SOLAR 42

LEK

English, Installer manual - SOLAR 42

General

With SOLAR 42, F1145/F1345 together with:

- VPAS can be connected to solar heating for hot water charging.
- VPBS (only F1145) is connected to solar heating for hot water charging.
- VPB/heater for hot water charging via heat exchanger.

The heat pump prioritises charging from the solar panel.

☞ **Caution**

This accessory may require a program software update in your F1145/F1345.

1031 or higher is the minimum software version for the pump.

☞ **Caution**

The water from the solar panel can reach high temperatures. The hot water side must be supplied with a mixing valve.

Contents

4 x	Cable ties
1 x	Unit box (comprising AA5, FA1 and X1).
2 x	Heating pipe paste
1 x	Aluminium tape
1 x	Insulation tape
1 x	Temperature sensor (BT54), black
1 x	Temperature sensor, high temp (BT53), transparent

Component positions
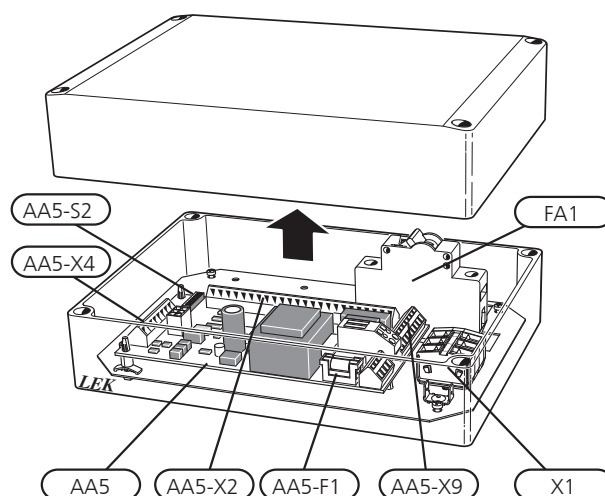
Electrical components

FA1	Miniature circuit-breaker. 10A
X1	Terminal block, power supply
AA5	Accessory card
AA5-X2	Terminal block, sensors and external blocking
AA5-X4	Terminal block, communication
AA5-X9	Terminal block, circulation pump, mixing valve and auxiliary relay
AA5-S2	DIP switch
AA5-F1	Fine wire fuse, T4AH250V

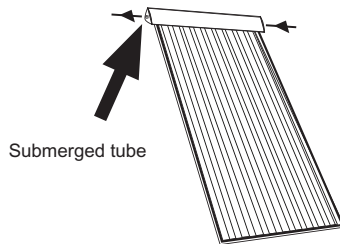Designations in component locations according to standard IEC 81346-1 and 81346-2.
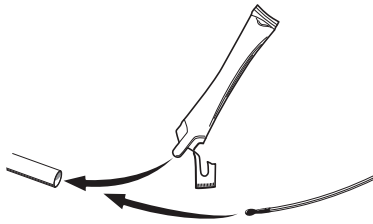
Pipe connections

Charge pump
- Place the charge pump (GP4) on the return line to the solar panel according to the outline diagram.

Temperature sensor
- Sensor, solar panel (BT53) is placed in the solar panel's submerged tube by the outlet from the solar panel.

Submerged tube

- Sensor, solar coil (BT54) is positioned in submerged tube UA3 (VPBS).

Install the temperature sensors with cable ties with heat conducting paste.

> ⚠ **NOTE**
>
> Sensor and communication cables must not be placed near power cables.

> ⚠ **NOTE**
>
> See manual for VPBS for more information.

Suitable flows/solar panel area

Recommended flow is 50 l/h per m² solar panel area.

Outline diagram

Explanation

EB1   External additional heat

CM5	Expansion vessel, closed
EB1	External electrical additional heat
FL10	Safety valve, heating medium side
QM42 - QM43	Shut-off valve, heating medium side
RN11	Trim valve

EB100   Heat pump system

BT1	Temperature sensor, outdoor
BT6	Temperature sensor, hot water
BT25	Temperature sensor, external flow line
BT71	Temperature sensor, external return line
EB100	Heat pump
EP14	Cooling module A
EP15	Cooling module B
FL10 - FL11	Safety valve, collector side
FL12 - FL13	Safety valve, heating medium side
HQ1	Particle filter
HQ12 - HQ15	
QM50 - QM53	Shut-off valve, brine side
QM54 - QM57	Shut-off valve, heating medium side
QN10	Reversing valve, heating/hot water
RM10 - RM13	Non-return valve

EP30   SOLAR 42

AA5	Accessory card
BT53	Sensor, solar panel
BT54	Sensor, solar coil

GP30   Pump station

FL4	Safety valve, solar
GP4	Circulation pump, solar
QM43 - QM45	Shut-off valve
RM3 - RM4	Non-return valve

QZ1   Hot water comfort

|	
AA5	Accessory card
BT70	Temperature sensor, hot water flow
FQ1	Mixer valve, hot water
GP11	Circulation pump, domestic hot water circulation
RM23	Non-return valve
RN20	Trim valve

Miscella-
neous

|	
BP6	Manometer, brine side

CM1, CM5	Expansion vessel, heating medium side
CM2	Level vessel
CM3	Expansion vessel, brine side
CP10	Accumulator tank with solar coil
CP20	Buffer vessel
EB10	Water heater
EP8	Solar panel
EP12	Ground-source heating/Ground collector
FL2	Safety valve, heating medium
FL3	Safety valve, brine
GP10, GP18	Circulation pump, heating medium external
QM12	Filler valve, brine
QM21	Venting valve, brine side
QM31	Shut-off valve, heating medium flow
QM32	Shut off valve, heating medium return
QM33	Shut off valve, brine return
QM34	Shut off valve, brine flow
QM42	Shut-off valve
RM21	Non-return valve
XL15	Filling set, brine
XL27 - XL28	Connection, filling brine

Designations in component locations according to standard IEC 81346-1 and 81346-2.

Outline diagram F1145 with VPBS and SOLAR 42
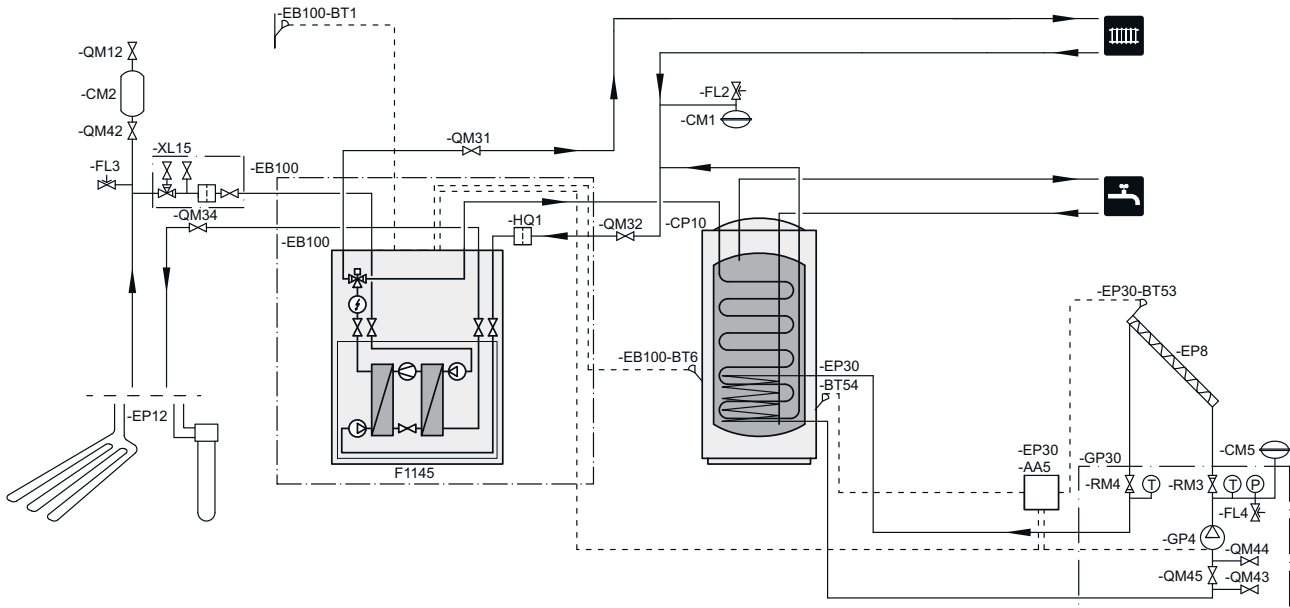
Outline diagram F1345 with VPAS and SOLAR 42
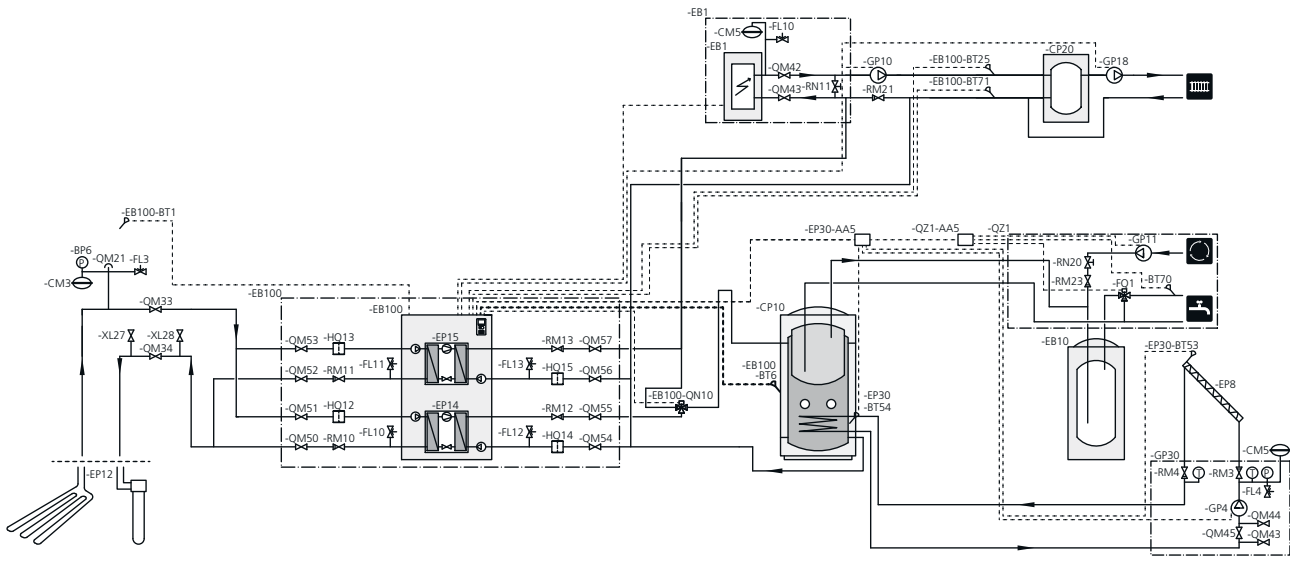
Electrical connection

⚠️ **NOTE**

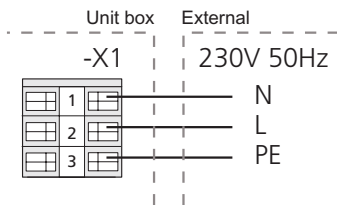All electrical connections must be carried out by an authorised electrician.

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

The heat pump must not be powered when installing SOLAR 42.

The electrical circuit diagram is at the end of this Installer handbook.

Connecting the supply

Connect the power supply to terminal block X1 as illustrated.

```
        Unit box    External
        -X1      ¦   230V 50Hz
      ┌──┬─┐     ¦
      │  │1│────────────── N
      ├──┼─┤     ¦
      │  │2│────────────── L
      ├──┼─┤     ¦
      │  │3│────────────── PE
      └──┴─┘     ¦
```

Connecting communication

This accessory contains an accessory card (AA5) that must be connected directly to the heat pump on the input card (terminal block AA3-X4) in F1145 or on terminal block X6 in F1345.

If several accessories are to be connected or are already installed, the following instructions must be followed.

The first accessory card must be connected directly to the input card's terminal block (AA3-X4) in F1145 or on terminal block X6 on F1345. The following cards must be connected in series with the previous card.

Use cable type LiYY, EKKX or similar.
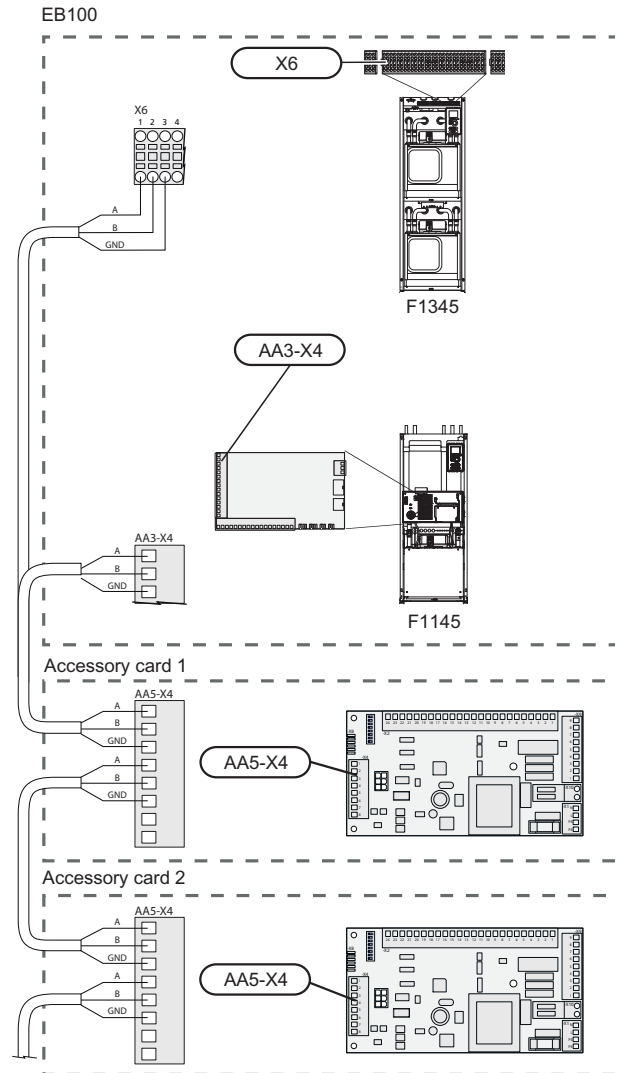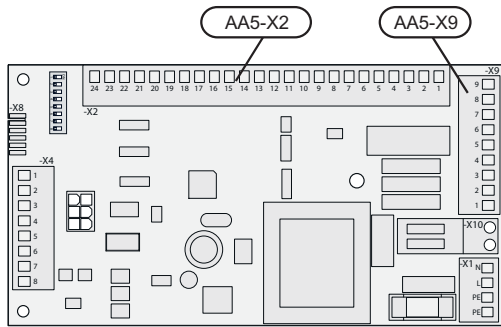
> **☞ Caution**
>
> The relay outputs on the accessory card can have a max load of 2 A (230 V) in total.

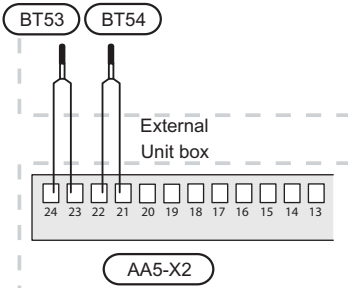## Connecting sensors

Use cable type LiYY, EKKX or similar.

Sensor, solar panel (BT53)

Connect the sensor (solar panel) to AA5-X2:23-24.

> **☞ Caution**
>
> Sensor cable splicing must fulfil IP54.
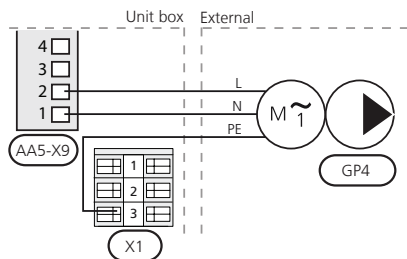
Sensor, solar coil (BT54)

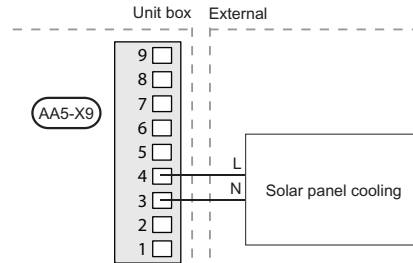Connect the sensor (solar coil) to AA5-X2:21-22.

Connection of the circulation pump (GP4)

Connect the circulation pump (GP4) to AA5-X9:2 (230 V), AA5-X9:1 (N) and X1:3 (PE).
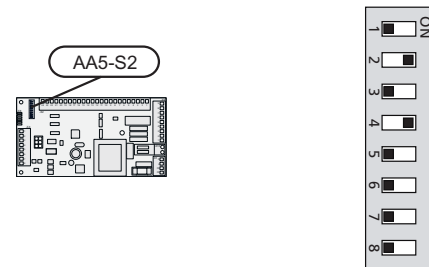

Connecting solar panel cooling

Connect solar panel cooling (if applicable) to AA5-X9:3 (N) and AA5-X9:4 (230 V).

DIP switch

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

Program settings

Program setting of SOLAR 42 can be performed via the start guide or directly in the menu system.

☞ **Caution**

Also see the Installer manual for F1145/F1345.

☞ **Caution**

This accessory may require a program software update in your F1145/F1345.

1031 or higher is the minimum software version for the pump.

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 - system settings[1]

Activating/deactivating of accessories.

Select: solar heating

1) Applies to NIBE F1145.

Menu 5.2.4 - accessories[2]

Activating/deactivating of accessories.

Select: solar heating

2) Applies to NIBE F1345.

Menu 5.3.4 - solar heating

Settings for solar heating.

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.

EP30-AA5-K1: Activating the circulation pump (GP4).

EP30-AA5-K2: Activating solar panel cooling.

EP30-AA5-K3: Signal to three way valve (QN23).

EP30-AA5-K4: No function.