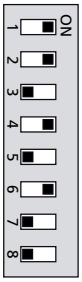
CONNECTION OF THE REVERSING VALVE MOTOR (EQ1-QN12)

Connect the reversing valve, cooling (QN12) to AA5-X9:2 (signal), AA5-X9:1 (N) and AA5-X10:2 (230 V).



DIP SWITCH

The DIP switch (S2) on the accessory board (AA5) must be set as follows.



S

PROGRAM SETTINGS

Caution

The cooling function must be activated in the heat pump. See the Installer Manual for the relevant model.

Program setting of AXC 30 can be performed via the start guide or directly in the menu system.

START GUIDE

The start guide appears at first start-up after the heat pump installation, but it can also be found in menu 7.7.

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 7.2.1 - Add/remove accessories

Here, you state which accessories are installed for the compatible product.

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

Menu 1.1 - Temperature

You make temperature settings for your installation here.

Menu 1.1.2 - Cooling

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

Setting range: 5 – 35°C

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

Caution

A slow climate system, such as underfloor heating, may be unsuitable for controlling with room sensors.

Setting the temperature (without room sensors activated):

Setting range: -10 – 10

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

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

TIP

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

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

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

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

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

Menu 1.3 - Room sensor settings

Here, you select the zone to which a sensor will belong. It is possible to connect multiple room sensors to each zone. Each room sensor can be given a unique name.

The control of heating, cooling, humidity and ventilation are activated by ticking each option. Which options are shown depends on which type of sensor is installed. If control is not activated, the sensor will be the displaying sensor.

Caution

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

Menu 1.30.7 - Own curve

Own curve, cooling

Caution

Curve 0 must be selected for own curve to apply.

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

Supply temp

Setting range: -5 – 40 °C

Menu 4.2.5 - Smart Price Adaption™

Affect cooling

Alternative: on/off

Degree of effect

Setting range: 1 – 10

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

Smart price adaption™ adjusts some of the heat pump's consumption over the day to those periods with the cheapest electricity tariff, which can give savings if on an hourly rate based electricity contract. The function is based on hourly rates for the next day being retrieved via myUplink, and an Internet connection and an account for myUplink are therefore required.

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

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

Menu 7.1.7 - Cooling (heat pump with cooling function required)

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

Menu 7.1.10.2 - Auto mode setting

Stop heating

Setting range: -20 – 40°C

Stop additional heat

Setting range: -25 – 40°C

Filtering time

Setting range: 0 – 48 h

Used as cooling/heating sensor

Possible options: None, Zone 1 - X

Set point value cool/heat sensor

Setting range: 5 – 40 °C

Heating at subnormal room temp

Setting range: 0.5 – 10.0 °C

Cooling at excess room temp

Setting range: 0.5 – 10.0 °C

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

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

Used as cooling/heating sensor

Here you select the sensor that will be used for cooling/heating. If BT74 is installed, it will be preselected and no other option is possible.

Set point value cool/heat sensor: Here, you can set the indoor temperature at which the installation will change between heating and cooling operation.

Heating at subnormal room temp: Here, you can set how much the room temperature can drop below the desired temperature before the installation switches to heating operation.

Cooling at excess room temp: Here, you can set how much the room temperature can increase above the desired temperature before the installation switches to cooling operation.

Menu 7.1.10.3 - Degree minute settings

Cooling, auto

Setting option: on/off

Degree minutes cooling

Setting alternative: -100 – 3,000 DM

Start active cooling

Setting alternative: 10 – 300 DM

Stepping diff compressors

Setting range: 10 – 2,000 DM

DM = degree minutes

Degree minutes are a measurement of the current cooling demand in the house and determine when the compressor or additional heat will start/stop.

Menu 7.4 - Selectable in/outputs

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

Menu 7.5.3 - Forced control

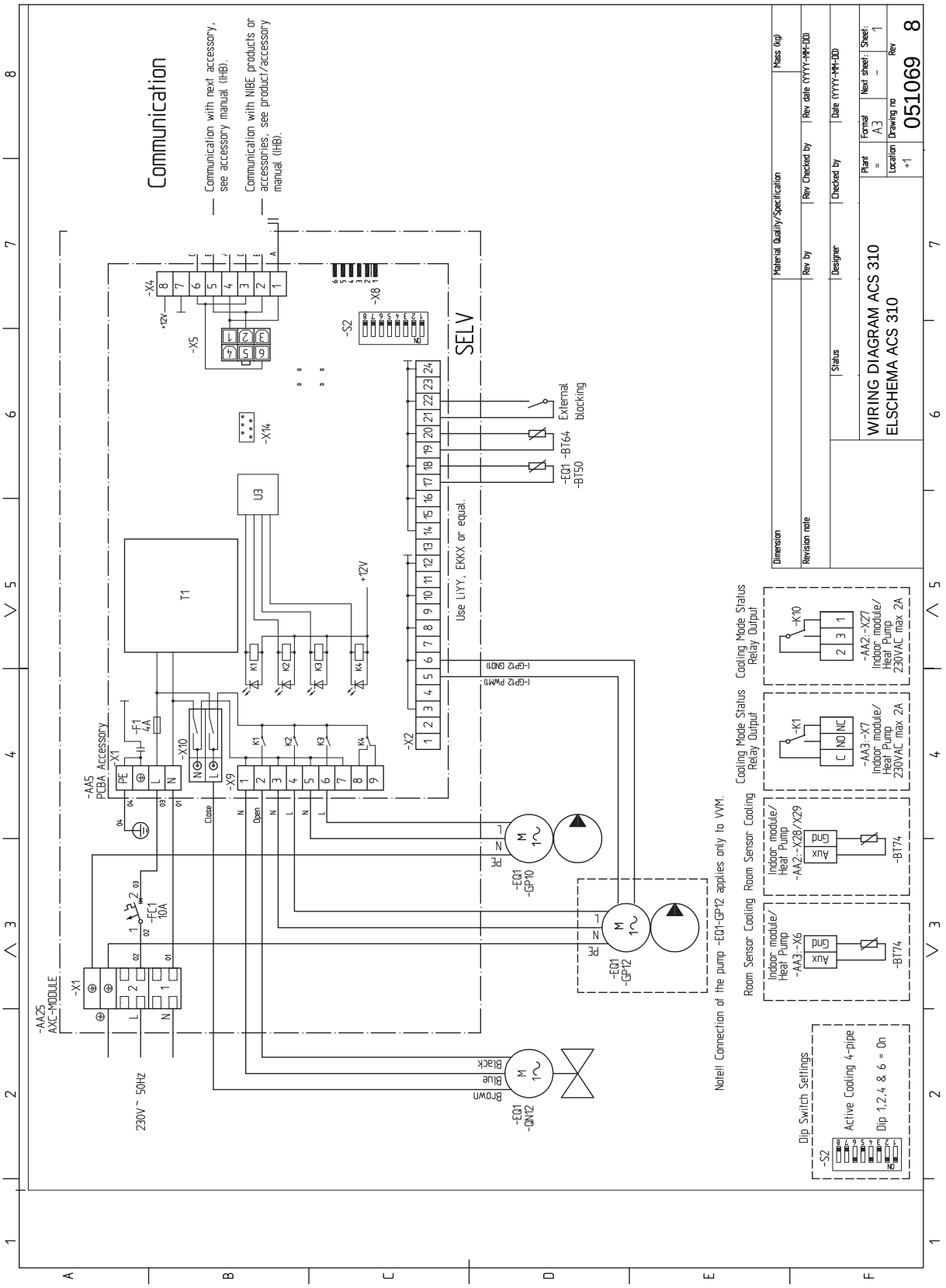
Here you can force control the various components in the installation. The most important safety functions remain active however.

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

> *Caution*
>
> Also see the Installer Manual for the main product.

S

ELECTRICAL CIRCUIT DIAGRAM



Pool heating

GENERAL

This function enables pool heating in your climate unit.

A reversing valve (CL11-QN19) is connected to control the heating medium supply to a pool exchanger. The reversing valve or, if required, the reversing valves (although with the same control signal), is/are installed on the heating medium circuit that normally goes to an underfloor heating/radiator system.

In systems with cascade connection you determine in the control system how many compressors are permitted to work with pool heating.

An external heating medium pump (AA35-GP10) is required for the climate system, when one or more pools are docked to the system, due to the fact that, during pool charging, it is the charge pump (AA35-GP12) that maintains the flow through the pool heat exchanger. The external heating medium pump (AA35-GP10) maintains the flow in the climate system, allowing the external supply temperature sensor (AA35-BT25) to measure the temperature correctly and allowing any additional heat to be connected if necessary.

The pool's circulation pump (CL11-GP9) circulates the pool water between the pool exchanger and the pool.

The control module controls the reversing valve (CL11-QN19), the pool circulation pump (CL11-GP9) and the external heating medium pump (AA35-GP10) via AXC 30.

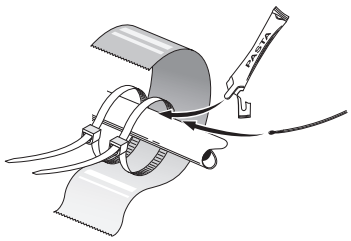
PIPE CONNECTIONS

REVERSING VALVE (CL11-QN19)

Install the reversing valve on the heating medium circuit, which normally runs to a radiator system. One port goes to the pool and one port goes to the heating system.

TEMPERATURE SENSOR

- The pool sensor (CL11-BT51) is placed on the return line from the pool.
- The external supply temperature sensor (AA35-BT25) is placed on the supply line to the climate system, before the external heating medium pump (AA35-GP10).
- The external return line sensor (AA35-BT71) is placed on the return line from the climate system.



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

NOTE

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

FUNCTION

Heating of the pool is prioritised according to selected settings in the control module. If the pool sensor (CL11-BT51) is not connected, pool charging is not permitted to start. The heating medium flow is adjusted so that the temperature difference across the pool heat exchanger is 10–15 °C. This setting is made in menu 7.1.2

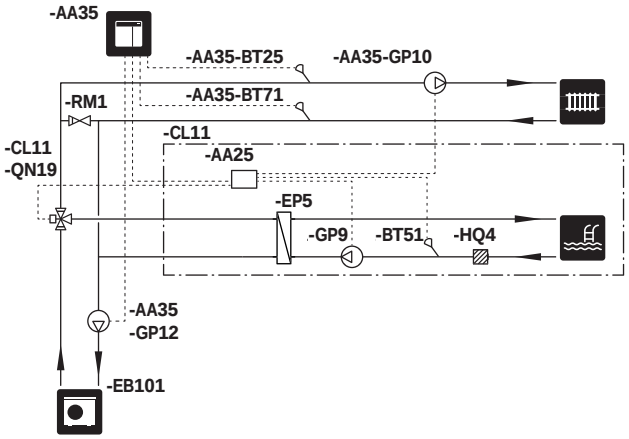
SYSTEM DIAGRAM

Caution

This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

CL11	**Pool heating**
AA25	AXC 30
QN19	Three way valve, pool
EP5	Pool heat exchanger
GP9	Circulation pump, pool circuit
BT51	Temperature sensor, pool
HQ4	Particle filter
EB101	**Heat pump**
AA35	**Control module**
GP10	External heating medium pump
BT25	External supply temperature sensor
BT71	External return line sensor
GP12	Charge pump
Miscellaneous	
RM1	Non-return valve



ELECTRICAL CONNECTION

NOTE

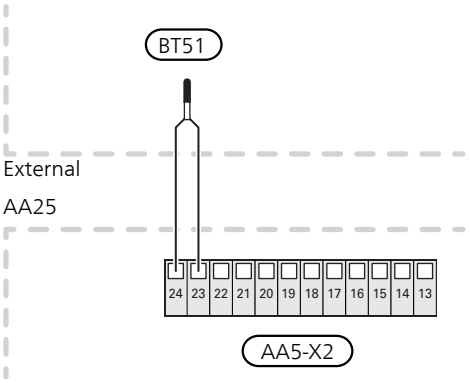
Read section "Common electrical connection" for instructions regarding electrical connection.

S

CONNECTION OF SENSORS AND EXTERNAL BLOCKING

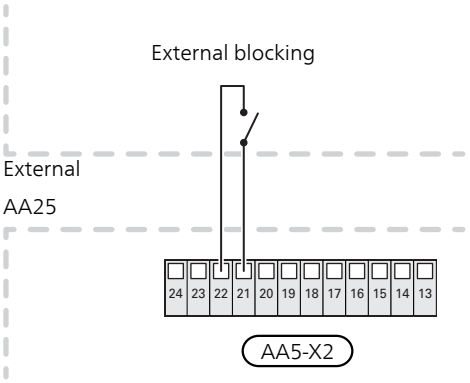
Pool sensor (CL11-BT51)

Connect the sensor to AA5-X2:23-24.



External blocking

A contact (NO) can be connected to AA5-X2:21-22 to block the accessory. When the contact closes, the accessory is blocked.



External supply temperature sensor (AA35-BT25)

Sensor (BT25) must be connected in the main product.

See the Installer Manual for the main product.

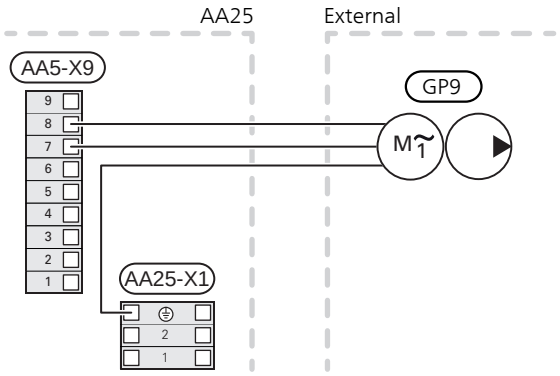
External return line sensor (AA35-BT71)

Sensor (BT71) must be connected in the main product.

See the Installer Manual for the main product.

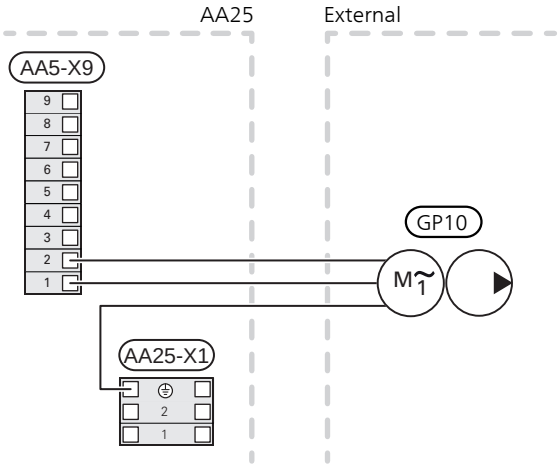
CONNECTING THE CIRCULATION PUMP, POOL (CL11-GP9)

Connect the circulation pump (GP9) to AA5-X9:7 (N), AA5-X9:8 (230 V) and X1:3 (PE).



CONNECTING THE HEATING MEDIUM PUMP, CLIMATE SYSTEM (AA35-GP10)

Connect the external heating medium pump (GP10) to AA5-X9:2 (230 V), AA5-X9:1 (N) and X1:3 (PE).

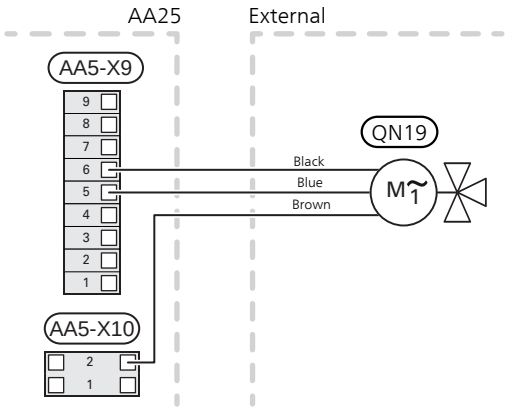


Caution

The charge pump ((AA35-GP12) is connected in the control module. See the control module's Installer Manual to connect the charge pump.

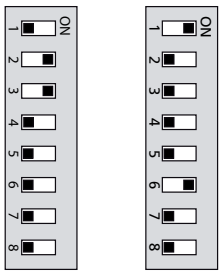
CONNECTION, REVERSING VALVE MOTOR (CL11-QN19)

Connect the reversing valve (QN19) to AA5-X9:5, X9:6 and AA5-X10:2 in the AXC module (AA25).



DIP SWITCH

The DIP switch on the accessory card must be set as follows.



PROGRAM SETTINGS

Program setting of AXC 30 can be performed via the start guide or directly in the menu system.

START GUIDE

The start guide appears at first start-up after the heat pump installation, but it can also be found in menu 7.7.

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 7.2.1 - Add/remove accessories

Here, you state which accessories are installed for the compatible product.

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

Menu 7.2.17 - Pool (POOL)

Activate/Deactivate Pool

Start temperature

Setting range: 5.0 – 80.0 °C

Stop temperature

Setting range: 5.0 – 80.0 °C

Max. number of compressors

Setting range: 1-18

Desired charge power

Setting range: 1-100 kW

Activate/Deactivate: Here, you activate or deactivate pool heating.

Start and Stop temperature: Here, you set the start and stop temperature of pool heating.

Max. number of compressors: Here, you select the number of compressors that will heat the pool.

Desired charge power: Here, you select the desired charge power to the pool.

TIP

The same settings can be made for Pool 2.

Caution

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

Menu 7.1.2.4 - Pump speed charge pump

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

S

Speed control - Heating

Alternatives: Auto/manual

Manual

Alternatives: On/Off

Speed in standby mode

Setting range: 1 – 100%

Speed control - Pool

Manual

Alternatives: On/Off

Manual speed Pool

Setting range: 1 – 100%

Speed control - Hot water

Manual

Alternatives: On/Off

Manual speed Hot water

Setting range: 1 – 100%

Speed control charge pump - Cooling

Manual

Alternatives: On/Off

Active cooling.

Setting range: 1 – 100%

Lowest permitted speed

Setting range: 1 – 50%

Highest permitted speed

Setting range: 80 – 100%

Speed control : Here, you set whether the charge pump will be regulated automatically or manually. Select "Auto" for optimal operation.

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

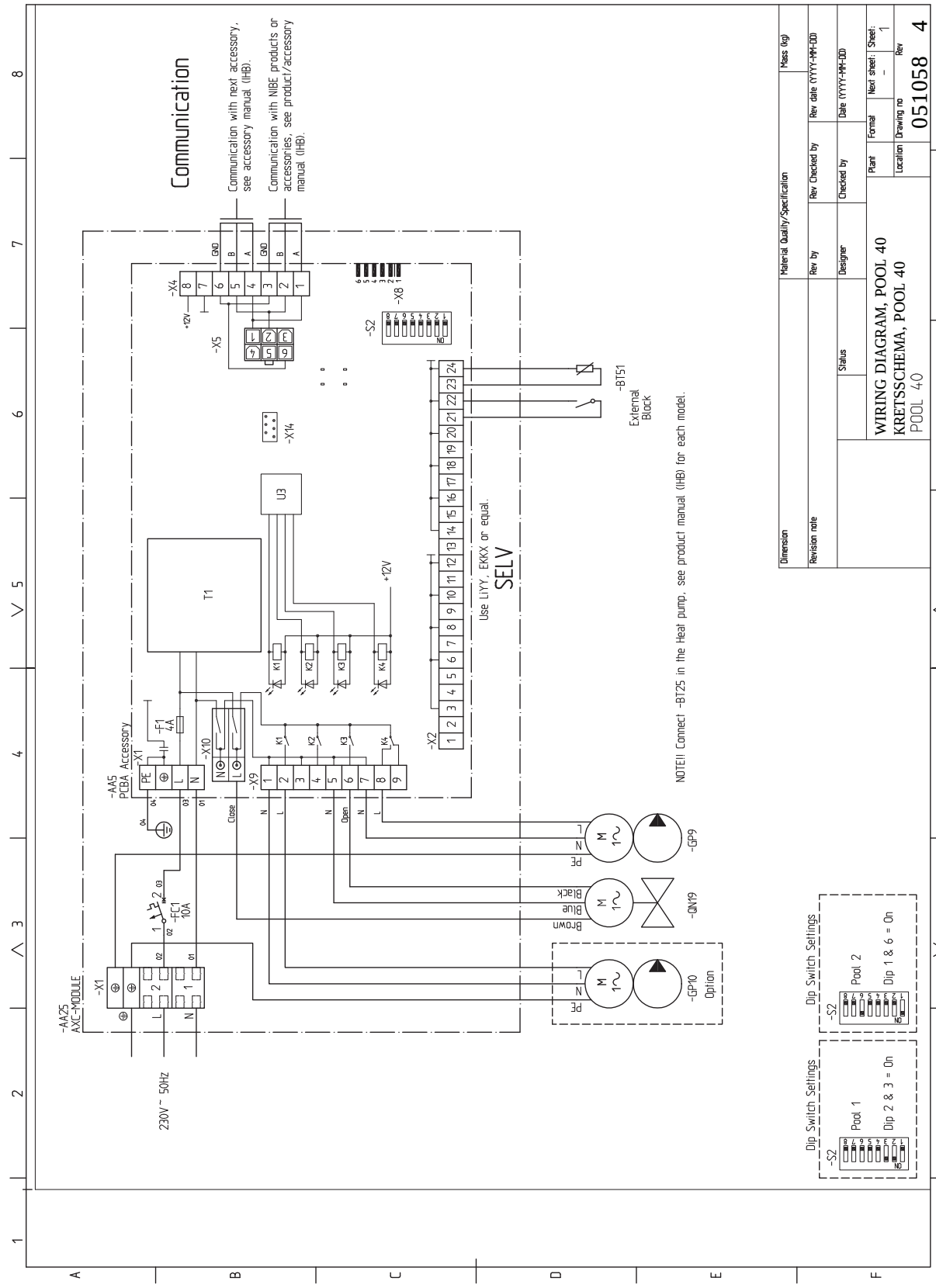
Speed control charge pump: Here, you set whether the charge pump is to be regulated automatically or via manually controlled speed. Select "Auto" for optimal operation.

Manual speed, charge pump: If you have opted to control the charge pump manually, you set the desired pump speed here. (Settings are available per demand heating/pool/hot water/cooling.)

Lowest permitted speed: Here, you can restrict the pump speed, so the charge pump is not allowed to operate at a lower speed than the set value.

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

ELECTRICAL CIRCUIT DIAGRAM



Connecting charge pumps in the case of multiple heat pumps

GENERAL

This function allows control of up to two extra charge pumps (GP12). AXC 30 is required for the charge pump for slave - EB10X, with address 3 or higher. Up to eight slaves can be combined in one system.

AA35-EB10X-GP12.X corresponds to AA35-EB103-GP12.3, AA35-EB105-GP12.5 and AA35-EB107-GP12.7.

AA35-EB10Y-GP12.Y corresponds to AA35-EB104-GP12.4, AA35-EB106-GP12.6 and AA35-EB108-GP12.8.

The control module controls the charge pumps together with the relevant slave during heating, hot water or cooling operation via AXC 30.

A type CPD charge pump is recommended to allow the use of speed control, which guarantees correct delta-t in the various operating modes during the year. AXC 30 also enables external blocking of each associated slave.

PIPE CONNECTIONS

The charge pump (GP12) is positioned in the relevant charge circuit before joining with other charge circuits or branching off different sub-systems via a reversing valve.

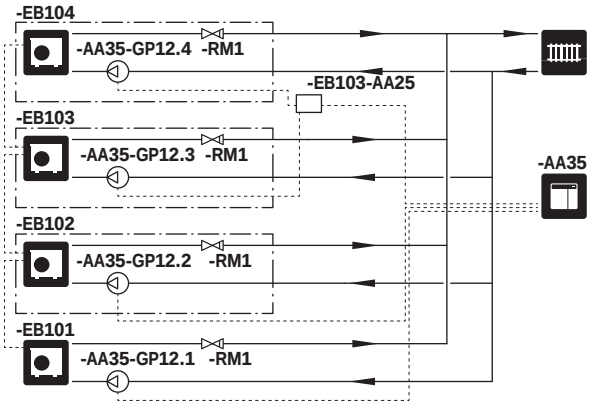
SYSTEM DIAGRAM

Caution

This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

EB101-EB104	**Heat pump**
AA25	AXC module
GP12.1-GP12.4	Charge pump
RM1	Non-return valve
AA35	**SMO S40**



ELECTRICAL CONNECTION

NOTE

Read section "Common electrical connection" for instructions regarding electrical connection.

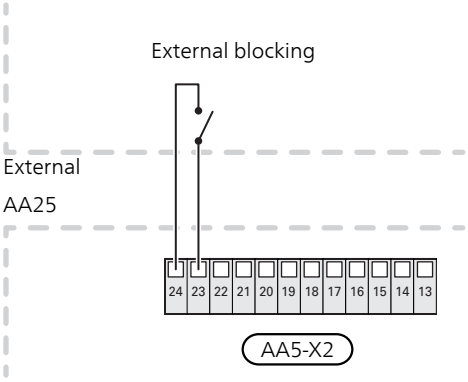
CONNECTION OF EXTERNAL BLOCKING

External blocking (optional)

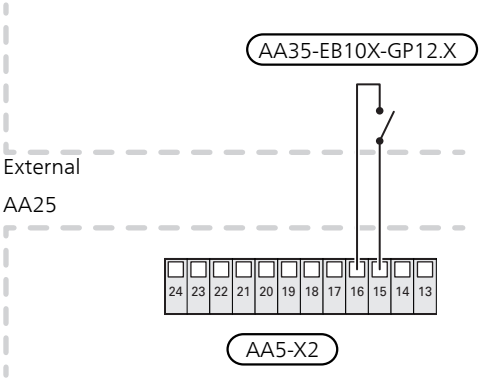
A contact (NO) can be connected to AA5-X2:23-24 to block the accessory. When the contact closes, the accessory is blocked.

Caution

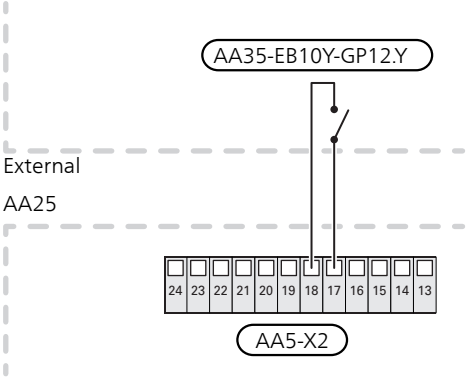
The relay outputs on the accessory board can have a max load of 2 A (230 V) in total.



An additional switch can be connected to AA5-X2:15-16 to allow blocking of the accessory function. When the switch closes, the accessory function AA35-EB10X-GP12.X is blocked.



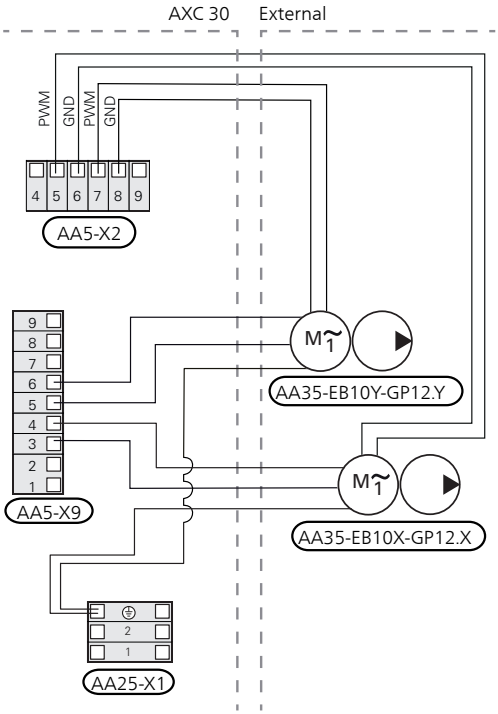
An additional switch can be connected to AA5-X2:17-18 to allow blocking of the accessory function. When the switch closes, the accessory function AA35-EB10Y-GP12.Y is blocked.



CONNECTION OF THE CIRCULATION PUMP (GP12)

Connect the circulation pump (AA35-EB10X-GP12.X) to AA5-X9:4 (230 V), AA5-X9:3 (N) and X1:3 (PE). Connect the control signal for the circulation pump (AA35-GP12) to AA5-X2:5 (PWM) and AA5-X2:6 (GND).

Connect the circulation pump (AA35-EB10Y-GP12.Y) to AA5-X9:6 (230 V), AA5-X9:5 (N) and X1:3 (PE). Connect the control signal for the circulation pump (AA35-GP12) to AA5-X2:7 (PWM) and AA5-X2:8 (GND).

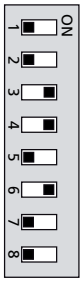


S

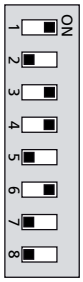
DIP SWITCH

The DIP switch (S2) on the accessory board (AA5) must be set as follows for the relevant circulation pump (GP12).

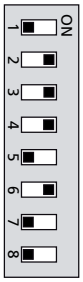
3-4



5-6



7-8



S

PROGRAM SETTINGS

Program setting of multi-installation during operation of several heat pumps can be performed via the start guide or directly in the menu system.

The start guide appears upon first start-up after heat pump installation, but is also found in menu 7.7.

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

MENU 7.2.1 - ADD/REMOVE ACCESSORIES

Here, you state which accessories are installed for the compatible product.

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

MENU 7.1.2 - CIRCULATION PUMPS

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

MENU 7.1.2.3 - OPERAT. MODE CHARGE PUMP

Operating mode Charge pump

Alternatives: Auto, Intermittent

Operating mode Charge pump during cooling

Alternatives: Auto, Intermittent

Auto: The charge pump runs according to the current operating mode for AXC 30.

Intermittent: The charge pump starts 20 seconds before the compressor starts and it is turned off 20 seconds after the compressor stops.

MENU 7.1.2.4 - PUMP SPEED CHARGE PUMP

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

Speed control - Heating

Alternatives: Auto/manual

Manual

Alternatives: On/Off

Speed in standby mode

Setting range: 1 – 100%

Speed control - Pool

Manual

Alternatives: On/Off

Manual speed Pool

Setting range: 1 – 100%

Speed control - Hot water

Manual

Alternatives: On/Off

Manual speed Hot water

Setting range: 1 – 100%

Speed control charge pump - Cooling

Manual

Alternatives: On/Off

Active cooling.

Setting range: 1 – 100%

Lowest permitted speed

Setting range: 1 – 50%

Highest permitted speed

Setting range: 80 – 100%

Speed control : Here, you set whether the charge pump will be regulated automatically or manually. Select "Auto" for optimal operation.

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

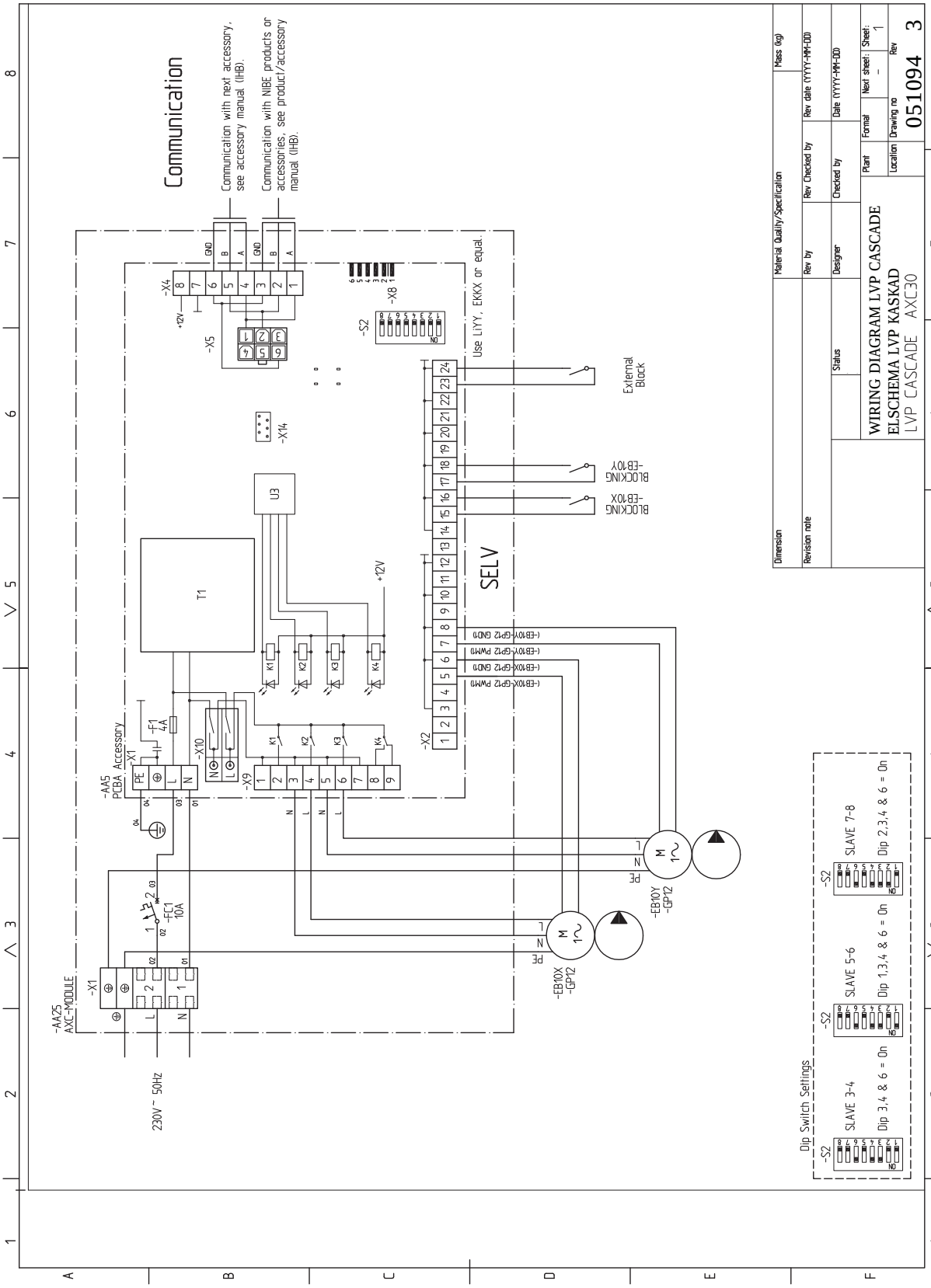
Speed control charge pump: Here, you set whether the charge pump is to be regulated automatically or via manually controlled speed. Select "Auto" for optimal operation.

Manual speed, charge pump: If you have opted to control the charge pump manually, you set the desired pump speed here. (Settings are available per demand heating/pool/hot water/cooling.)

Lowest permitted speed: Here, you can restrict the pump speed, so the charge pump is not allowed to operate at a lower speed than the set value.

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

ELECTRICAL CIRCUIT DIAGRAM



Technical data

TECHNICAL SPECIFICATIONS

AXC module		
Electrical data		
Rated voltage		230 V ~ 50 Hz
Enclosure class		IP21
Rated value for impulse voltage	kV	4
Pollution degree		2
Min fuse rating	A	10
Optional connections		
Max number of sensors		8
Max. number of outputs for charge pumps		3
Max. number of outputs for valves		2
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
Temperature during ball pressure test according to EN 60 730-1	°C	75
Dimensions LxWxH	mm	175x250x100
Weight	kg	1.47

AXC 30		
Part No.		067 304

S

Table of Contents

F-series

F-series

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.

This is an original manual. It may not be translated without the approval of NIBE.

Rights to make any design or technical modifications are reserved.

SYMBOLS

NOTE

This symbol indicates danger to person or machine .

Caution

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

TIP

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

MARKING

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

IP21 Classification of enclosure of electro-technical equipment.

Danger to person or machine.

Read the Installer Manual.

F

General

This accessory is used to enable connection and control of the following accessory functions. One AXC 30 is required for each function.

In the control module, there are connections to enable the connection and control of one of the following accessory functions. One, or more, additional accessory functions require one AXC 30 each.

- shunt-controlled additional heat
- step-controlled additional heat
- extra climate system
- hot water comfort
- active cooling (4-pipe system)
- pool heating
- connection of several heat pumps.

F

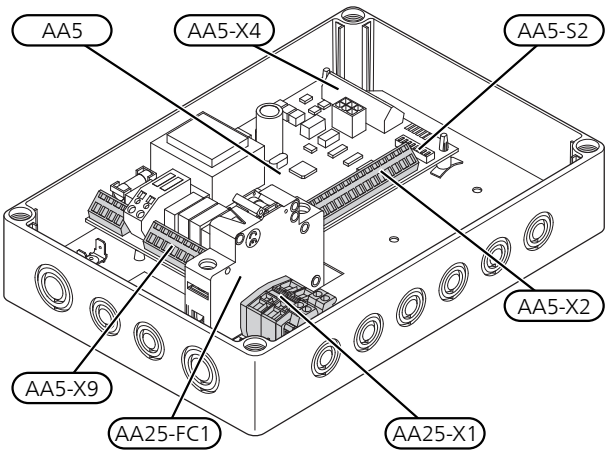
COMPATIBLE PRODUCTS

- SMO 40

CONTENTS

4 x	Cable ties
2 x	Heating pipe paste
1 x	Insulation tape
1 x	AXC module
2 x	Aluminium tape
2 x	Temperature sensor

COMPONENT LOCATION, AXC MODULE (AA25)



ELECTRICAL COMPONENTS

AA5	Accessory card	
	AA5-S2	DIP switch
	AA5-X2	Terminal block, inputs
	AA5-X4	Terminal block, communication
	AA5-X9	Terminal block, outputs
AA25	AXC module	
	AA25-FC1	Miniature circuit-breaker
	AA25-X1	Terminal block, power supply

Designations according to standard EN 81346-2.

Common electrical connection

NOTE

All electrical connections must be carried out by an authorised electrician.

Electrical installation and wiring must be carried out in accordance with the stipulations in force.

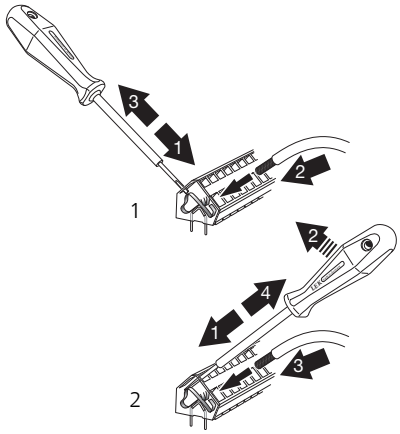
The main product must be disconnected from the power supply when installing AXC 30.

- 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.
- AXC 30 must be installed via an isolator switch. The cable area has to be dimensioned based on the fuse rating used.
- Mark the relevant electrical cabinet with a warning about external voltage, in those cases where a component in the cabinet has a separate supply.
- AXC 30 restarts after a power failure.

Electrical circuit diagrams are at the end of the chapter for each connection option.

CABLE LOCK

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

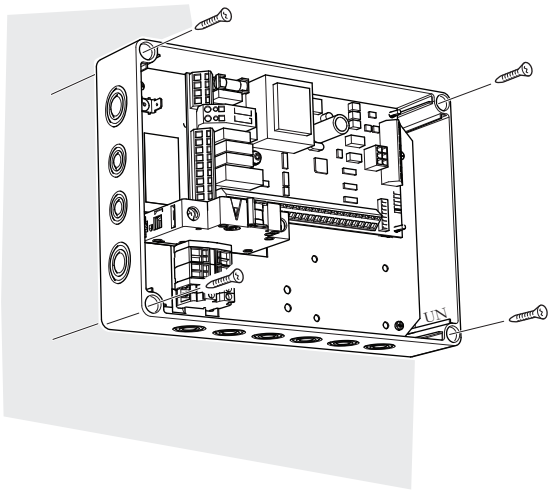


MOUNTING

The AXC module (AA25) is a separate, electric control module and must be mounted on a wall.

Caution

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



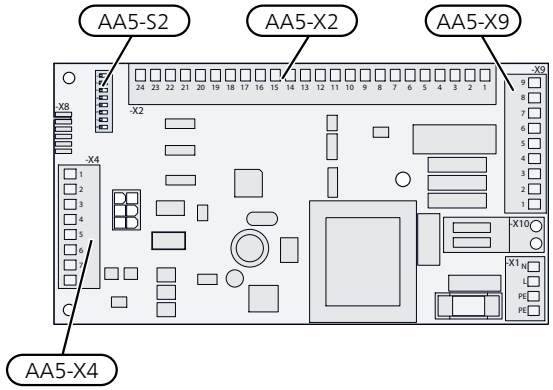
Use all mounting points and mount the module upright, flat against the wall.

Leave at least 100 mm of free space around the module to allow access and make cable routing easier during installation and servicing.

NOTE

The installation must be carried out in such a way that IP21 is satisfied.

OVERVIEW ACCESSORY BOARD (AA5)



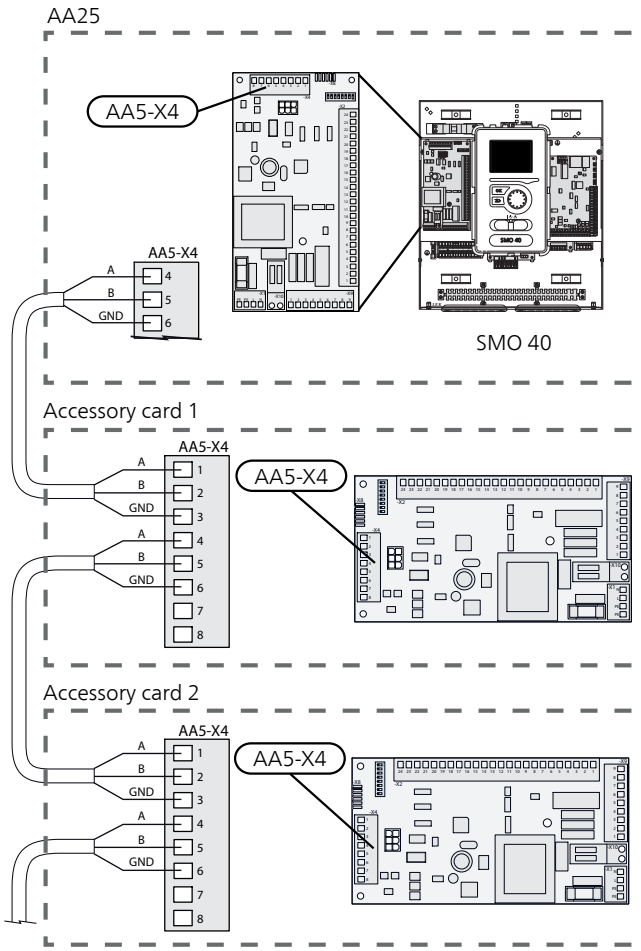
CONNECTING COMMUNICATION

AXC 30 contains an accessory board (AA5) that connects directly to the control module on its accessory board (terminal block AA5-X4).

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

F

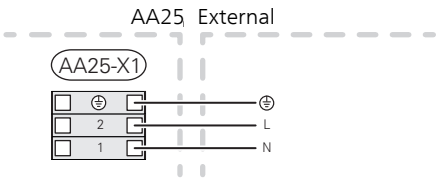
Because there can be different connections for accessories with accessory board (AA5), you should always read the instructions in the manual for the accessory that is to be installed.



POWER CONNECTION

Connect the power supply cable to terminal block AA25-X1 as illustrated.

Tightening torque for earth cable: 0.5–0.6 Nm.



Shunt controlled additional heat

GENERAL

This function enables an external additional heater, e.g. an electric boiler, wood boiler, pellet boiler, oil boiler, gas boiler or district heating, to assist with the heating.

The indoor module controls a shunt valve (EM1-QN11) and a circulation pump (EM1-GP10) via the accessory board in AXC 30. If the heat pump cannot maintain the correct supply temperature, at the external supply temperature sensor, (EM1-BT25), the additional heat starts. When the boiler temperature on the boiler sensor (EM1-BT52) exceeds the set value, the indoor module transmits a signal to the shunt (EM1-QN11) to open from the additional heat. The shunt (EM1-QN11) is regulated so the true supply temperature corresponds with the indoor module's theoretical calculated set point value. When the heating demand drops sufficiently, so that additional heat is no longer required, the shunt (EM1-QN11) closes completely.

Factory-set minimum operating time for the boiler is 12 hours.

The function smart energy source can be selected if you want to prioritise automatically between heat pump operation and additional heat versus the best price or environmental impact.

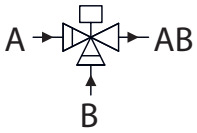
PIPE CONNECTIONS

The external circulation pump (EM1-GP10) is placed on the supply line to the climate system after the temperature sensor (AA25-BT25)

SHUNT VALVE

The shunt valve (EM1-QN11) must be placed on the supply line to the climate system after the heat pump according to the outline diagram.

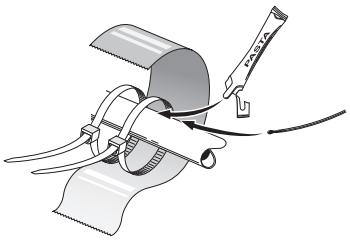
- Connect the supply line from the heat pump to the external heat source via the T-pipe to port B on the shunt valve (closes on reduce signal).



- Connect the supply line to the climate system from the shunt valve to the common port AB (always open)
- Connect the supply line from the external additional heat to the shunt valve to port A (opens on increase signal).

TEMPERATURE SENSOR

- Install the boiler sensor (EM1-BT52) in a suitable location in the external additional heat.
- The external supply temperature sensor (AA25-BT25), connected in the indoor module's control module, must be installed on the supply line to the climate system after the shunt valve (EM1-QN11).



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

NOTE

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

F

SYSTEM DIAGRAM

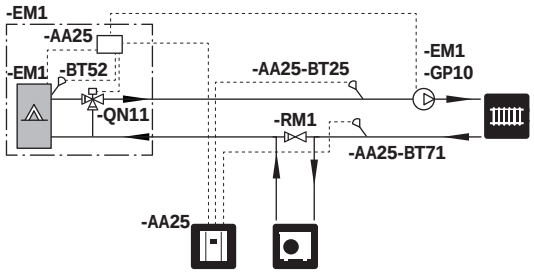
Caution

This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

EM1	**Mixing valve controlled additional heat, boiler**
AA25	AXC module
BT52	Boiler sensor
GP10	External heating medium pump
QN11	Mixing valve, addition
AA25	**SMO 40**
BT25	External supply temperature sensor
BT71	External return line sensor
Miscellaneous	
RM1	Non-return valve

OUTLINE DIAGRAM WITH SHUNT-CONTROLLED ADDITIONAL HEAT



ELECTRICAL CONNECTION

NOTE

Read section "Common electrical connection" for instructions regarding electrical connection.

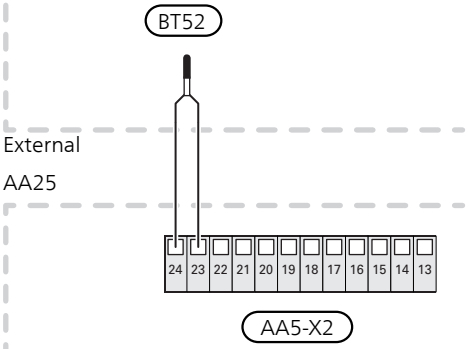
CONNECTION OF SENSORS AND EXTERNAL BLOCKING

Boiler sensor (EM1-BT52)

Connect the sensor to AA5-X2:23-24.

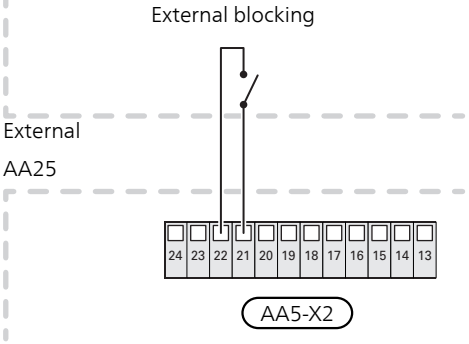
Caution

Sensor cable splicing must fulfil IP54.



External blocking (optional)

A contact (NO) can be connected to AA5-X2:21-22 to block the accessory. When the contact closes, the accessory is blocked.



External supply temperature sensor (AA25-BT25)

Sensor (BT25) must be connected in the main product.

See the Installer Manual for the main product.

External return line sensor (AA25-BT71)

Sensor (BT71) must be connected in the main product.

See the Installer Manual for the main product.

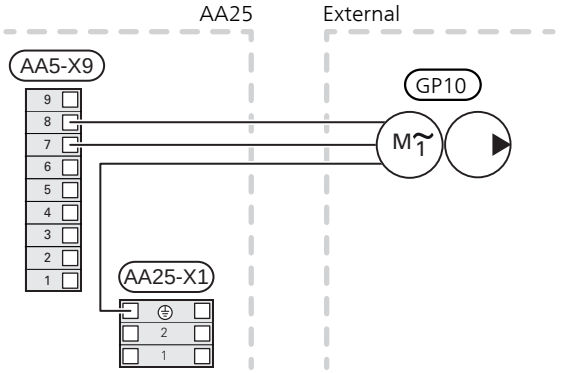
F

Caution

The relay outputs on the accessory board can have a max load of 2A (230V) in total.

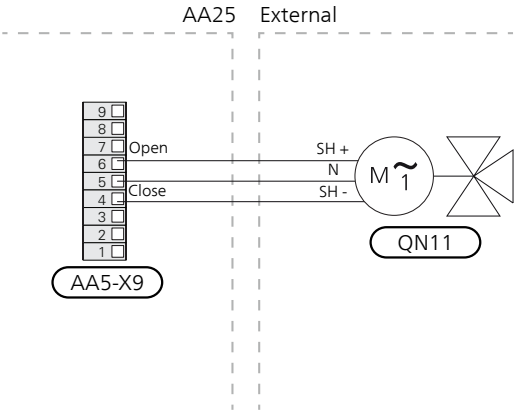
CONNECTION OF THE CIRCULATION PUMP (EM1-GP10)

Connect the external heating medium pump (GP10) to AA5-X9:7 (N), AA5-X9:8 (230 V) and X1:PE.



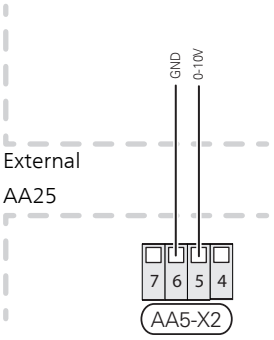
CONNECTION OF THE SHUNT VALVE MOTOR (EM1-QN11)

Connect the shunt motor (QN11) to AA5-X9:6 (230V, open), AA5-X9:5 (N) and AA5-X9:4 (230V, close).



Connection of 0-10 V control of shunt motor (EM1-QN11)

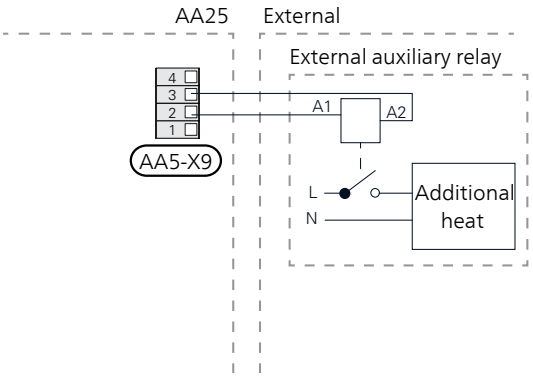
Connect a 2-core cable to AA5-X2:5 (0-10 V) and AA5-X2:6 (GND).



At 0 V the shunt is closed and at 10 V the shunt is open.

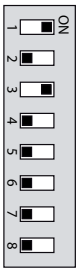
CONNECTION OF THE AUXILIARY RELAY FOR ADDITIONAL HEATING

Connect the auxiliary relay for switching the additional heat on and off to AA5-X9:2 (230V) and AA5-X9:3 (N).



DIP SWITCH

The DIP switch (S2) on the accessory board (AA5) must be set as follows.



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PROGRAM SETTINGS

Program setting of AXC 30 can be performed via the start guide or directly in the menu system.

Start guide

The start guide appears at first start-up after the heat pump installation, but can also be found in menu 5.7.

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 5.2.4 - accessories

Activating/deactivating of accessories.

Select: "shunt controlled add. heat".

Menu 5.3.2 - shunt controlled add. heat

Here you can perform the following settings:

- activation of the prioritised additional heat function.
- minimum operating time.
- minimum boiler temperature at which the shunt will start to regulate.
- shunt amplification.
- shunt waiting time.

Menu 5.6 - forced control

Forced control of the various components in the heat pump as well as in the various accessories that may be connected.

EM1-AA5-K1: Activation of relay for extra heating.

EM1-AA5-K2: Signal (close) to mixing valve (QN11).

EM1-AA5-K3: Signal (open) to mixing valve (QN11).

EM1-AA5-K4: Activating the circulation pump (GP10).

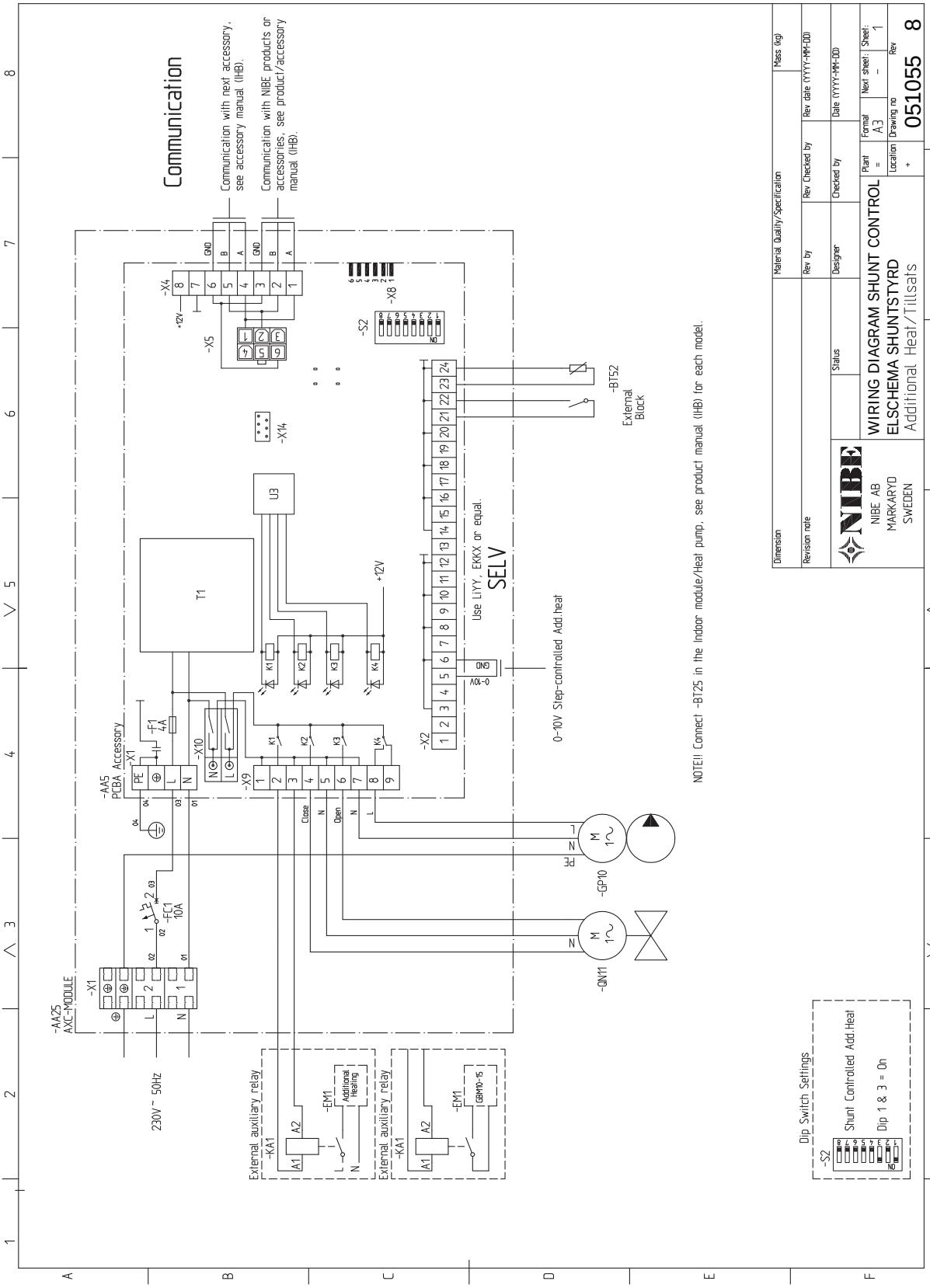
Menu 4.1.8 - smart energy source™ (option)

The function prioritises how/to what extent each docked energy source will be used. Here you can select whether the system will use the energy source that is cheapest at the time. You can also select whether the system will use the energy source that is most carbon neutral at the time. If you want to prioritise additional heat, set the values to 0.

Caution

Also see the Installer Manual for the main product.

ELECTRICAL CIRCUIT DIAGRAM



F

Step controlled additional heat

GENERAL

This function enables an external additional heater, e.g. an electric boiler, to aid with heating.

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

The flow through the additional heat is ensured by the external circulation pump (EB1-GP10).

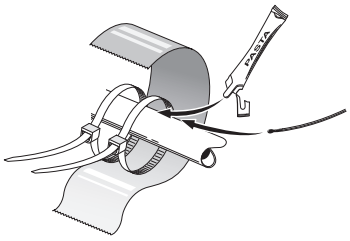
PIPE CONNECTIONS

The external circulation pump (EM1-GP10) is placed on the supply line to the climate system after the temperature sensor (AA25-BT25)

If the climate system's flow exceeds the maximum recommended flow for the electric boiler, a bypass must be installed so that only a partial flow passes through the electric boiler.

TEMPERATURE SENSOR

- The external supply temperature sensor (AA25-BT25) , connected in the indoor module's control module, must be installed on the supply line to the climate system after the additional heat.



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

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

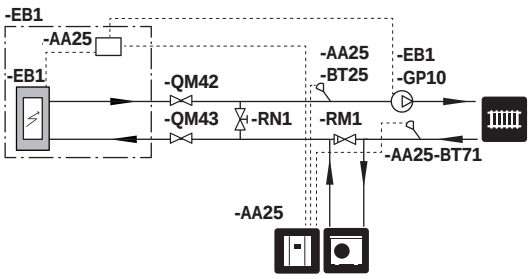
SYSTEM DIAGRAM

> ☞ *Caution*
>
> This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

EB1	**Step controlled additional heat**
AA25	AXC module
GP10	External heating medium pump
AA25	**SMO 40**
BT25	External supply temperature sensor
BT71	External return line sensor
Miscellaneous	
QM42-43	Shut-off valve
RN1	Trim valve
RM1	Non-return valve

OUTLINE DIAGRAM WITH STEP-CONTROLLED ADDITIONAL HEAT



ELECTRICAL CONNECTION

NOTE

Read section "Common electrical connection" for instructions regarding electrical connection.

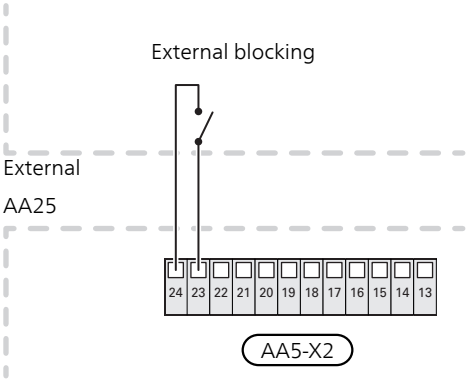
CONNECTION OF SENSORS AND EXTERNAL BLOCKING

External blocking (optional)

A contact (NO) can be connected to AA5-X2:23-24 to block the accessory. When the contact closes, the accessory is blocked.

Caution

The relay outputs on the accessory board can have a max load of 2 A (230 V) in total.



External supply temperature sensor (AA25-BT25)

Sensor (BT25) must be connected in the main product.

See the Installer Manual for the main product.

External return line sensor (AA25-BT71)

Sensor (BT71) must be connected in the main product.

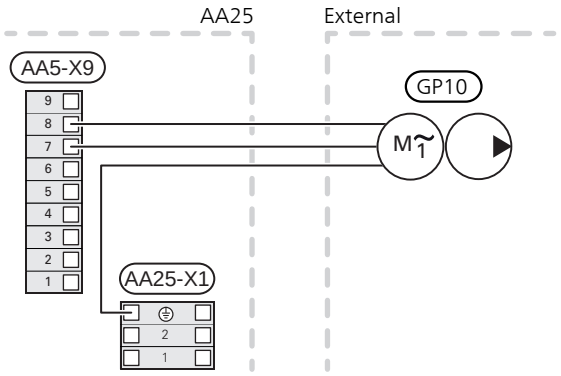
See the Installer Manual for the main product.

Caution

The relay outputs on the accessory board can have a max load of 2A (230V) in total.

CONNECTING HEATING MEDIUM PUMP (EB1-GP10)

Connect the external heating medium pump (GP10) to AA5-X9:7 (N), AA5-X9:8 (230 V) and X1:PE.



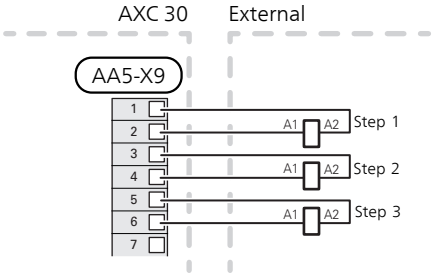
CONNECTION OF RELAYS

Connecting additional step

Connect step 1 to AA5-X9:1 and 2.

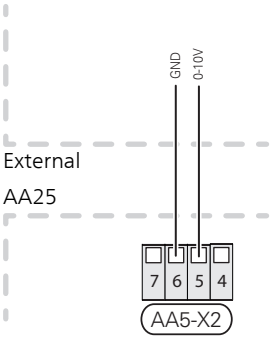
Connect step 2 to AA5-X9:3 and 4.

Connect step 3 to AA5-X9:5 and 6.



Connection of 0-10 V control of additional heat step

Connect a 2-core cable to AA5-X2:5 (0-10 V) and AA5-X2:6 (GND).



0 V = 0 steps and 10 V = max. number of set steps.

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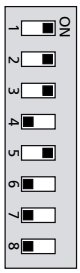
DIP SWITCH

The DIP switch (S2) on the accessory board (AA5) must be set as follows.



PROGRAM SETTINGS

Program setting of AXC 30 can be performed via the start guide or directly in the menu system.

START GUIDE

The start guide appears upon first start-up after the heat pump installation, but is also found in menu 5.7 .

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 5.2.4 - accessories

Activating/deactivating of accessories.

Select: "step controlled add. heat".

Menu 5.3.6 - step controlled add. heat AXC30

Here you can perform the following settings:

- Select when the addition is to start.
- Set max permitted number of additional steps.
- If binary stepping is to be used.

> *Caution*
>
> "start additional heat" in the menus 5.3.6 (external) and 4.9.3 (internal) are factory set at 400DM. If both the additional heat options are used and you want to have more steps, the start difference needs to be changed in one of the menus.

Menu 5.6 - forced control

Forced control of the different components in the heat pump as well as in the different accessories that may be connected.

EB1-AA5-K1: Activating additional step 1.

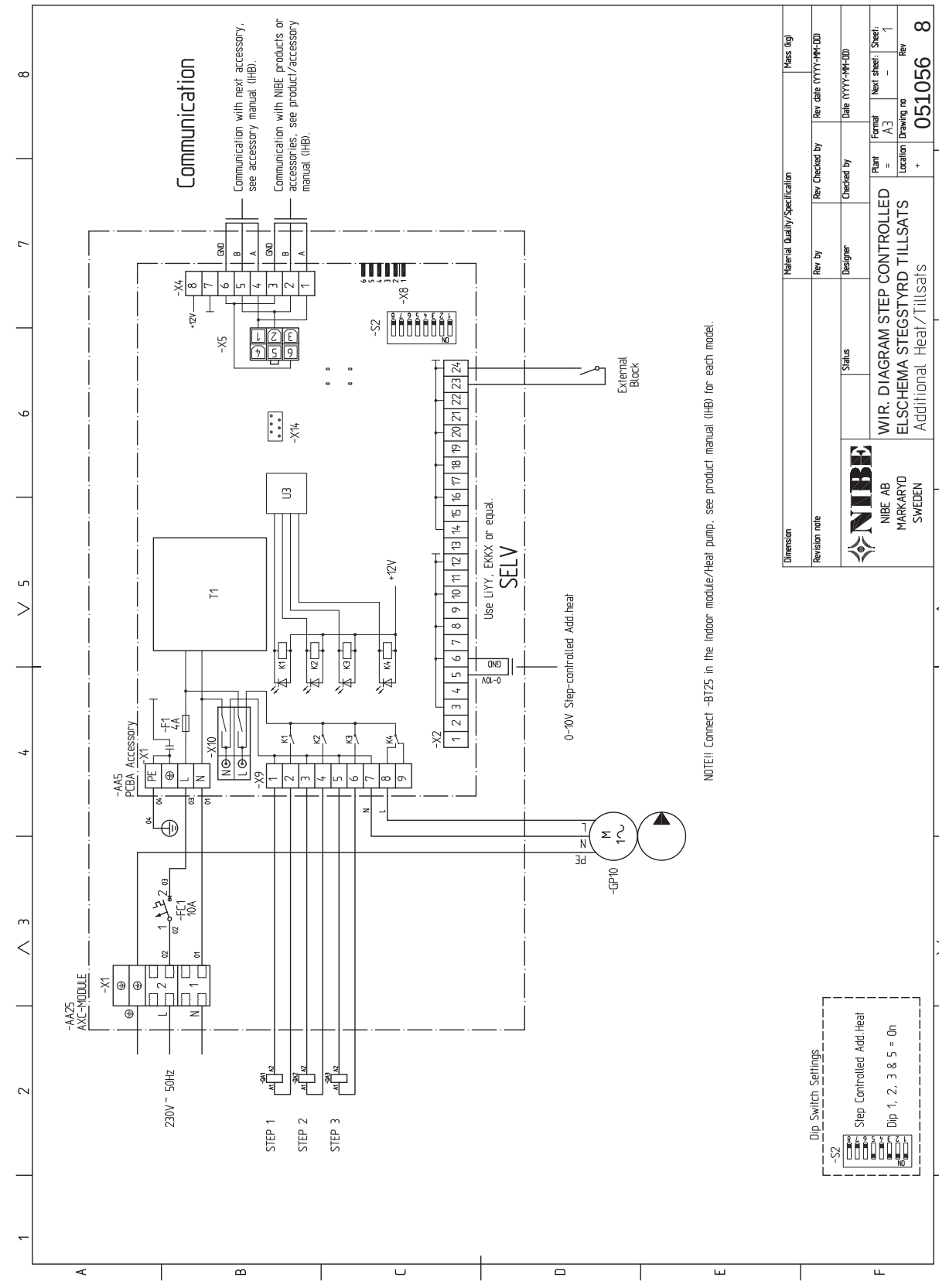
EB1-AA5-K2: Activating additional step 2.

EB1-AA5-K3: Activating additional step 3.

EB1-AA5-K4: Activating the circulation pump (GP10).

> *Caution*
>
> Also see the Installer Manual for the main product.

ELECTRICAL CIRCUIT DIAGRAM



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Extra climate system

GENERAL

This function is used when SMO 40 is going to control more than one climate system. It is possible to connect up to eight different climate systems (heating and/or cooling systems) that require different supply temperatures, for example where the house has both radiator systems and underfloor heating systems.

> *Caution*
>
> With underfloor heating systems, the maximum supply temperature is normally set between 35 and 45 °C.
>
> Check the max floor temperature with your floor supplier.

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

PIPE CONNECTIONS

GENERAL

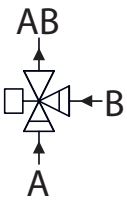
When connecting extra climate systems, they must be connected so that they have a lower working temperature than the climate system 1.

CIRCULATION PUMP

The extra circulation pump (EP21-GP10) is positioned in the extra climate system according to the outline diagram.

SHUNT VALVE

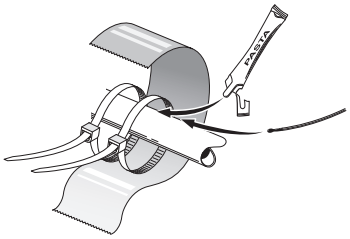
The shunt valve (EP21-QN25) is located on the supply line after the heat pump/indoor module, before the first radiator in the climate system 1. The return line from the extra climate system is connected to the shunt valve and to the return line from the climate system 1, see image and outline diagram.



- Connect the supply line to the climate system from the heat pump to port A on the shunt valve (opens on increase signal)
- Connect the return line from the climate system to port B on the shunt valve via the T-pipe (closes on reduce signal).
- Connect the supply line to the climate system to the common port AB on the shunt valve (always open).

TEMPERATURE SENSOR

- The supply line sensor (EP21-BT2) is installed on the pipe between the circulation pump (EP21-GP10) and shunt valve (EP21-QN25).
- The return line sensor (EP21-BT3) is installed on the pipe from the extra climate system.



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

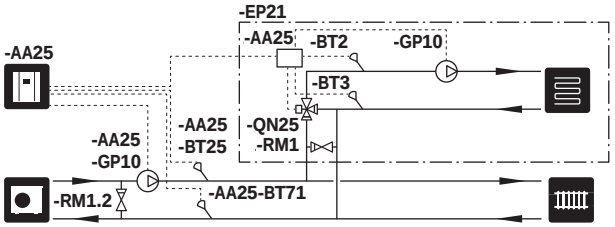
> *NOTE*
>
> To prevent interference, sensor cables to external connections must not be laid close to high voltage cables.

SYSTEM DIAGRAM

> *Caution*
>
> This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

EP21	**Climate system**
AA25	AXC module
BT2	Flow temperature sensor, extra climate system
BT3	Return line sensor, extra climate system
GP10	Circulation pump, extra climate system
QN25	Shunt valve
RM1	Non-return valve
AA25	**SMO 40**
BT25	External supply temperature sensor
BT71	External return line sensor
GP10	External heating medium pump
RM1.2	Non-return valve



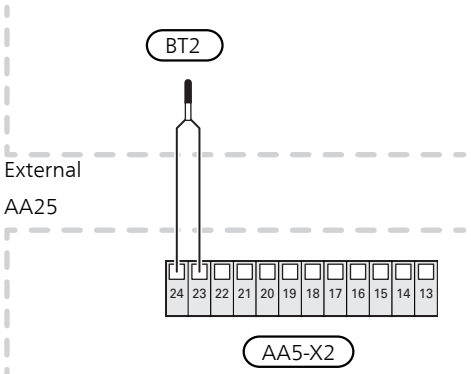
ELECTRICAL CONNECTION

> ⚠ *NOTE*
>
> Read section "Common electrical connection" for instructions regarding electrical connection.

CONNECTION OF SENSORS AND EXTERNAL ADJUSTMENT

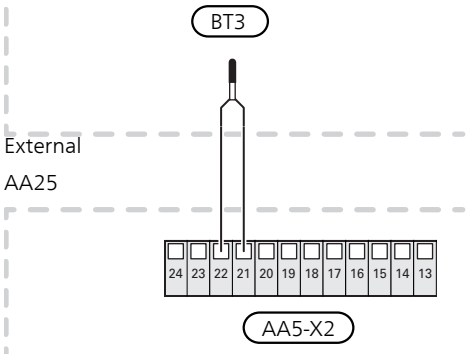
Supply temperature sensor, extra climate system (EP21-BT2)

Connect the supply temperature sensor to AA5-X2:23-24.



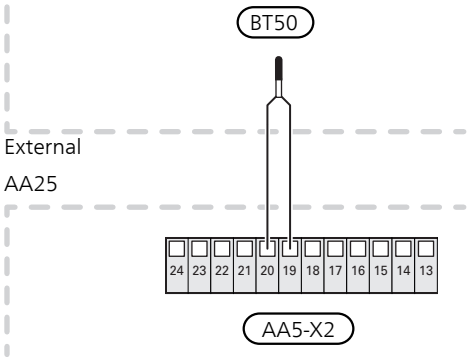
Return line sensor, extra climate system (EP21-BT3)

Connect the return line sensor to AA5-X2:21-22.



Room sensor, extra climate system (EP21-BT50) (optional)

Connect the room sensor to AA5-X2:19-20.



External supply temperature sensor (AA25-BT25)

Sensor (BT25) must be connected in the main product.

See the Installer Manual for the main product.

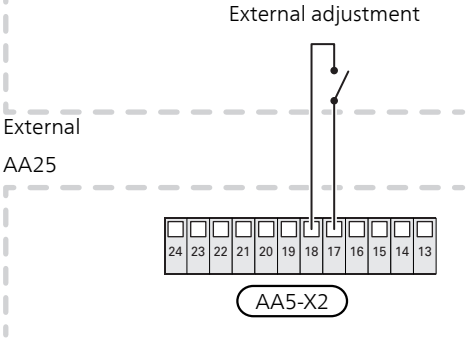
External return line sensor (AA25-BT71)

Sensor (BT71) must be connected in the main product.

See the Installer Manual for the main product.

External adjustment (optional)

A potential-free switch can be connected to AA5-X2:17-18 for external adjustment of the climate system.

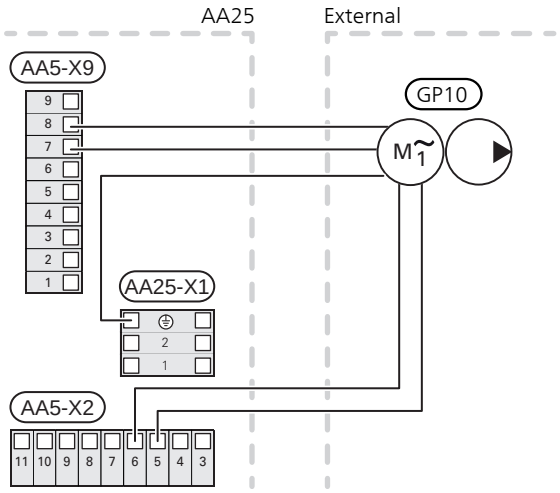


> ☞ *Caution*
>
> The relay outputs on the accessory board can have a max load of 2A (230V) in total.

CONNECTION OF THE CIRCULATION PUMP (EP21-GP10)

Connect the external heating medium pump (GP10) to AA5-X9:7 (N), AA5-X9:8 (230 V) and X1:PE.

Connect 0-10V control signal for heating medium pump (GP10) to AA5-X2:5(0-10V) and AA5-X2:6(GND)



Pump speed EP21-GP10	
100 %	approx. 0 V DC
50 %	approx. 5 V DC
0 %	approx. 10 V DC

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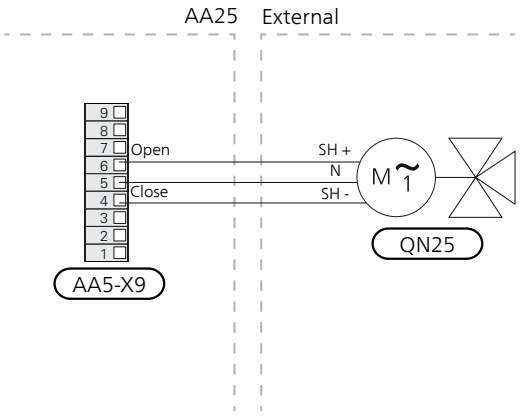
CONNECTING EXTERNAL HEATING MEDIUM PUMP (AA25-GP10)

To connect the external heating medium pump (GP10, see the relevant product's Installer Manual.

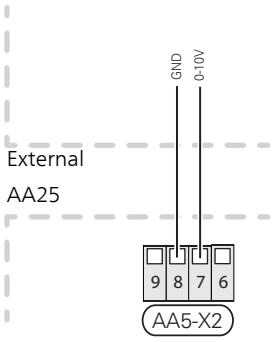
CONNECTION OF THE SHUNT VALVE MOTOR (EP21-QN25)

Connect the shunt motor (QN25) to AA5-X9:6 (230V, open), AA5-X9:5 (N) and AA5-X9:4 (230V, close).



Connection of 0-10 V control of shunt motor (EP21-QN25)

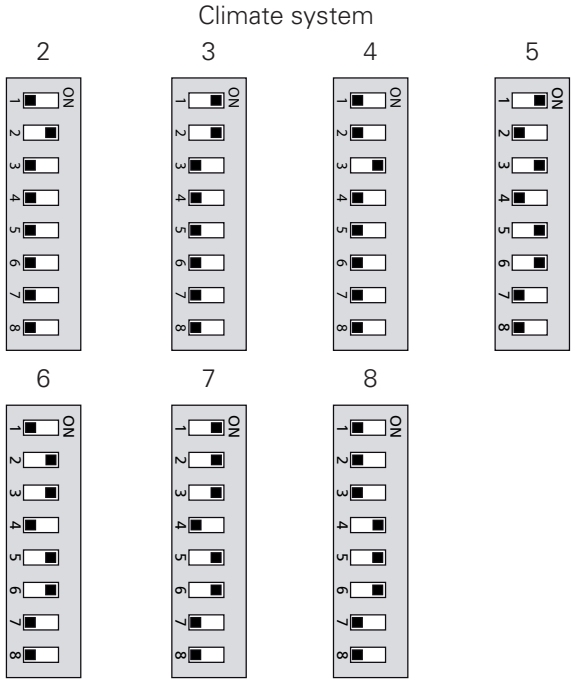
Connect a 2-core cable to AA5-X2:7 (0-10 V) and AA5-X2:8 (GND).



At 0 V the shunt is closed and at 10 V the shunt is open.

DIP SWITCH

Connections in the control module are used to enable connection and control of the climate system 2. One or more additional climate systems require one AXC 30 each. The DIP switch (S2) on the accessory board (AA5) must be set as follows, with each climate system having a unique setting.



PROGRAM SETTINGS

Activating AXC 30 can be performed via the start guide or directly in the menu system.

START GUIDE

The start guide appears upon first start-up after heat pump installation, but is also found in menu 5.7.

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 5.2.4 - accessories

Activating/deactivating of accessories.

Here, you state which accessories are installed for the compatible product.

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

Menu 5.1.2 - max flow line temperature

Setting the maximum flow temperature for each climate system.

Menu 5.3.3 - extra climate system

Mixing valve settings for extra installed climate system.

mixing valve amplification 2

Setting range: 0.1–10.0

Factory setting: 1.0

mixing valve step delay 2

Setting range: 10–300 s

Factory setting: 30 s

use in heating mode

Setting range: on/off

Factory setting: on

use in cooling mode

Setting range: on/off

Factory setting: off

Contr. pump GP10

Setting range: on/off

Control signal

Setting range: PWM / 0-10V

Manual speed

Setting range: 0-100%

Menu 1.1 - temperature

Setting the indoor temperature.

Menu 1.9.1.1 -heating curve

Setting the heat curve.

Menu 1.9.1.2 -cooling curve

Setting the cooling curve.

Menu 1.9.2 - external adjustment

Setting external adjustment.

Menu 1.9.3 - min. flow line temp.

Setting the minimum flow temperature for each climate system.

Menu 1.9.4 - room sensor settings

Activating and setting the room temperature sensor.

Menu 5.6 - forced control

Forced control of the different components in the heat pump as well as in the different accessories that may be connected. 2 is climate system, EP22, 3 is climate system EP23, 4 is climate system EP21.

EP2#-AA5-K1: No function.

EP2#-AA5-K2: Signal (close) to mixing valve (QN25).

EP2#-AA5-K3: Signal (open) to mixing valve (QN25).

EP2#-AA5-K4: Activating the circulation pump (GP10).

Caution

Also see the Installer Manual for the main product.

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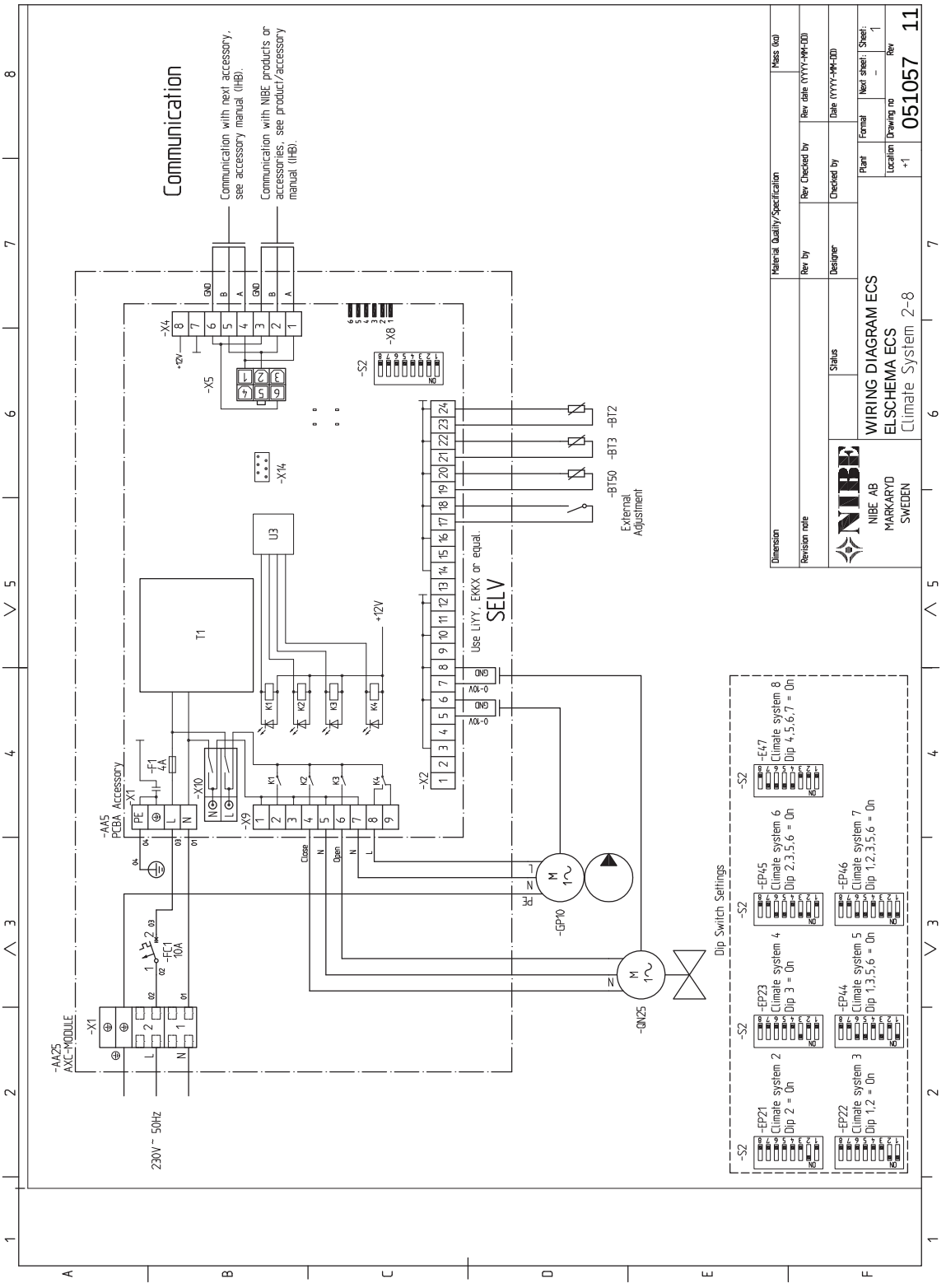

Communication
Communication with next accessory, see accessory manual (IHB).
Communication with NIBE products or accessories, see product/accessory manual (IHB).
-AA25 AXC-MODULE
-AA5 PCBA Accessory
-X1
-X4
-X5
-X8
-X9
-X10
-X14
-X2
-S2
-F1 4A
-FC1 10A
T1
U3
K1
K2
K3
K4
+12V
+12V
GND
0-10V
Use LiYY, EKKX or equal.
SELV
-BT150 -BT3 -BT12
External Adjustment
-GP10
-QN25
Close
Open
230V ~ 50Hz
Dip Switch Settings
-EP21 Climate system 2 Dip 2 = On
-EP22 Climate system 3 Dip 1,2 = On
-EP23 Climate system 4 Dip 3 = On
-EP44 Climate system 5 Dip 1,3,5,6 = On
-EP45 Climate system 6 Dip 2,3,5,6 = On
-EP46 Climate system 7 Dip 1,2,3,5,6 = On
-E47 Climate system 8 Dip 4,5,6,7 = On
NIBE AB
MARKARYD
SWEDEN
WIRING DIAGRAM ECS
ELSCHEMA ECS
Climate System 2-8
051057 11

Hot water comfort

GENERAL

This function provides the opportunity to control additional heat in the tank, mixing valve and hot water circulation.

ADDITIONAL HEAT IN TANK

If an immersion heater is installed in the tank, it can be permitted to produce hot water at the same time as the heat pump prioritises heating or cooling.

MIXING VALVE

A temperature sensor reads the temperature of the outgoing hot water to the domestic hot water and adjusts the mixing valve from the water heater until the set temperature has been reached.

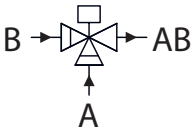
HOT WATER CIRCULATION (HWC)

One pump can be controlled for the circulation of the hot water during selectable periods.

PIPE CONNECTIONS

MIXING VALVE

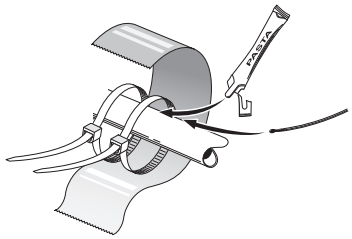
The mixer valve (QZ1-FQ3) must be placed on the outgoing hot water line from the water heater according to the outline diagram.



- Connect the incoming cold water via the T-pipe to port B on the mixer valve (closes at signal).
- Connect the mixed water to the domestic hot water taps from the mixer valve to the common port AB (always open).
- Connect the outgoing hot water from the water heater to the mixer valve to port A (opens on signal)

TEMPERATURE SENSOR

- Temperature sensor, outgoing hot water, (QZ1-BT70) is installed as close to the mixing valve (QZ1-FQ3) as possible.



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

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

F

SYSTEM DIAGRAM

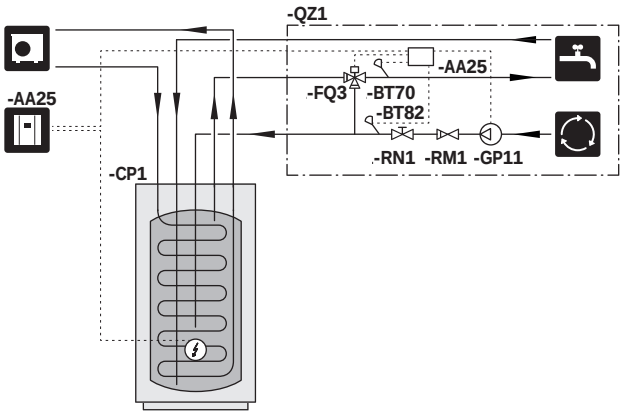
EXPLANATION

Caution

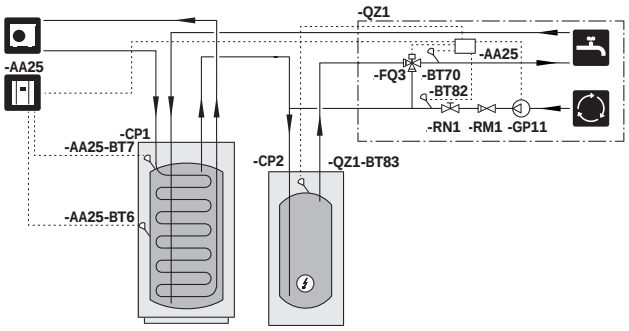
This is an outline diagram. Actual installations must be planned according to applicable standards.

QZ1	**Hot water comfort**
AA25	AXC module
GP11	Hot water circulation pump
FQ3	Mixer valve, hot water
RN1	Trim valve
RM1	Non-return valve
BT70	Flow line sensor
BT82	Return line sensor, hot water
BT83	Temperature sensor, hot water heater
CP1	**Water heater**
CP2	**Additional water heater**
AA25	**SMO 40**
BT6	Temperature sensor, hot water
BT7	Temperature sensor, hot water top

OUTLINE DIAGRAM WITH ADDITIONAL HEAT IN THE WATER HEATER, HWC AND ELECTRONIC MIXING VALVE



OUTLINE DIAGRAM WITH ADDITIONAL WATER HEATER, HWC AND ELECTRONIC MIXING VALVE



ELECTRICAL CONNECTION

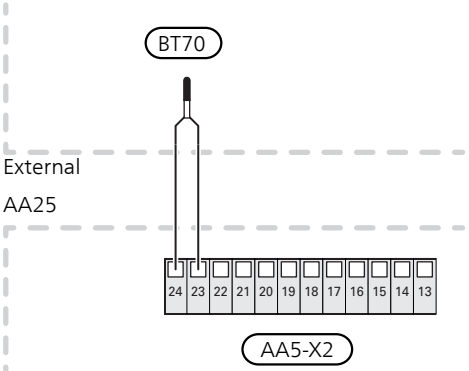
NOTE

Read section "Common electrical connection" for instructions regarding electrical connection.

CONNECTION OF SENSORS AND EXTERNAL BLOCKING

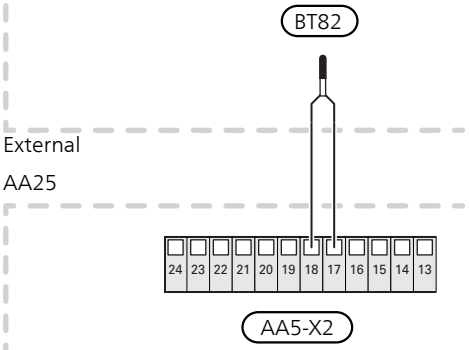
Hot water sensor, supply line (QZ1-BT70)

Connect the hot water sensor to AA5-X2:23-24.



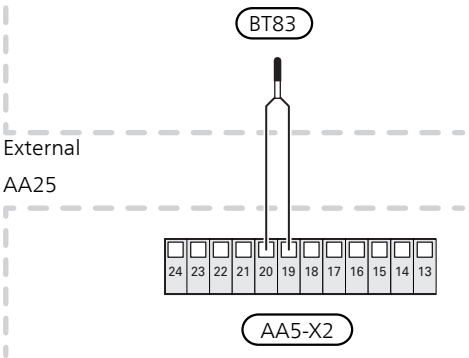
Temperature sensor, hot water comfort, return line (QZ1-BT82)

Connect the temperature sensor to AA5-X2:17-18.



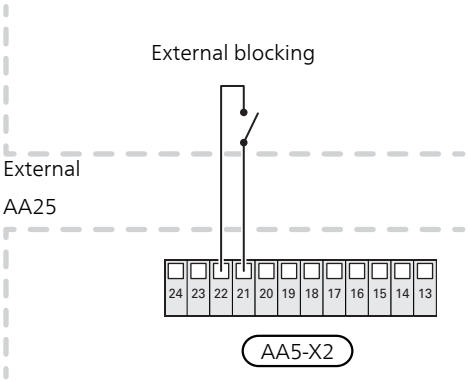
Temperature sensor, hot water heater (QZ1-BT83)

Connect the temperature sensor to AA5-X2:19-20.



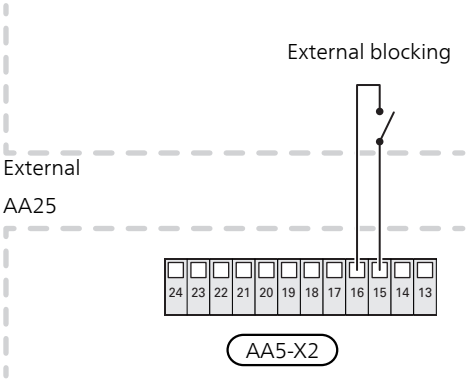
External blocking

A contact (NO) can be connected to AA5-X2:21-22 to block the accessory. When the contact closes, the accessory is blocked.



External blocking, hot water circulation pump (QZ1-GP11)

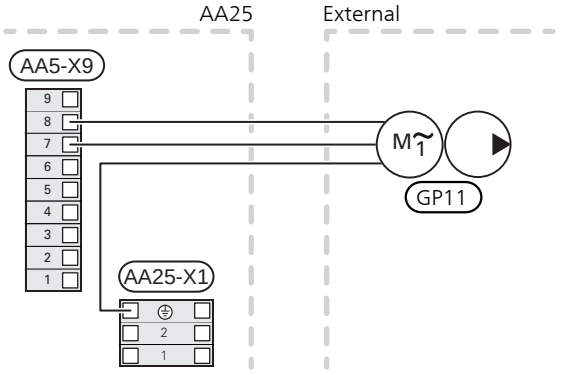
A contact (NO) can be connected to AA5-X2:15-16 to block the hot water circulation pump. When the contact closes, the hot water circulation pump is blocked.



> *Caution*
>
> The relay outputs on the accessory board can have a max load of 2A (230V) in total.

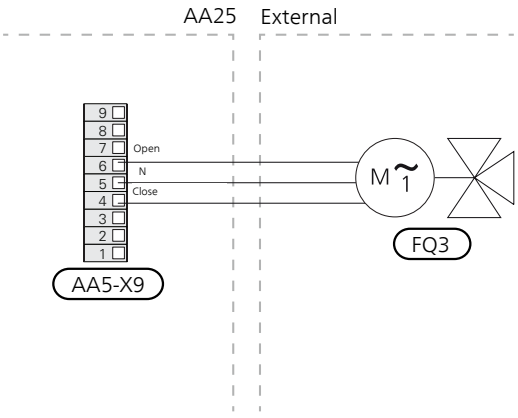
CONNECTION OF THE HOT WATER CIRCULATION PUMP (QZ1-GP11)

Connect the circulation pump (GP11) to AA5-X9:8 (230V), AA5-X9:7 (N) and X1:3 (PE).



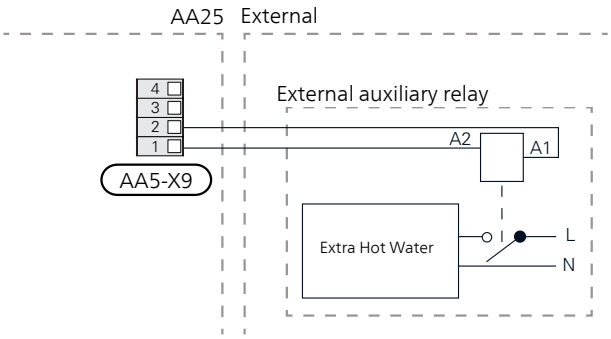
CONNECTION OF THE MIXER VALVE (QZ1-FQ3)

Connect the mixing valve motor (FQ3) to AA5-X9:6 (230V, open), AA5-X9:5 (N) and AA5-X9:4 (230V, close).



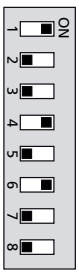
CONNECTION OF AUXILIARY RELAY FOR ADDITIONAL HEAT IN TANK

Connect the auxiliary relay for switching the additional heat on and off to AA5-X9:1 (N) and AA5-X9:2 (230V).



DIP SWITCH

The DIP switch (S2) on the accessory board (AA5) must be set as follows.



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PROGRAM SETTINGS

Program setting of AXC 30 can be performed via the start guide or directly in the menu system.

START GUIDE

The start guide appears at first start-up after the heat pump installation, but can also be found in menu 5.7.

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 5.2.4 - accessories

Activating/deactivating of accessories.

Select: "hot water comfort".

Menu 2.9.2 - hot water recirc.

Here you can make the following settings for hot water circulation for up to three periods per day:

- How long the hot water circulation pump must run per operating instance
- How long the hot water circulation pump must be stationary between operating instances.

Menu 5.3.8 - hot water comfort

Here you can perform the following settings:

- *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*: Activate if mixing valve is installed and will to be controlled from the heat pump. When the option is active, you can set the outgoing hot water temperature, shunt amplification and shunt waiting time for the mixer valve.

Menu 5.6 - forced control

Forced control of the different components in the heat pump as well as in the different accessories that may be connected.

QZ1-AA5-K1: Activating the relay for extra hot water.

QZ1-AA5-K2: Signal (close) to the mixing valve (FQ3).

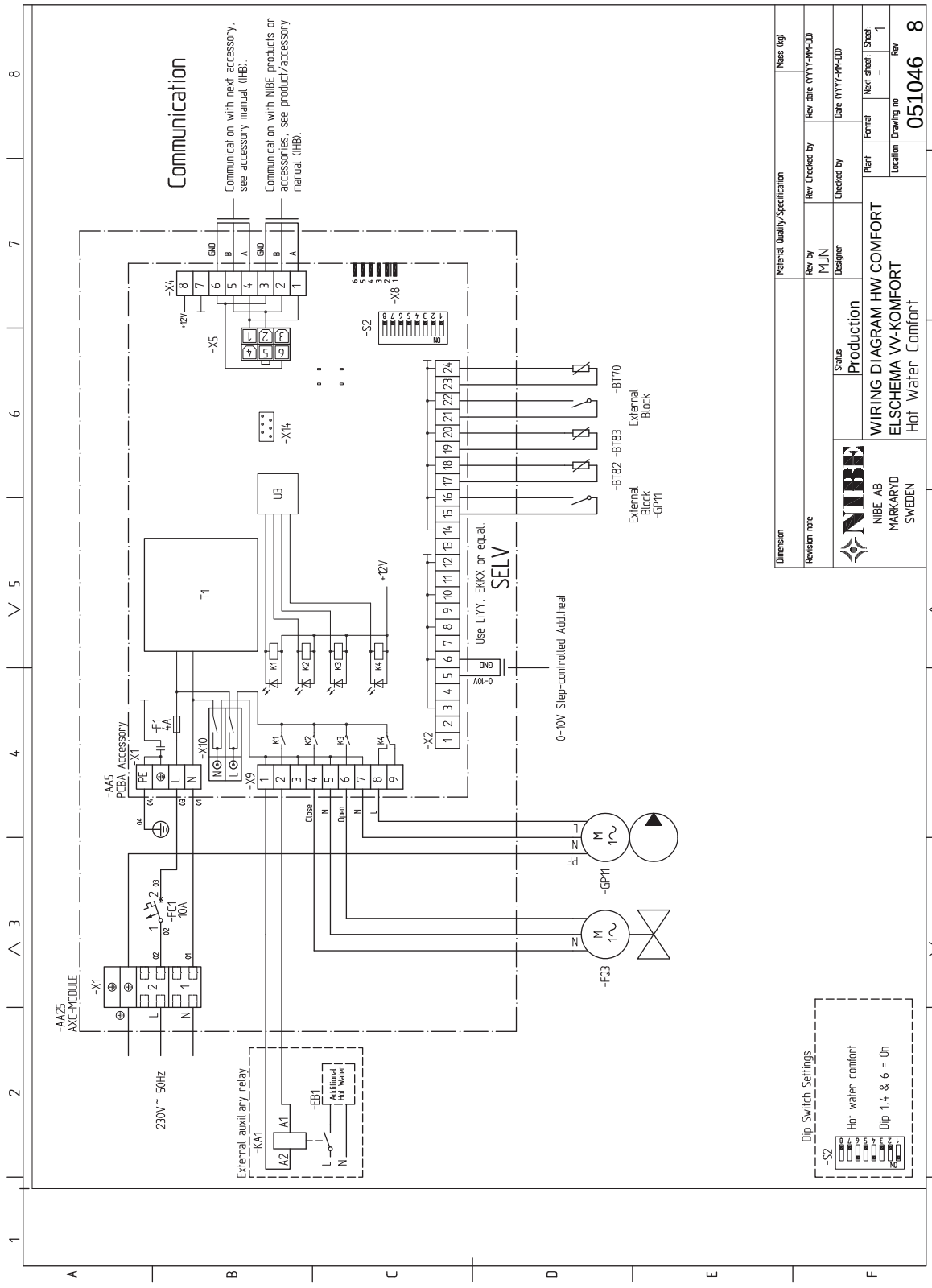
QZ1-AA5-K3: Signal (open) to the mixing valve (FQ3).

QZ1-AA5-K4: Activating the circulation pump (GP11).

Caution

Also see the Installer Manual for the main product.

ELECTRICAL CIRCUIT DIAGRAM



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Active cooling in 4-pipe system

GENERAL

This function makes it possible to control the production of cooling.

The cooling system is supplied with cooling from the heat pump using a circulation pump (AA25-GP12) via a reversing valve (QN12).

For the installation to work, the cooling system must flow freely at all times, for example using a volume vessel (UKV) for cooling.

Operating mode cooling is activated by the temperature on the outdoor temperature sensor (AA25-BT1) and any room sensor (AA25-BT50) , room unit or separate room sensor for cooling (AA25-BT74) (if two different rooms are to be cooled or heated at the same time, for example).

When cooling is required, the cooling reversing valve (EQ1-QN12) and the circulation pump (EQ1-GP10) are activated.

Cooling production is regulated by the cooling sensor (EQ1-BT64) and a cooling set point value that is determined by the selected cooling curve.

As an accessory, a cooling reversing valve is required, e.g. VCC 22/VCC 28.

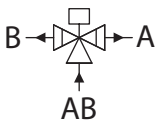
PIPE CONNECTIONS

GENERAL

Pipes and other cold surfaces must be insulated with diffusion-proof material to prevent condensation. Where the cooling demand is high, fan convectors with drip trays and drain connection are needed.

REVERSING VALVE, COOLING/HEATING

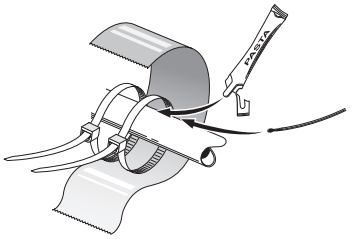
The reversing valve (EQ1-QN12) is located in the system on the supply line from the heat pump.



- Connect the supply line to the climate systems from the heat pump to the common port AB on the reversing valve (always open).
- Connect the supply line to the climate system for cooling to port A on the reversing valve.
- Connect the supply line to the climate system for heating to port B on the reversing valve.

TEMPERATURE SENSOR

Temperature sensor (EQ1-BT64) is mounted on the supply line to the cooling system at the T-pipe connection to the volume vessel (CP10.2).



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

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

F

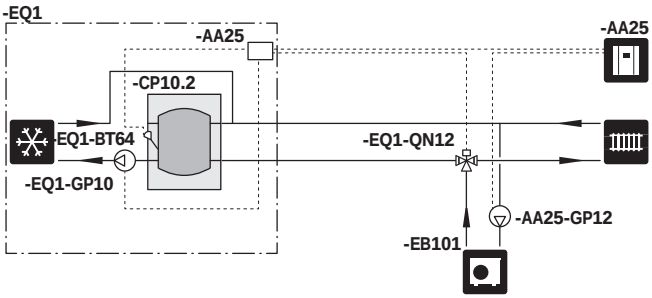
SYSTEM DIAGRAM

Caution

This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

EQ1	**Active cooling.**
AA25	AXC module
BT64	Temperature sensor, flow line cooling
CP10.2	UKV
GP10	External heating medium pump
QN12	Reversing valve, heating/cooling
EB101	**Heat pump**
AA25	**SMO 40**
GP12	Charge pump



ELECTRICAL CONNECTION

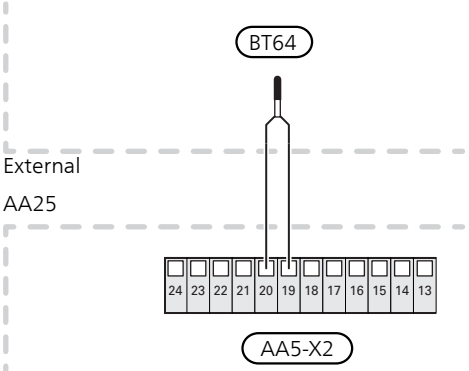
NOTE

Read section "Common electrical connection" for instructions regarding electrical connection.

CONNECTION OF SENSORS AND EXTERNAL BLOCKING

Temperature sensor, supply line cooling (EQ1-BT64)

Connect the sensor to AA5-X2:19-20.



Temperature sensor, cooling/heating sensor, (AA25-BT74)

An extra temperature sensor (room sensor for cooling) is connected to SMO 40 allow to better determination of when it is time to switch between heating and cooling operation. The settings are made in menu 1.9.5

Connect the temperature sensor to one of the AUX inputs in SMO 40, see the Installer Manual for the correct connection. The appropriate AUX input is selected in menu 5.4. Use a 2-core cable with a cable area of at least 0.5 mm².

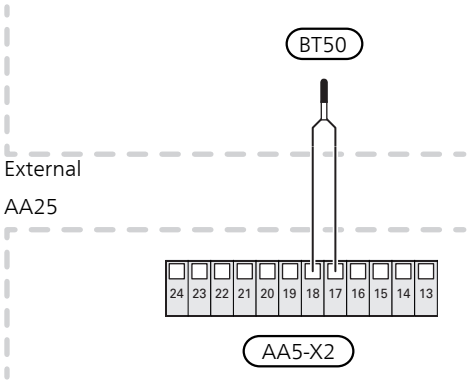
Place the temperature sensor in a neutral position in the room where the set temperature is required. It is important that the sensor is not obstructed from measuring the correct room temperature by being located, for example, in a recess, between shelves, behind a curtain, above or close to a heat source, in a draft from an external door or in direct sunlight. Closed radiator thermostats can also cause problems.

Room sensor (EQ1-BT50).

A room sensor can be connected as shown, and it can also control the room temperature in cooling/heating operation.

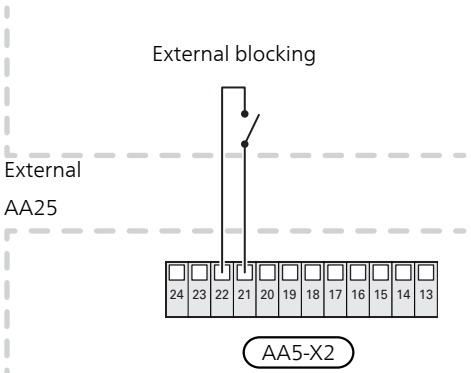
Connect the room sensor to AA5-X2:17-18.

F



External blocking (optional)

A contact (NO) can be connected to AA5-X2:21-22 to allow blocking of the cooling operation. When the contact closes, cooling operation is blocked.

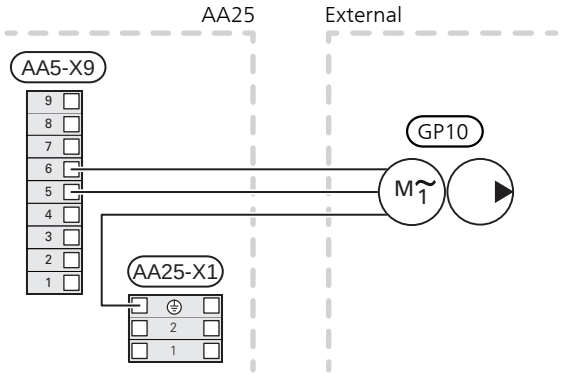


Caution

The relay outputs on the accessory board can have a max load of 2A (230V) in total.

CONNECTION OF THE COOLING CIRCULATION PUMP (EQ1-GP10)

Connect the circulation pump (GP10) to AA5-X9:6 (230V), AA5-X9:5 (N) and X1:3 (PE)

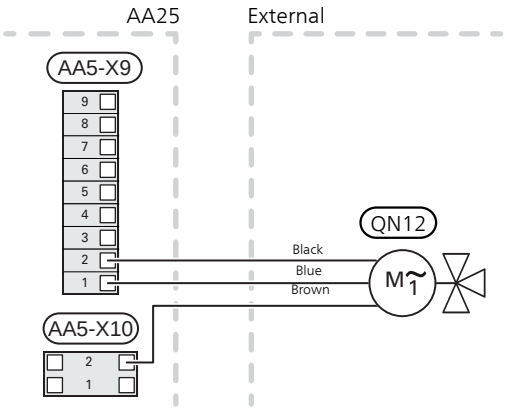


Caution

The charge pump ((AA25-GP12) is connected in the control module. See the control module's Installer Manual to connect the charge pump.

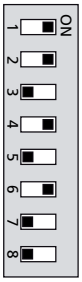
CONNECTION OF THE REVERSING VALVE MOTOR (EQ1-QN12)

Connect the reversing valve, cooling (QN12) to AA5-X9:2 (signal), AA5-X9:1 (N) and AA5-X10:2 (230 V).



DIP SWITCH

The DIP switch (S2) on the accessory board (AA5) must be set as follows.



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PROGRAM SETTINGS

Caution

The cooling function must be activated in the heat pump. See the Installer Manual for the relevant model.

Program setting of AXC 30 can be performed via the start guide or directly in the menu system.

START GUIDE

The start guide appears at first start-up after the heat pump installation, but it can also be found in menu 5.7.

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 5.2.4 -accessories

Activating/deactivating of accessories.

Select: "active cooling 4 pipe".

Menu 1.1 -temperature

Setting of indoor temperature (room temperature sensor is required).

Menu 1.9.3.2 - min. flow line temp.

You can set the min supply temperature for cooling here.

Menu 1.9.5 - cooling settings

Here you can perform the following settings:

- Desired flow temperature at an outdoor air temperature of +20 and +40 °C.
- Time between cooling and heating operation and vice versa.
- Selection of room sensor can control cooling.
- How much the room temperature may decrease or increase compared to the desired temperature before switching to heating respectively cooling (requires room sensor).
- Degree minute levels for cooling.

Menu 4.9.2 -auto mode setting

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

Select the average outdoor temperatures in this menu.

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

Menu 5.6 -forced control

Forced control of the different components in the heat pump as well as in the different accessories that may be connected.

EQ1-AA5-K1: Signal to reversing valve (QN12).

EQ1-AA5-K3: Signal cooling circulation pump (GP10).

Caution

Also see the Installer Manual for the main product.

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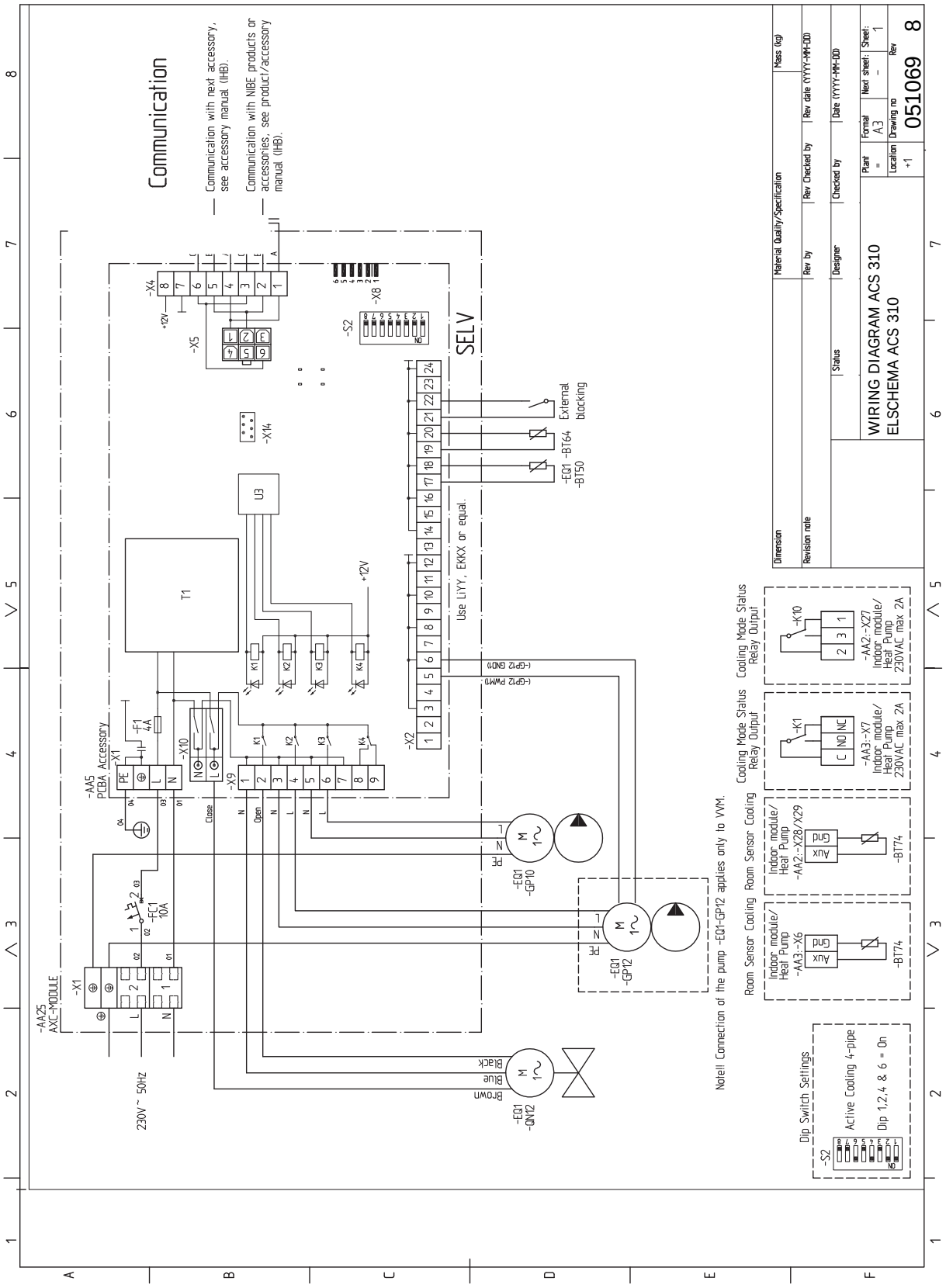


Pool heating

GENERAL

This function enables pool heating in your climate unit.

A reversing valve (CL11-QN19) is connected to control the heating medium supply to a pool exchanger. The reversing valve or, if required, the reversing valves (although with the same control signal), is/are installed on the heating medium circuit that normally goes to an underfloor heating/radiator system.

In systems with cascade connection you determine in the control system how many compressors are permitted to work with pool heating.

An external heating medium pump (AA25-GP10)is required for the climate system, when one or more pools are docked to the system, due to the fact that, during pool charging, it is the charge pump (AA25-GP12) that maintains the flow through the pool heat exchanger. The external heating medium pump (AA25-GP10) maintains the flow in the climate system, allowing the external supply temperature sensor (AA25-BT25) to measure the temperature correctly and allowing any additional heat to be connected if necessary.

The pool's circulation pump (CL11-GP9) circulates the pool water between the pool exchanger and the pool.

The control module controls the reversing valve (CL11-QN19), the pool circulation pump (CL11-GP9) and the external heating medium pump (AA25-GP10) via AXC 30.

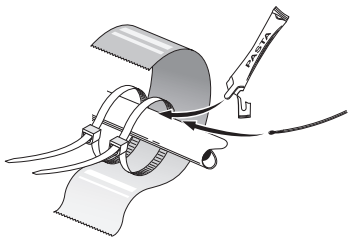
PIPE CONNECTIONS

REVERSING VALVE (CL11-QN19)

Install the reversing valve on the heating medium circuit, which normally runs to a radiator system. One port goes to the pool and one port goes to the heating system.

TEMPERATURE SENSOR

- The pool sensor (CL11-BT51) is placed on the return line from the pool.
- The external supply temperature sensor (AA25-BT25) is placed on the supply line to the climate system, before the external heating medium pump (AA25-GP10) .
- The external return line sensor (AA25-BT71) is placed on the return line from the climate system.



Install the temperature sensors using cable ties, together with the heat conducting paste and aluminium tape. Then insulate with the enclosed insulation tape.

NOTE

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

FUNCTION

Heating of the pool is prioritised according to selected settings in the control module. If the pool sensor (CL11-BT51) is not connected, pool charging is not permitted to start. The heating medium flow is adjusted so that the temperature difference across the pool heat exchanger is 10–15 °C. This setting is made in menu 5.1.11

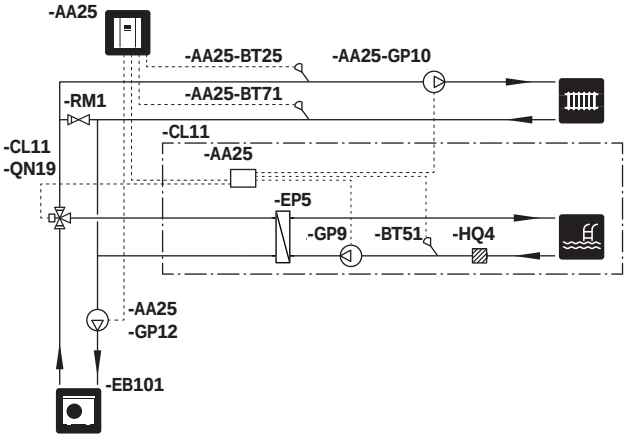
SYSTEM DIAGRAM

Caution

This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

CL11	**Pool heating**
AA25	AXC 30
QN19	Three way valve, pool
EP5	Pool heat exchanger
GP9	Circulation pump, pool circuit
BT51	Temperature sensor, pool
HQ4	Particle filter
EB101	**Heat pump**
AA25	**Control module**
GP10	External heating medium pump
BT25	External supply temperature sensor
BT71	External return line sensor
GP12	Charge pump
Miscellaneous	
RM1	Non-return valve



ELECTRICAL CONNECTION

NOTE

Read section "Common electrical connection" for instructions regarding electrical connection.

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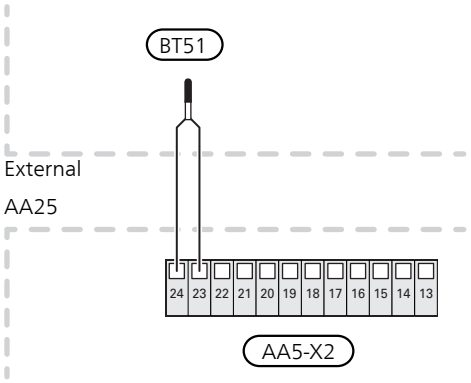
CONNECTION OF SENSORS AND EXTERNAL BLOCKING

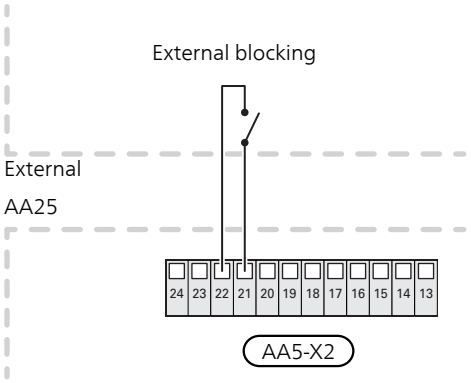
Pool sensor (CL11-BT51)

Connect the sensor to AA5-X2:23-24.



External blocking

A contact (NO) can be connected to AA5-X2:21-22 to block the accessory. When the contact closes, the accessory is blocked.



External supply temperature sensor (AA25-BT25)

Sensor (BT25) must be connected in the main product.

See the Installer Manual for the main product.

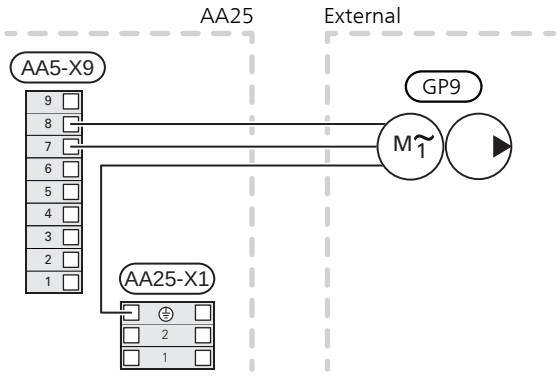
External return line sensor (AA25-BT71)

Sensor (BT71) must be connected in the main product.

See the Installer Manual for the main product.

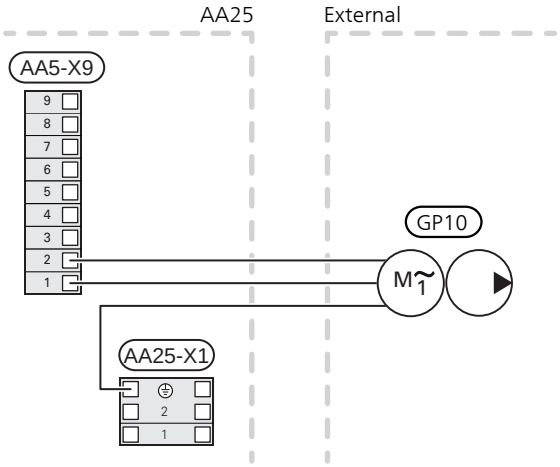
CONNECTING THE CIRCULATION PUMP, POOL (CL11-GP9)

Connect the circulation pump (GP9) to AA5-X9:7 (N), AA5-X9:8 (230 V) and X1:3 (PE).



CONNECTING THE HEATING MEDIUM PUMP, CLIMATE SYSTEM (AA25-GP10)

Connect the external heating medium pump (GP10) to AA5-X9:2 (230 V), AA5-X9:1 (N) and X1:3 (PE).



Caution

The charge pump ((AA25-GP12) is connected in the control module. See the control module's Installer Manual to connect the charge pump.

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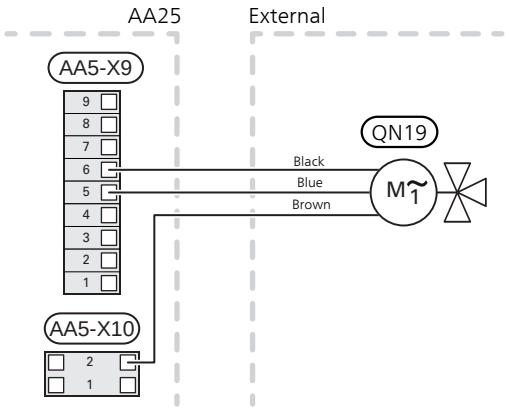
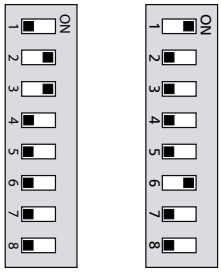
CONNECTION, REVERSING VALVE MOTOR (CL11-QN19)

Connect the reversing valve (QN19) to AA5-X9:5, X9:6 and AA5-X10:2 in the AXC module (AA25).



DIP SWITCH

The DIP switch on the accessory card must be set as follows.



PROGRAM SETTINGS

Program setting of AXC 30 can be performed via the start guide or directly in the menu system.

START GUIDE

The start guide appears at first start-up after the heat pump installation, but it can also be found in menu 5.7.

MENU SYSTEM

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

Menu 5.2.3 docking

Setting the system docking.

Menu 5.2.4 -accessories

Activating/deactivating of accessories.

Menu 4.1.1 - pool

Activating pool heating and setting start and stop temperature.

Menu 5.1.11 - pump speed heating medium

Setting heating medium pump's speed.

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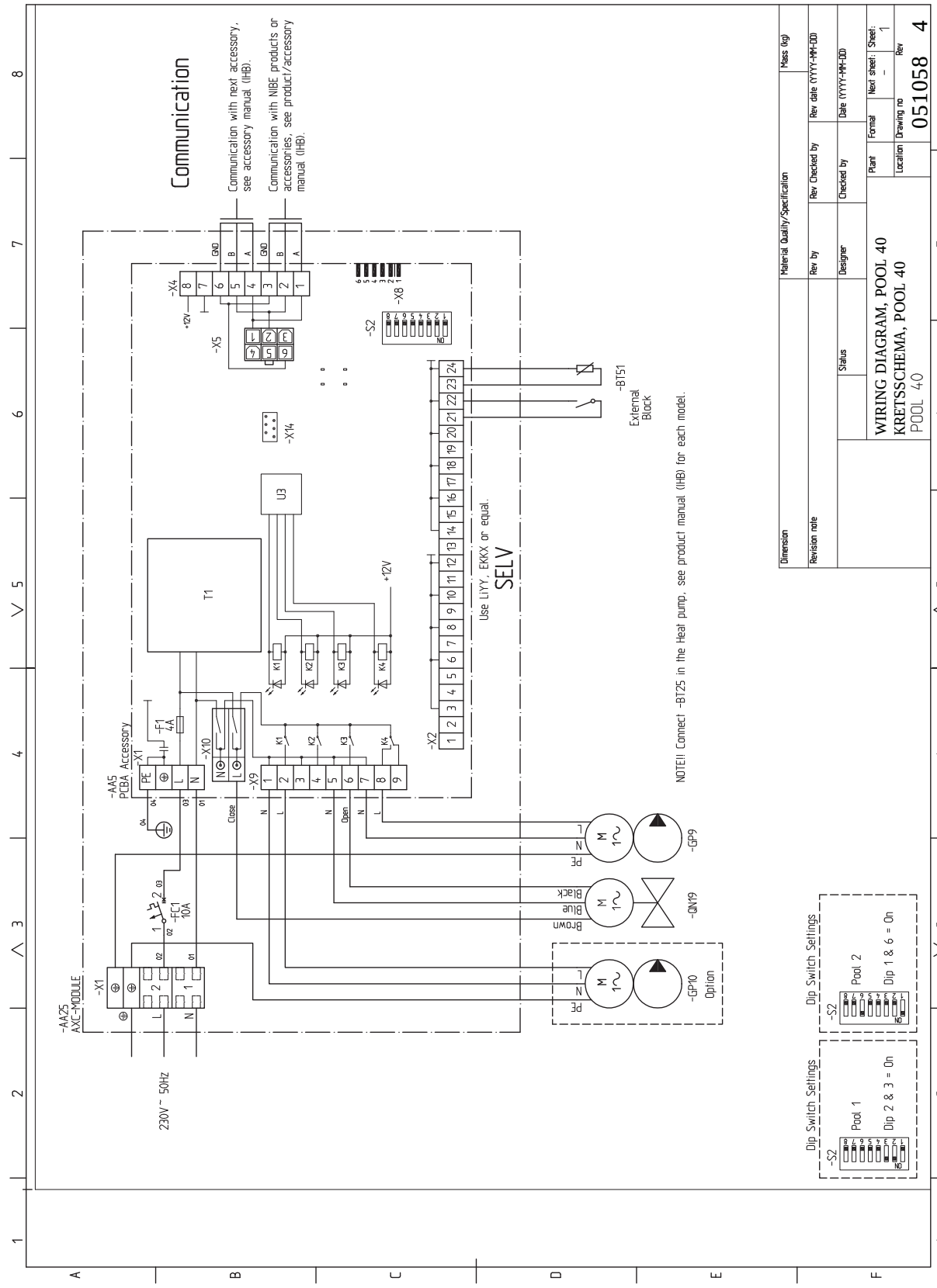

Communication
Communication with next accessory, see accessory manual (IHB).
Communication with NIBE products or accessories, see product/accessory manual (IHB).
-AA25 AXC-MODULE
-AA5 PCBA Accessory
-X1
-X2
-X4
-X5
-X8
-X9
-X10
-X14
-S2
-F1 4A
-FC1 10A
T1
U3
K1
K2
K3
K4
+12V
230V~ 50Hz
Use LiYY, EKKX or equal.
SELV
-BT51 External Block
NOTE!! Connect -BT25 in the Heat pump, see product manual (IHB) for each model.
-GP9
-GN19
-GP10 Option
Brown
Blue
Black
Dip Switch Settings
Pool 1
Dip 2 & 3 = On
Pool 2
Dip 1 & 6 = On
WIRING DIAGRAM, POOL 40
KRETSSCHEMA, POOL 40
POOL 40
051058 4

Connecting charge pumps in the case of multiple heat pumps

GENERAL

This function allows control of up to two extra charge pumps (GP12). AXC 30 is required for the charge pump for slave - EB10X, with address 3 or higher. Up to eight slaves can be combined in one system.

AA25-EB10X-GP12.X corresponds to AA25-EB103-GP12.3, AA25-EB105-GP12.5 and AA25-EB107-GP12.7.

AA25-EB10Y-GP12.Y corresponds to AA25-EB104-GP12.4, AA25-EB106-GP12.6 and AA25-EB108-GP12.8.

The control module controls the charge pumps together with the relevant slave during heating, hot water or cooling operation via AXC 30.

A type CPD charge pump is recommended to allow the use of speed control, which guarantees correct delta-t in the various operating modes during the year. AXC 30 also enables external blocking of each associated slave.

PIPE CONNECTIONS

The charge pump (GP12) is positioned in the relevant charge circuit before joining with other charge circuits or branching off different sub-systems via a reversing valve.

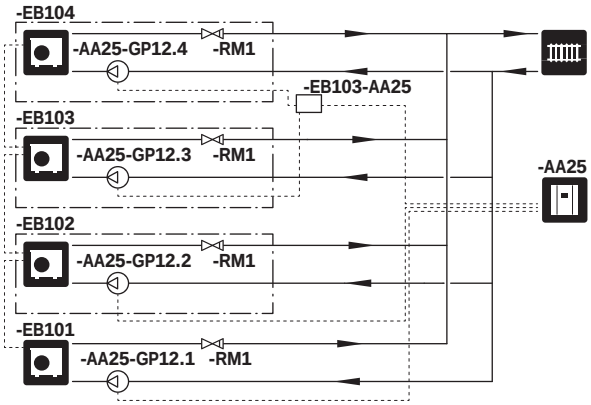
SYSTEM DIAGRAM

Caution

This is an outline diagram. Actual installations must be planned according to applicable standards.

EXPLANATION

EB101-EB104	**Heat pump**
AA25	AXC module
GP12.1-GP12.4	Charge pump
RM1	Non-return valve
AA25	**SMO 40**



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ELECTRICAL CONNECTION

NOTE

Read section "Common electrical connection" for instructions regarding electrical connection.

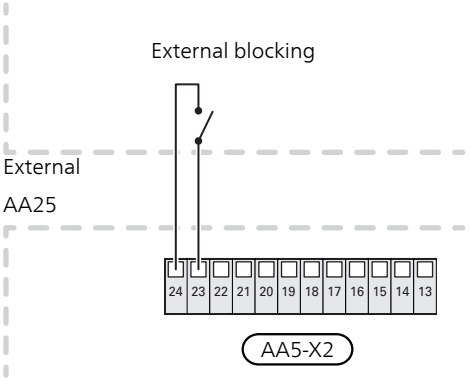
CONNECTION OF EXTERNAL BLOCKING

External blocking (optional)

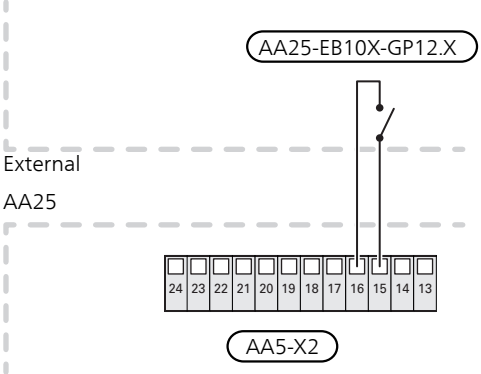
A contact (NO) can be connected to AA5-X2:23-24 to block the accessory. When the contact closes, the accessory is blocked.

Caution

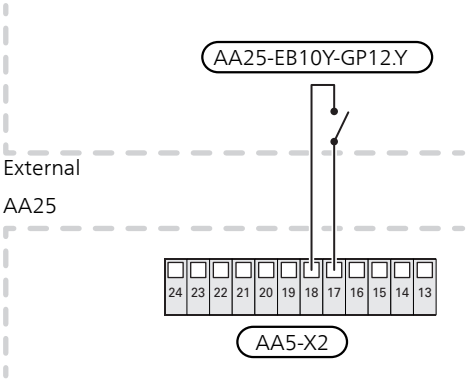
The relay outputs on the accessory board can have a max load of 2 A (230 V) in total.



An additional switch can be connected to AA5-X2:15-16 to allow blocking of the accessory function. When the switch closes, the accessory function AA25-EB10X-GP12.X is blocked.



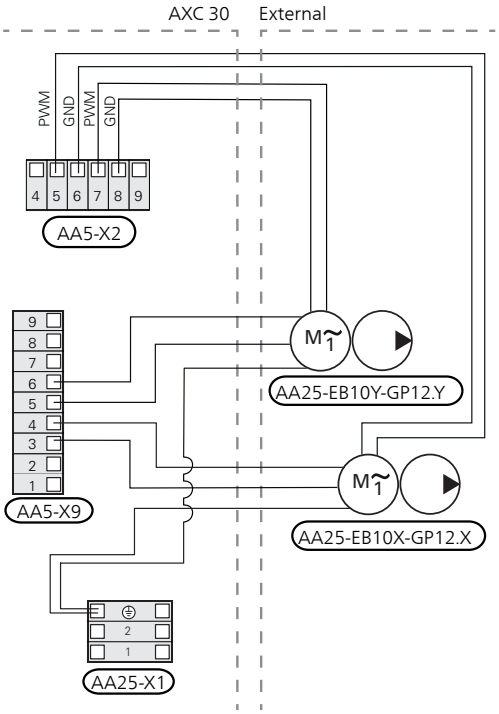
An additional switch can be connected to AA5-X2:17-18 to allow blocking of the accessory function. When the switch closes, the accessory function AA25-EB10Y-GP12.Y is blocked.



CONNECTION OF THE CIRCULATION PUMP (GP12)

Connect the circulation pump (AA25-EB10X-GP12.X) to AA5-X9:4 (230 V), AA5-X9:3 (N) and X1:3 (PE). Connect the control signal for the circulation pump (AA35-GP12) to AA5-X2:5 (PWM) and AA5-X2:6 (GND).

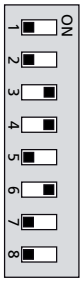
Connect the circulation pump (AA25-EB10Y-GP12.Y) to AA5-X9:6 (230 V), AA5-X9:5 (N) and X1:3 (PE). Connect the control signal for the circulation pump (AA35-GP12) to AA5-X2:7 (PWM) and AA5-X2:8 (GND).



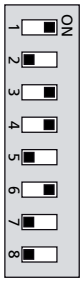
DIP SWITCH

The DIP switch (S2) on the accessory board (AA5) must be set as follows for the relevant circulation pump (GP12).

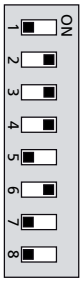
3-4



5-6



7-8



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PROGRAM SETTINGS

Program setting of multi-installation during operation of several heat pumps can be performed via the start guide or directly in the menu system.

The start guide appears upon first start-up after heat pump installation, but is also found in menu 5.7.

If you do not make all settings via the start guide or need to change any of the settings, this can be done in the menu system.

MENU 5.11.1 - EB103 - 5.11.8 - EB104

Make settings for the installed slaves here.

Menu 5.11.1.2 - charge pump (GP12)

op. mode

Heating/cooling

Setting range: auto / intermittent

Default value: auto

Set the operating mode for the charge pump here.

auto: The charge pump runs according to the current operating mode for AXC 30.

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

speed during operation

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.

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.

MENU 5.6 - FORCED CONTROL

Forced control of the different components in the heat pump as well as in the different accessories that may be connected.

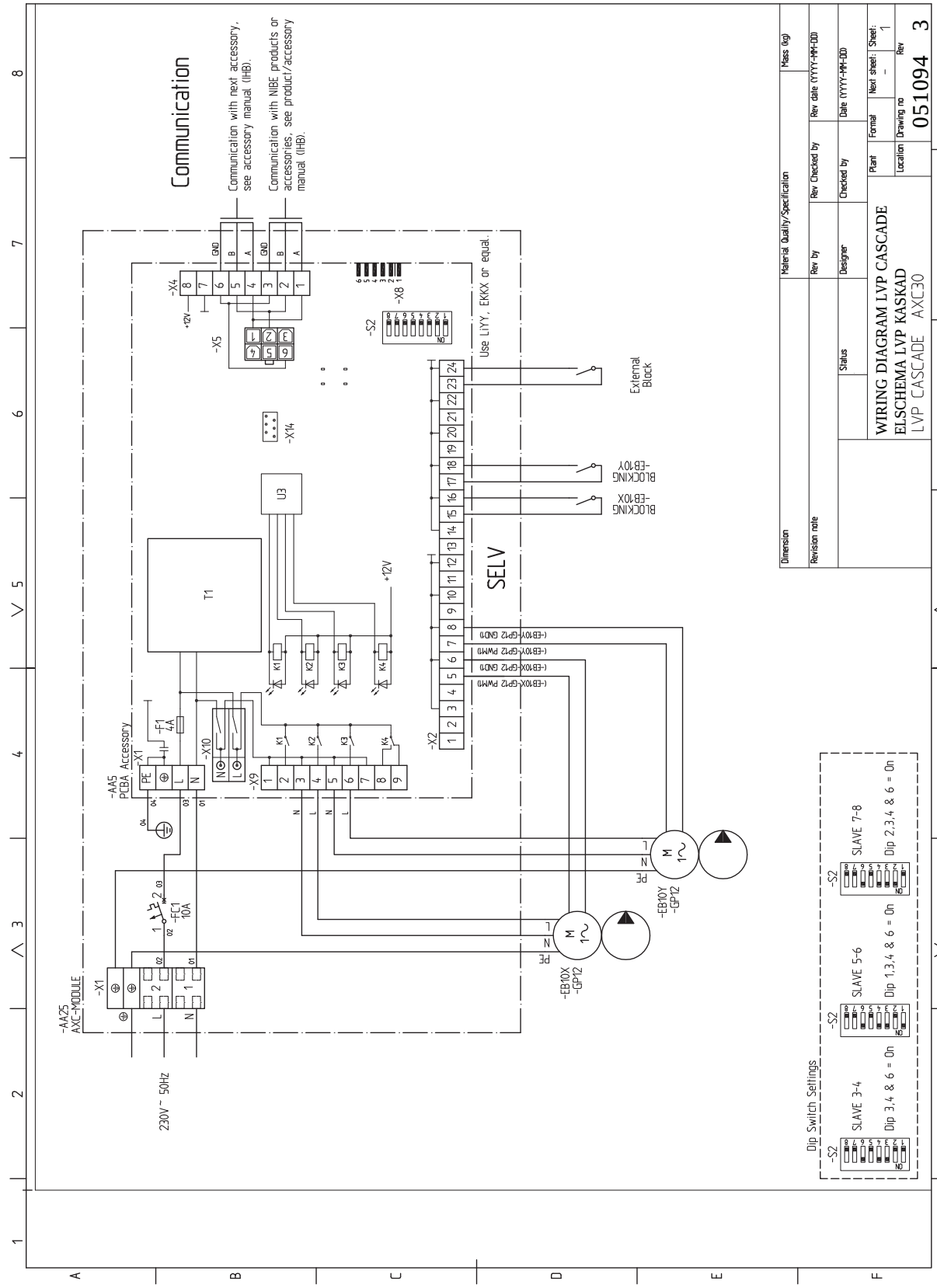
- Compressor speed 3
- EB103 - GP12 - AA5-K2
- Charge pump speed 3

- Compressor speed 4
- EB104 - GP12 - AA5-K3
- Charge pump speed 4

Caution

Also see the Installer Manual for the main product.

ELECTRICAL CIRCUIT DIAGRAM



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Technical data

TECHNICAL SPECIFICATIONS

AXC module		
Electrical data		
Rated voltage		230 V ~ 50 Hz
Enclosure class		IP21
Rated value for impulse voltage	kV	4
Pollution degree		2
Min fuse rating	A	10
Optional connections		
Max number of sensors		8
Max. number of outputs for charge pumps		3
Max. number of outputs for valves		2
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
Temperature during ball pressure test according to EN 60 730-1	°C	75
Dimensions LxWxH	mm	175x250x100
Weight	kg	1.47

AXC 30		
Part No.		067 304

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Contact information

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