BRINK

Air for life

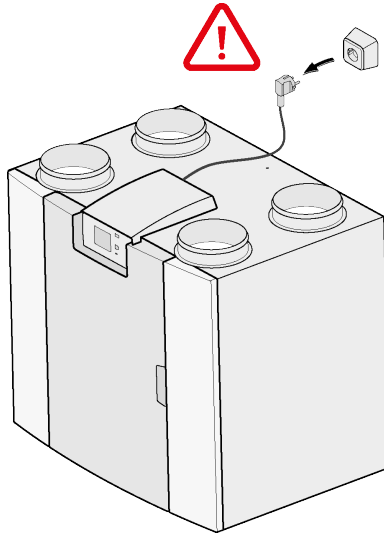# Installation regulations

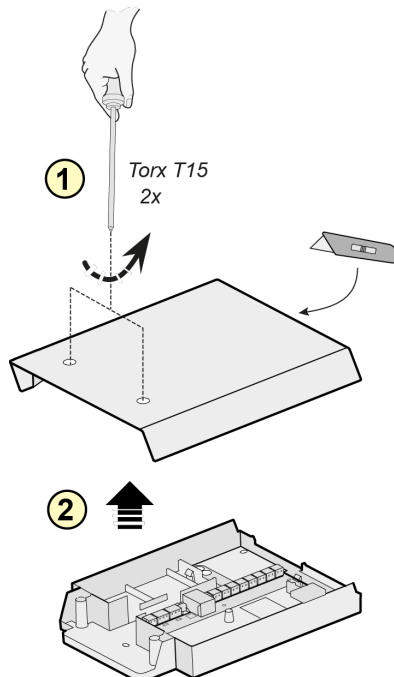PCB UWA-2E
English

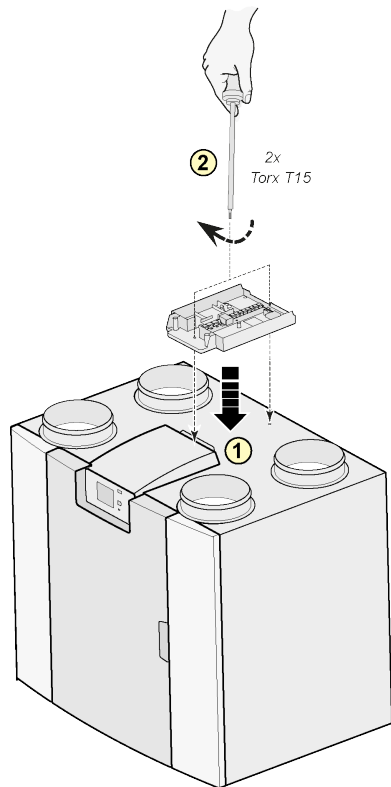# 1 Installation
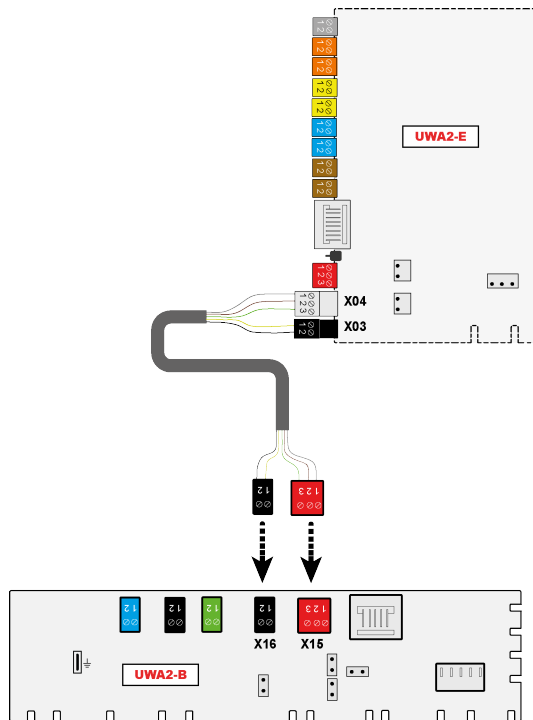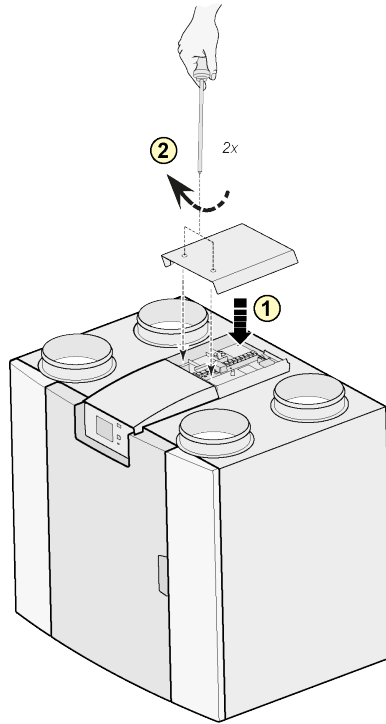
1

2

Torx T15
2x

3

2x
Torx T15

Mounting is also possible against the wall in the installation room. An extra long connection cable is included with the Plus print extension set for this setup.
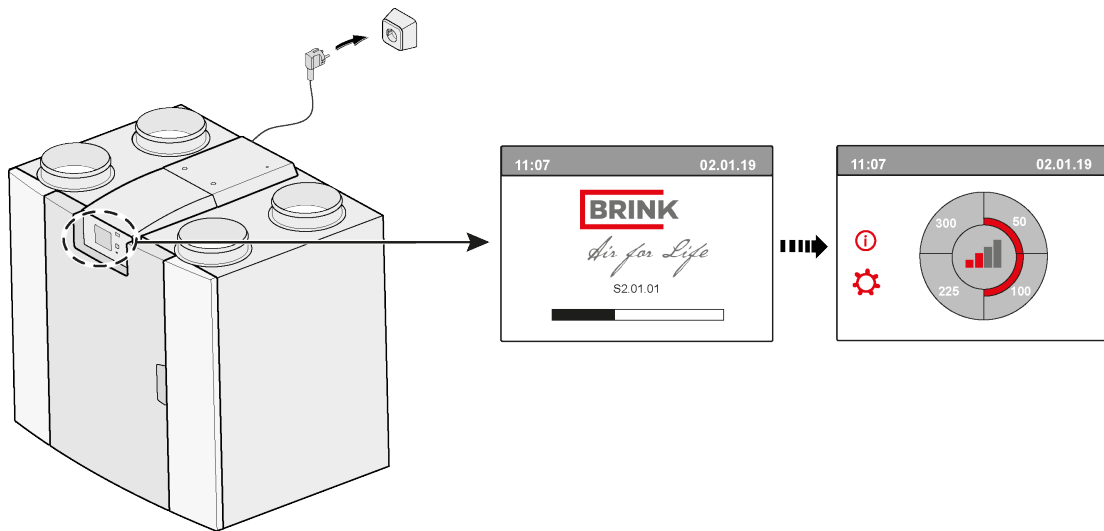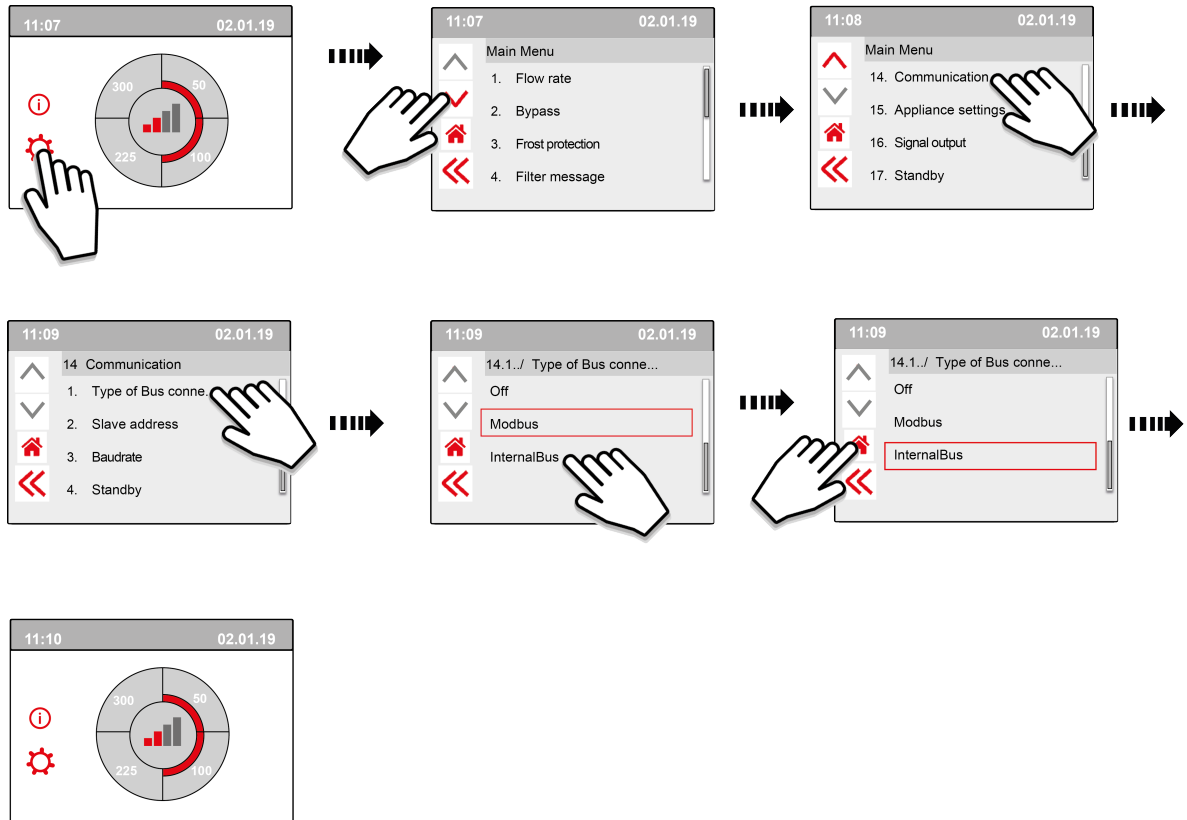
4

UWA2-E

X04
X03

X16   X15

UWA2-B

5

6

11:07 02.01.19

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S2.01.01

11:07 02.01.19

300 50
225 100

7 ⚙ **14.1 Modbus → InternalBus**

11:07 02.01.19	11:07 02.01.19	11:08 02.01.19
ⓘ ⚙	Main Menu 1. Flow rate 2. Bypass 3. Frost protection 4. Filter message	Main Menu 14. Communication 15. Appliance settings 16. Signal output 17. Standby

11:09 02.01.19	11:09 02.01.19	11:09 02.01.19
14 Communication 1. Type of Bus conne... 2. Slave address 3. Baudrate 4. Standby	14.1../ Type of Bus conne... Off Modbus InternalBus	14.1../ Type of Bus conne... Off Modbus InternalBus

11:10   02.01.19
ⓘ ⚙

8

✓

📖ⓘ https://www.brinkclimatesystems.nl/nl-nl/international/home/docsearch

2 Electrical connections
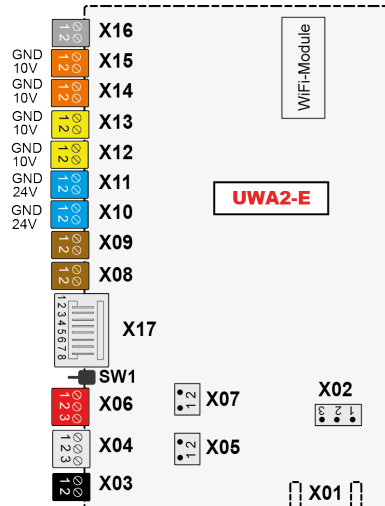
UWA-2E			
Connection	**Nr. Poles**	**Colour**	**Description**
X01	20-P	white	Inapplicable; only for factory purpose
X02	3-P	-	Inapplicable; only for factory purpose
X03	2-P	black	24 Volt (1= ground, 2 = 24V) – Power input
X04	3-P	light grey	InternalBus
X05	2-P	-	RS485 terminator
X06	3-P	red	ModBus (1= gnd, 2=RS485 A , 3 = RS485 B)
X07	2-P	-	RS485 terminator
X08	2-P	brown	Contact input 1
X09	2-P	brown	Contact input 2
X10	2-P	blue	Relay output 1 - Can be used to switch an external device on and off/ The output must be protected to drive a relay coil
X11	2-P	blue	Relay output 2 - Can be used to switch an external device on and off/ The output must be protected to drive a relay coil
X12	2-P	yellow	Analogue input 1 (0V - 10V)
X13	2-P	yellow	Analogue input (0V - 10V)
X14	2-P	orange	Analogue output 2 (0V- 10V)
X15	2-P	orange	Analogue output (0V - 10V)
X16	2-P	dark grey	NTC (10k) - This extra sensor can be used to measure the outside temperature for the control of the geothermal heat exchanger.
X17	8-P	metal coloured	LAN

The dip switches mounted on the UWA2-E currently have no function.

3 Usage

3.1 Connector X01

Inapplicable; only for factory purpose

3.2 Connector X02

Inapplicable; only for factory purpose

3.3 Connector X03 – Power input

The input must be protected against a wrong connection.

1. = Gnd
2. = 24V / 200mA

3.4 Connector X04 – RS485: InternalBus

This connector is used for communicating with other main devices of ventilation units supporting the InternalBus. InternalBus is a communication channel to exchange data and sending control commands between Plus PCB and main PCB.

1. = Gnd
2. = InternalBus – RS485 A
3. = InternalBus – RS485 B

3.5 Connector X05 – RS485 Terminator

This are two pins for supporting a jumper. If the jumper is placed over pins 1 and 2 a terminator resistor (120 Ohm) is placed over lines A and B of the RS485 InternalBus interface (X04).
Default this jumper is in place.

3.6 Connector X06 – RS485 ModBus

The connection is RS485 and will be used as a ModBus interface, supporting the ModBus protocol (RTU) to connect to a ModBus network. The RS485 interface should support speeds up to 1Mbit/sec.

1. Gnd - RS 485
2. ModBus - RS485 A
3. ModBus - RS485 B

For correct setting, see the installation instructions for the appliance in question.

3.7 Connector X07 – RS485 Terminator

This are two pins for supporting a jumper. If the jumper is placed over pins 1 and 2 a terminator resistor (120 Ohm) is placed over lines A and B of the RS485 ModBus interface (X06). Default this jumper is not in place; the jumper is placed only on pin 1.

3.8 Connector X08 & X09 - Contact input 1 & 2

To these connections an external switch can be connected.
These components can supply a make or a break contact. An example of an external component is the pressure sensor for detecting a fireplace, fire damper, etc.
The input should be a potential-free switch.

1. = SW (Gnd)
2. = SW

For each switch contact it must be indicated:

A. **Which control should be used?**
B. **What action should be performed by the supply fan?**
C. **What action should be performed by the exhaust fan?**

A) Control
When a make or break contact is made (*step 9.1 for connector X08 en step 9.5 for connector X09 in menu setting values*), the appliance must make one of the following adjustments (*step 9.2 for connector X08 en step 9.6 for connector X09 in menu setting values*):

1. Off
2. On
3. Comply with bypass conditions
4. Open the bypass valve
5. Open external valve

B) Supply fan action
When the control is activated, the supply fan must run on one of the following settings, which the user can set (*step 9.3 for connector X08 en step 9.7 for connector X09 in menu setting values*):

1. Fan off
2. Fan runs at absolute minimum
3. Fan according to setting 1
4. Fan according to setting 2
5. Fan according to setting 3
6. Fan according to multiple switch
7. Fan runs at absolute maximum

C) Exhaust fan action
When the control is activated, the exhaust fan must run on one of the following settings, which the user can set:
(*step 9.4 for connector X08 en step 9.8 for connector X09 in menu setting values*):

1. Fan off
2. Fan runs at absolute minimum
3. Fan according to setting 1
4. Fan according to setting 2
5. Fan according to setting 3
6. Fan according to multiple switch
7. Fan runs at absolute maximum

3.9 Connector X10 & X11 - Relay output 1 & 2

This connection is defined as an output and could drive a 24V DC relay with a maximum continue power of 60 mA.
It can be used to switch an external device on and off.
The output must be protected to drive a relay coil.
Output: frequency < 10 Hz.

1. Gnd
2. Relay output 24V - 60 mA

The function is identical to connector X19 of the basic board UWA2-B.
This connection is used to give a fault message. If a fault message is given in the appliance a contact is closed at connection X19.
(*The operation of X19 on the UWA2-B (basic board) is set by step number 16.1.*)

3.10 Connector X12 & X13 - 0–10V input 1 & 2

These connections are an analog input. They will measure the output voltage of a connected device in the range 0V till 10V. The resolution is 0.1V, the accuracy must be +/- 0.1V or better. Response time max. 1 second (time to settle).

1. Gnd
2. V_{in}

The device must be able to communicate via 0-10V with external devices, such as a CO_2 sensor.
For this purpose, a component with a 0-10V output can be connected to one of the two 0-10V inputs X12 or X13 of the extension board. A minimum and maximum voltage must be entered in the settings menu between which the appliance must respond proportionally.

For each switch contact it must be indicated

1. **Mode**
2. **Minimum and maximum voltage**

1. Mode
There are two mode setting possible (*step 10.1 for connector X12 and step 10.4 for connector X13 in menu setting values*).

1. On
2. Off

2. Minimum and maximum voltage

1. Minimum voltage between 0V & 10V
   (*step 10.2 minimum voltage for connector X12 and step 10.5 minimum voltage for connector X13*)
2. Maximum voltage between 0V & 10V
   (*step 10.3 maximum voltage for connector X12 and step 10.6 maximum voltage for connector X13*)

3.11 Connector X14 & X15 - 0–10V output 1 & 2

These connections are an analog output. They can be used to control a device which requires a control signal in the range from 0 or 10V. The resolution is 0.1V. Response time < 1 second (time to settle). Maximum 20mA.

1. Gnd
2. V_{ou}

This output must be protected against short circuit.

For example: The appliance can give a signal on the outputs 0-10V when 0-10V control has been selected for the geothermal heat exchanger

3.12 Connector X16 - NTC 10k

To this input a 10K NTC sensor is connected. This connection uses an analog input on the processor. It must be possible to measure with a resolution of 0.1 degrees in the range of -20.0 till +60.0 °C. Precision +/- 0.5 °C or better.

1. NTC (Gnd)
2. NTC

3.13 Connector X17 LAN connection

This connector is a standard LAN connection. The interface should support 100 Mbit/s.
Connector type: Shielded RJ45 - 8 poles

The appliance must be able to connect to a network via LAN X17 and with Brink Home.
The appliance must send some parameters to Brink Home via the LAN. The screen must also show that there is a connection via LAN and that there is a connection with Brink-Home.

If a user is not using a LAN, it should be off.

3.14 SW1 - Search button

This is a small switch which will be used to for identification of the module in a InternalBus network.
Switch type: Momentary push button Off – On.

3.15 WIFI & LAN

WIFI
Via the WiFi module on the UWA-2E, the device can make a wireless connection to a network and with Brink Home.

The appliance must send some parameters to Brink Home via the WiFi. It must also be visible on the screen that there is a connection via WLAN and that there is a connection with Brink-Home. If a user does not use WiFi, it must be switched off.

Log in with appliance with a display
When a user wants to register the device, the user must turn on WiFi via the device. The appliance with a display will immediately search for a network. The user must then enter the password.

LAN

The appliance connect to a network via LAN and automatically with Brink Home.

The appliance must send some parameters to Brink Home via the LAN. The screen must also show that there is a connection via LAN and that there is a connection with Brink-Home.

If a user is not using a LAN, it should be off.

3.16 Geo heat exchanger connecting example

A geo heat exchanger can be connected to the PCB UWA-2E.
Via the geo heat exchanger it is possible to preheat or cool the outside air, depending on the outside conditions and the status of the bypass valve.
For the geo heat exchanger function, two switching temperatures are required, a maximum temperature and a minimum temperature. These switching temperatures are adjustable; the maximum between 15 ° C and 40 ° C, the minimum between 0 ° C and 10 ° C.

The outside temperature for the geo heat exchanger is measured with an extra outside temperature sensor; connected to X16, that measures the outside temperature.
When the outside temperature falls below the minimum switching temperature, the external valve for the geo heat exchanger must be opened, so that the cold outside air flows through the geo heat exchanger.
The bypass valve will be closed.
When the outside temperature rises above the minimum switching temperature and remains below the maximum switching temperature, the external valve for the geothermal heat exchanger must be closed, so that the outside air does not flow through the geothermal heat exchanger. The bypass will be regulated according to the standard bypass conditions.

If the outside temperature exceeds the maximum switching point, the external valve for the geothermal heat exchanger must be opened so that the warm outside air flows via the geothermal heat exchanger.
The bypass valve will be open.
When the outside temperature falls below the maximum switching point with a hysteresis of 0.5 degrees Celsius, the external valve for the geo heat exchanger must be closed. The bypass will be regulated according to the standard bypass conditions.

A high-low signal (10V - 0V) or a relay output (24V - 0V) is used to control the external valve.
For example: High signal is valve open, low signal is valve closed (adjustable setting).

A geo heat exchanger can be connected to 2-pole connection X03-1 (GND) and X03-1 (+).
Connect the outdoor temperature sensor to connector X16.
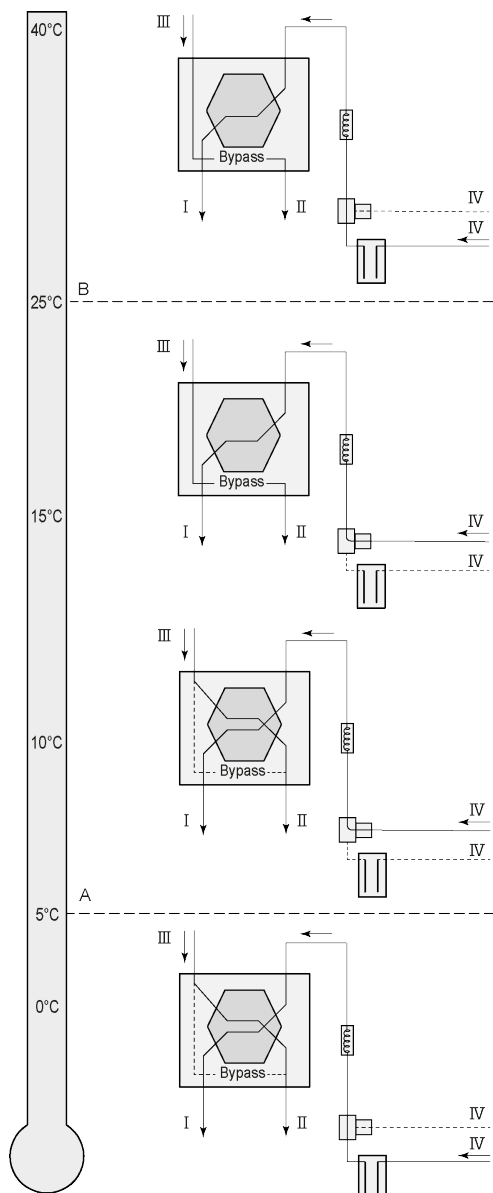
Depending on the type of valve the geo heat exchanger can be connected to different connection of the Plus PCB:
X10 no. 1 & 2 - Relay output 1 (Factory setting)
X11 no. 1 & 2 - Relay output 2
X14 no. 1 & 2 - Analogue output 1 (0 - 10 V)
X15 no. 1 & 2 - Analogue output 2 (0 - 10 V)

Connect the outdoor temperature sensor to no. 1 and no. 2 of the 2-pole connectorX-16.

A = Min. temperature
B = Max. temperature

I = To dwelling
II = To outside
III = From dwelling
IV = From outside

When using a geo heat exchanger, parameter 11.1 must be changed from "OFF" to "ON".

Step No.	Description	Factory setting	Range
11.1	Switching on and off	Off	On/ off
11.2	Switch temperature 1	5°C	0.0 °C / 10.0 °C
11.3	Switch temperature 2	25°C	15.0°C / 40.0 °C
11.4	Mode valve 10 volt control	Closed	Open / Closed
11.5	Valve control	Relay output 1	Relay output 1/Relay output 2/ Analogue output 1/Analogue output 2

4 Connecting with Brink Home

Compatibility

Please consult the serial number of the ventilation unit and the following table to check if the unit is supported.
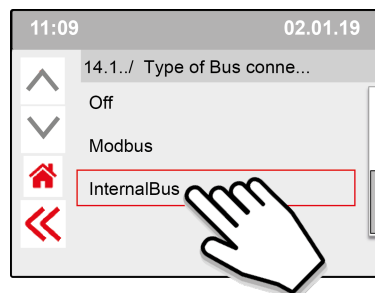
Serial number Flair
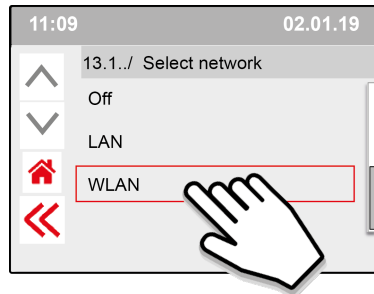
4xxxxx2005xx

Version ID   *Year*   *Week*   *Unit nr.*

Serial number	Compatibility
4xxxxx2050xx (or later)	**Always supported**
4xxxxx2049xx - **4xxxxx1904xx**	**Supported after software update** Note! Software should only be updated by installer.
4xxxxx1903xx (or earlier)	**Not supported** (Hardware main PCB not compatible)

Set up

1 Set Type of Bus connection to InternalBus (Menu 14.1)

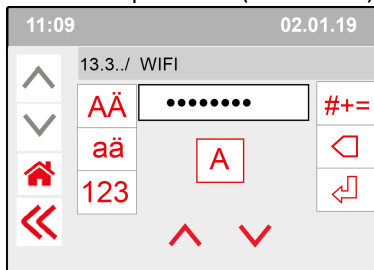**2** Set type of connection Wi-Fi or LAN (Menu 13.1)

11:09	02.01.19
13.1../ Select network	
Off	
LAN	
WLAN	

Wi-Fi

Enter SSID (Menu 13.2)

11:09	02.01.19
13.2../ WIFI SSID	
AÄ	Brink-Guests	#+=
aä	A	◁
123		↵

Enter SSID password (Menu 13.3)

11:09	02.01.19
13.3../ WIFI	
AÄ	••••••••	#+=
aä	A	◁
123		↵
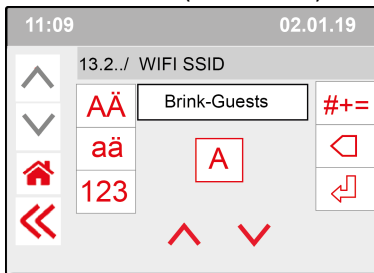
LAN

Go directly to step number 3 -
Enter and confirm Brink Home Password

Wi-Fi specifications

- 802.11 b/g/n/e/i
- 802.11 n (2.4 GHz)
- Wi-Fi Protected Access (WPA)/WPA2/WPA2-
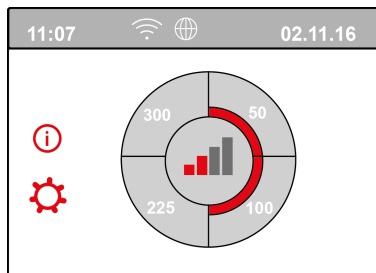 Enterprise/Wi-Fi Protected Setup (WPS)
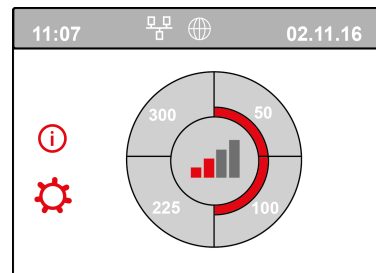
3 Enter and confirm Brink Home password
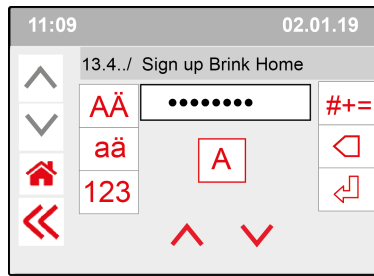
Password requirements:
At least 8 characters, with at least one lower-case and one upper-case letter as well as one number or special character.
Same password is required in step 5

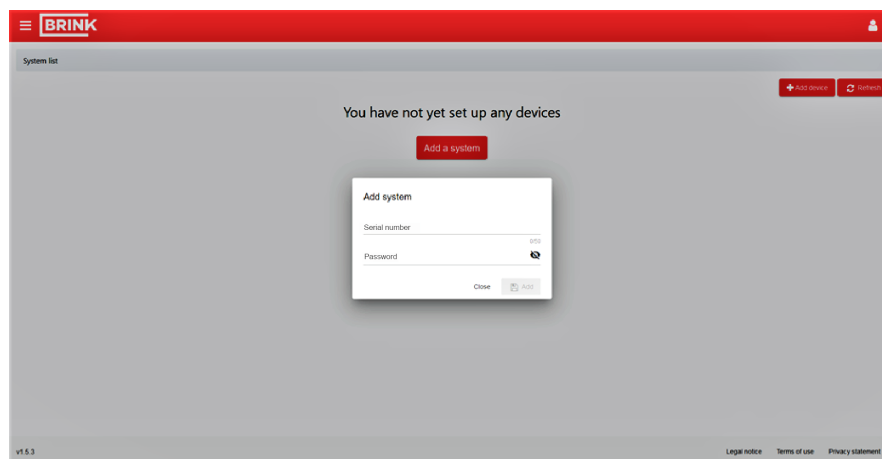**4** Check connection in Main menu (could take a couple of minutes).

Successful connection Wi-Fi

Successful connection LAN

5 Register account and unit in the Brink Home Portal (www.Brink-home.com)

614980-B