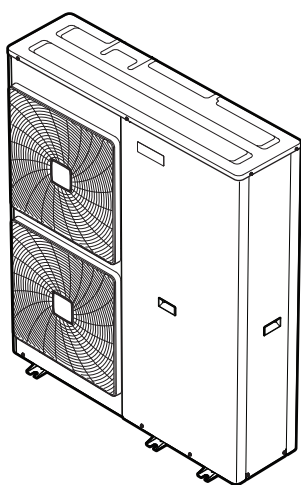


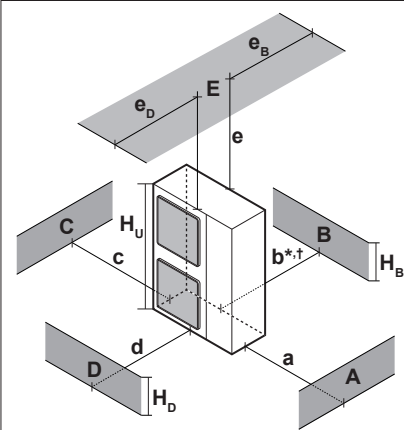
Installation manual

Daikin Altherma low temperature monobloc



EBLQ011CA3V3
EBLQ014CA3V3
EBLQ016CA3V3
EBLQ011CA3W1
EBLQ014CA3W1
EBLQ016CA3W1

EDLQ011CA3V3
EDLQ014CA3V3
EDLQ016CA3V3
EDLQ011CA3W1
EDLQ014CA3W1
EDLQ016CA3W1



A~E	H_B H_D H_U	(mm)								
		a	b*	b†	c	d	e	e_B	e_D	H
A, B, C	—	≥500	≥250	≥400	≥100					≥150
A, B, C, E	—	≥500	≥250	≥400	≥150		≥1000		≤500	≥150
D	—					≥500				≥150
D, E	—					≥500	≥1000	≤500		≥150
B, D	$H_D < H_U$		≥250	≥400		≥500				≥150
B, D, E	$H_D < H_U$ & $H_B > H_U$		≥250	≥400		≥1000	≥1000		≤500	≥150
	$H_D > H_U$ & $H_B < H_U$		≥250	≥400		≥1000	≥1000	≤500		≥150

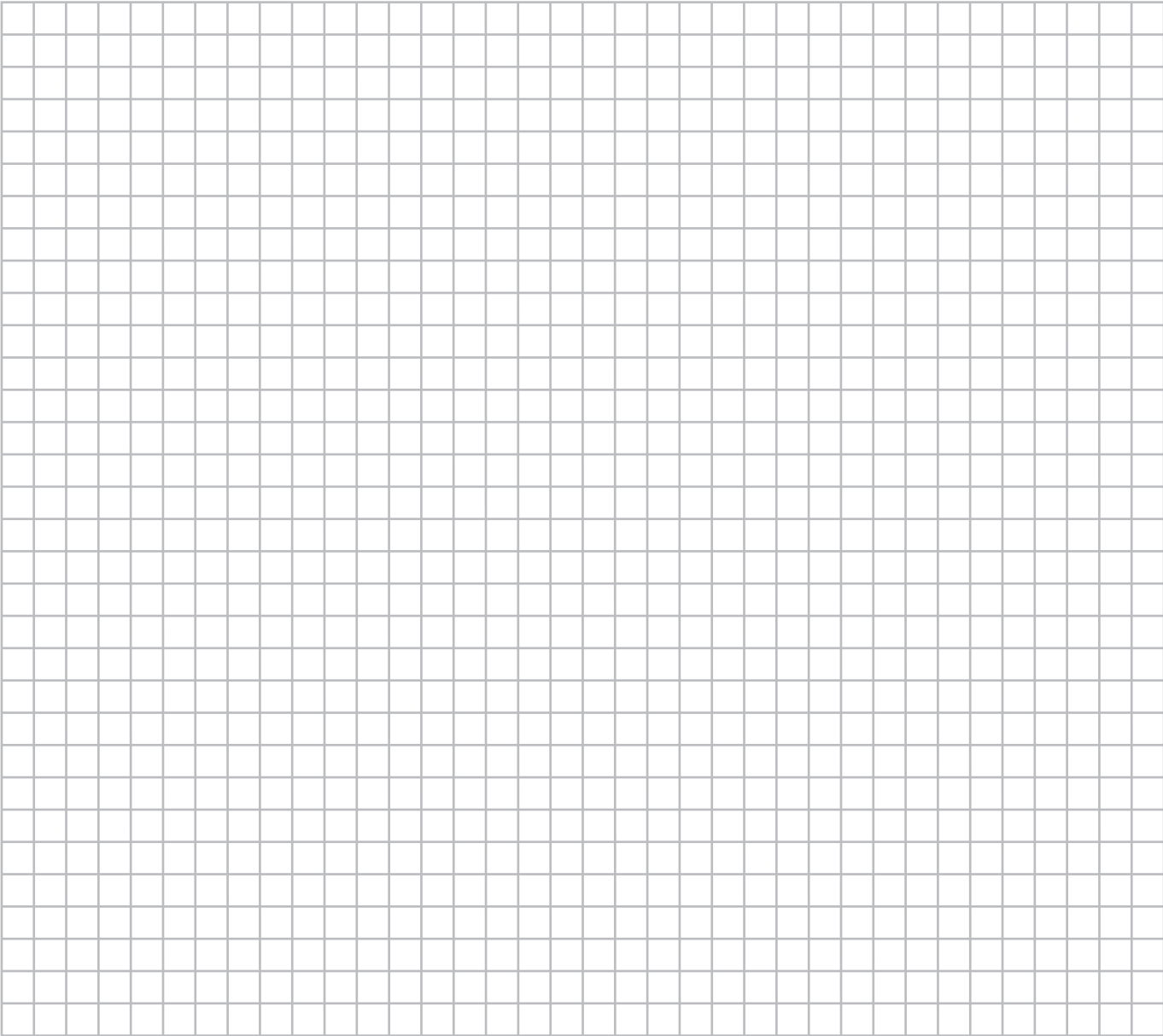


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1 About the documentation

1.1 About this document

Target audience

Documentation set

This document is part of a documentation set. The complete set consists of:

- **General safety precautions:**
 - Safety instructions that you must read before installing
 - Format: Paper (in the box of the outdoor unit)
- **Outdoor unit installation manual:**
 - Installation instructions
 - Format: Paper (in the box of the outdoor unit)
- **Control box installation manual:**
 - Installation instructions
 - Format: Paper (in the box of the control box)
- **Option box installation manual:**
 - Installation instructions
 - Format: Paper (in the box of the option box)
- **Installer reference guide:**
 - Preparation of the installation, good practices, reference data,...
 - Format: Digital files on <http://www.daikineurope.com/support-and-manuals/product-information/>
- **Addendum book for optional equipment:**
 - Additional info about how to install optional equipment
 - Format: Paper (in the box of the outdoor unit) + Digital files on <http://www.daikineurope.com/support-and-manuals/product-information/>

Latest revisions of the supplied documentation may be available on the regional Daikin website or via your dealer.

The original documentation is written in English. All other languages are translations.

Technical engineering data

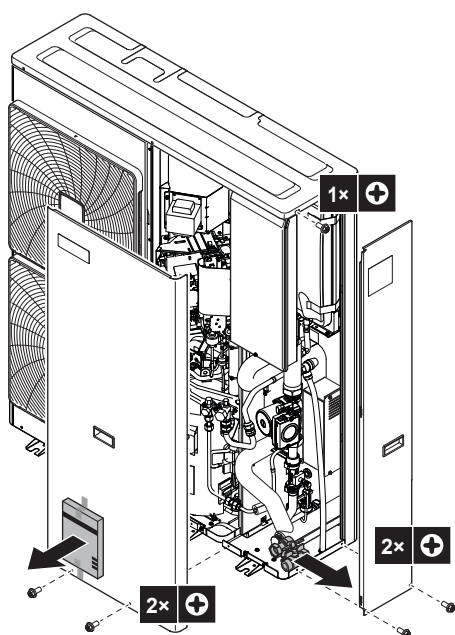
- A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible).
- The **full set** of latest technical data is available on the Daikin extranet (authentication required).

2 About the box

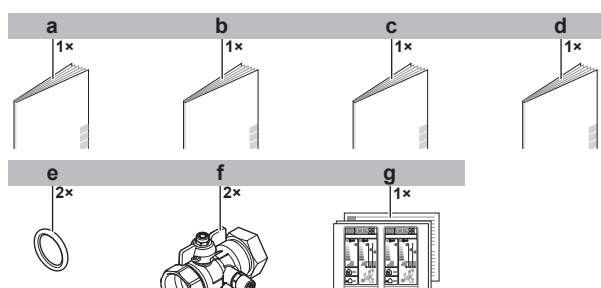
2.1 Outdoor unit

2.1.1 To remove the accessories from the outdoor unit

- 1 Open the outdoor unit.



2 Remove the accessories.



- a General safety precautions
- b Addendum book for optional equipment
- c Outdoor unit installation manual
- d Operation manual
- e Sealing ring for shut-off valve
- f Shut-off valve
- g Energy label

3 Preparation

3.1 Preparing the installation site

3.1.1 Installation site requirements of the outdoor unit

Mind the spacing guidelines. See figure 1 on the inside of the front cover.

The symbols can be interpreted as follows:

- A, C** Left side and right side obstacles (walls/baffle plates)
- B** Suction side obstacle (wall/baffle plate)
- D** Discharge side obstacle (wall/baffle plate)
- E** Top side obstacle (roof)
- a, b, c, d, e** Minimum service space between the unit and obstacles A, B, C, D and E
- *** If shut-off valves are NOT installed on the unit
- †** If shut-off valves are installed on the unit
- e_B** Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle B
- e_D** Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle D
- H_U** Height of the unit including the installation structure
- H_B, H_D** Height of obstacles B and D
- H** Height of installation structure below the unit

i INFORMATION

If shut-off valves are installed on the unit, provide a minimum space of 400 mm at the air inlet side. If shut-off valves are NOT installed on the unit, provide a minimum space of 250 mm.

If the system contains a domestic hot water tank, meet the following requirements:

Maximum allowable distance between outdoor unit and ...	Distance
domestic hot water tank	10 m
3-way valve	10 m

The outdoor unit is designed for outdoor installation only, and for ambient temperatures ranging 10~43°C in cooling mode, -25~25°C in space heating mode, and -25~35°C in domestic hot water operation mode.

3.2 Preparing water piping

i NOTICE

In case of plastic pipes, make sure they are fully oxygen diffusion tight according to DIN 4726. The diffusion of oxygen into the piping can lead to excessive corrosion.

3.2.1 To check the water volume and flow rate

Minimum water volume

Check that the total water volume in the installation is minimum 20 l, the internal water volume of the outdoor unit NOT included.

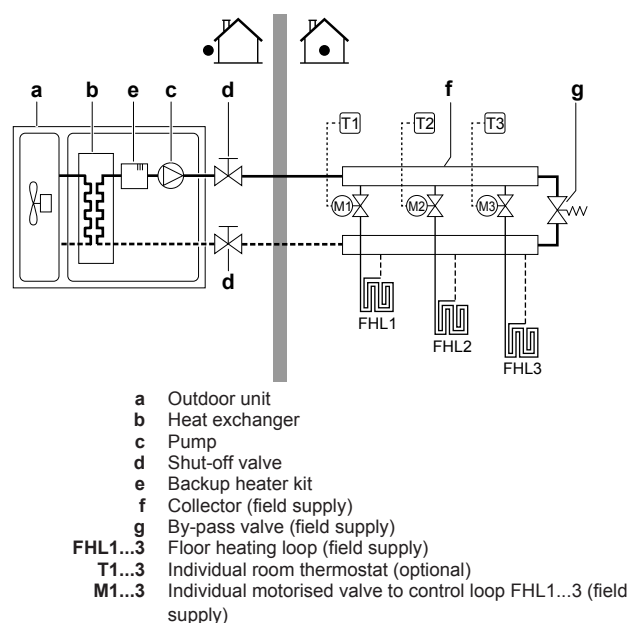
i INFORMATION

In critical processes, or in rooms with a high heat load, extra water might be required.

i NOTICE

When circulation in each space heating/cooling loop is controlled by remotely controlled valves, it is important that the minimum water volume is guaranteed, even if all of the valves are closed.

The following illustration shows a setup with remotely controlled valves:



4 Installation

Minimum flow rate

Check that the minimum flow rate (required during defrost/backup heater operation) in the installation is guaranteed in all conditions.

NOTICE

If glycol was added to the water circuit, and the temperature of the water circuit is low, the flow rate will NOT be displayed on the user interface. In this case, the minimum flow rate can be checked by way of the pump test (check that the user interface does NOT display error 7H).

NOTICE

When circulation in each or certain space heating loops is controlled by remotely controlled valves, it is important that the minimum flow rate is guaranteed, even if all valves are closed. In case the minimum flow rate cannot be reached, a flow error 7H will be generated (no heating or operation).

See the installer reference guide for more information.

Minimum required flow rate

20 l/min

See the recommended procedure as described in "6.2 Checklist during commissioning" on page 20.

3.3 Preparing electrical wiring

3.3.1 Overview of electrical connections for external and internal actuators

Item	Description	Wires	Maximum running current
Outdoor unit power supply			
1	Power supply for outdoor unit	2+GND	(a)
2	Normal kWh rate power supply	2	6.3 A
User interface			
3	User interface	2	(b)
Optional equipment			
4	Remote outdoor sensor	2	(c)
Field-supplied components			
5	Domestic hot water pump	2	(c)
6	Space heating/cooling operation control (or shut-off valve)	2	(e)
Interconnection cable			
7	Interconnection cable between outdoor unit and control box	2	(d)

- (a) Refer to name plate on outdoor unit.
- (b) Cable section 0.75 mm² till 1.25 mm²; maximum length: 500 m. Applicable for both single user interface and dual user interface connection.
- (c) Minimum cable section 0.75 mm².
- (d) Cable section 0.75 mm² till 1.25 mm²; maximum length: 20 m.
- (e) If valve kit EKMBHBP1 is part of the system, then the required cable section is 0.75 mm². If valve kit EKMBHBP1 is NOT part of the system, then the minimum required cable section is 0.75 mm².

NOTICE

More technical specifications of the different connections are indicated on the inside of the outdoor unit.

4 Installation

4.1 Opening the units

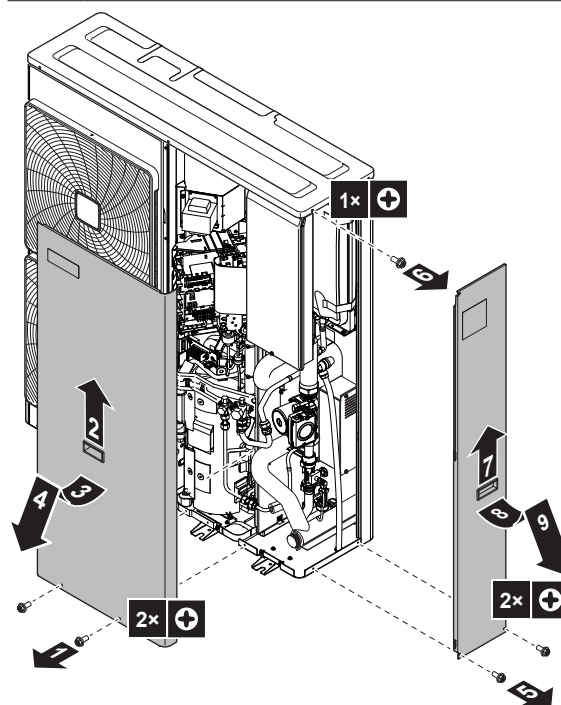
4.1.1 To open the outdoor unit



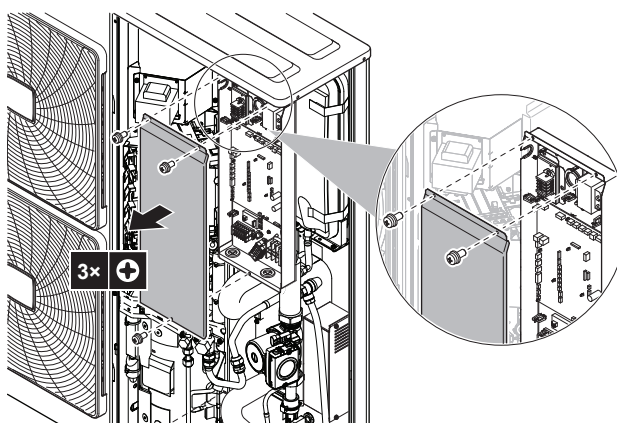
DANGER: RISK OF ELECTROCUTION



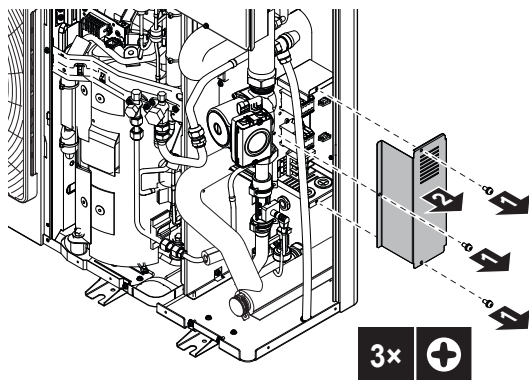
DANGER: RISK OF BURNING



4.1.2 To open the switch box cover of the outdoor unit



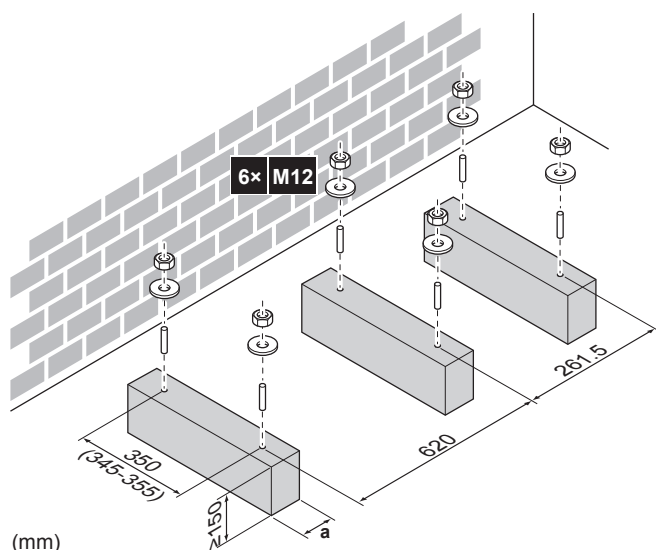
4.1.3 To open the backup heater switch box cover of the outdoor unit



4.2 Mounting the outdoor unit

4.2.1 To provide the installation structure

Prepare 6 sets of anchor bolts, nuts and washers (field supply) as follows:

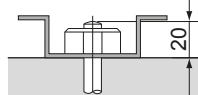


a Make sure not to cover the drain holes.



INFORMATION

The recommended height of the upper protruding part of the bolts is 20 mm.

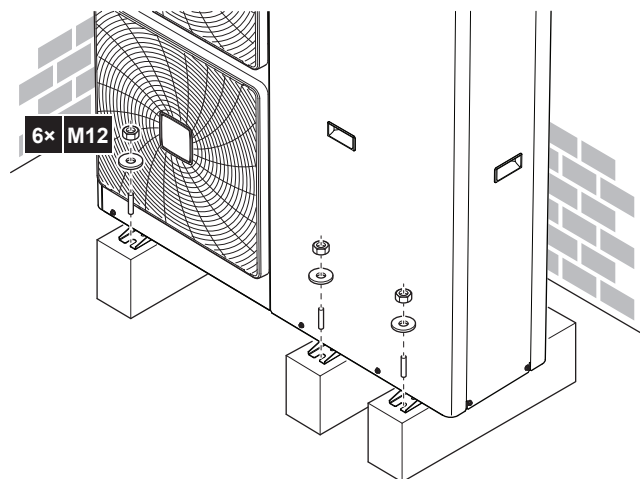


NOTICE

Fix the outdoor unit to the foundation bolts using nuts with resin washers (a). If the coating on the fastening area is stripped off, the nuts rust easily.



4.2.2 To install the outdoor unit



4.2.3 To provide drainage

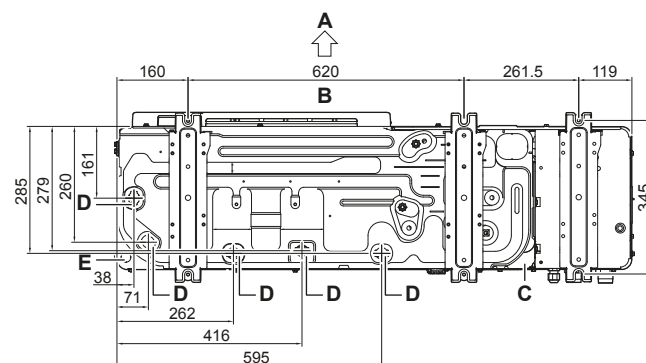
Make sure that condensate can be evacuated properly. When the unit is in cooling mode, condensate may also form in the hydro part. When providing drainage, therefore make sure to cover the entire unit.



NOTICE

If the unit is installed in a cold climate, take adequate measures so that the evacuated condensate CANNOT freeze.

Drain holes (dimensions in mm)

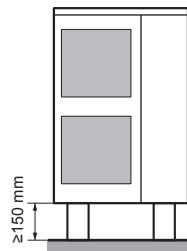


- A Discharge side
- B Distance between anchor points
- C Bottom frame
- D Drain holes
- E Knockout hole for snow



NOTICE

If drain holes of the outdoor unit are covered by a mounting base or by floor surface, raise the unit to provide a free space of more than 150 mm under the outdoor unit.

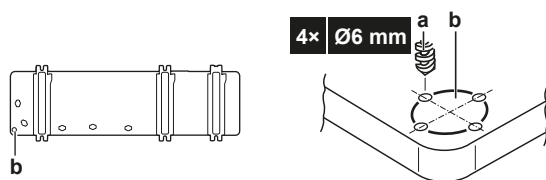


Snow

In regions with snowfall, snow might build up and freeze between the heat exchanger and the external plate. This might decrease the operating efficiency. To prevent this:

- 1 Drill (a, 4×) and remove the knockout hole (b).

4 Installation

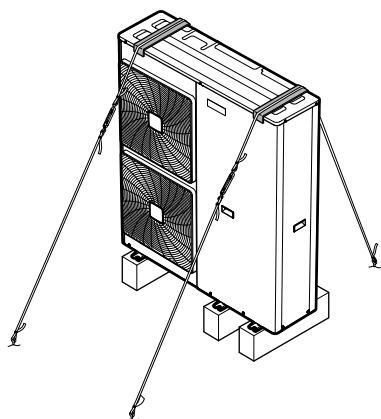


- 2 Remove the burrs, and paint the edges and areas around the edges using repair paint to prevent rusting.

4.2.4 To prevent the outdoor unit from falling over

In case the unit is installed in places where strong wind can tilt the unit, take following measure:

- 1 Prepare 2 cables as indicated in the following illustration (field supply).
- 2 Place the 2 cables over the outdoor unit.
- 3 Insert a rubber sheet between the cables and the outdoor unit to prevent the cables from scratching the paint (field supply).
- 4 Attach the ends of the cables and tighten them.



4.3 Connecting the water piping

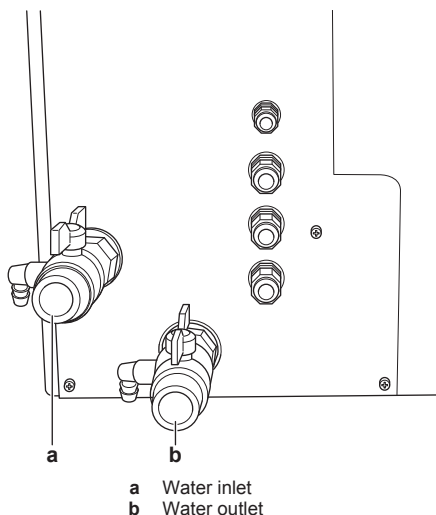
4.3.1 To connect the water piping



NOTICE

Do NOT use excessive force when connecting the piping. Deformation of the piping can cause malfunctioning of the unit. Make sure that the tightening torque does NOT exceed 30 N•m.

To facilitate service and maintenance, 2 shut-off valves are provided. Mount the valves on the space heating water inlet and space heating water outlet. Mind their position: the integrated drain valves will only drain the side of the circuit on which they are located. To be able to only drain the unit, make sure the drain valves are positioned between the shut-off valves and the unit.



- 1 Screw the outdoor unit nuts on the shut-off valves.
- 2 Connect the field piping on the shut-off valves.
- 3 In case of connection with the optional domestic hot water tank, see the installation manual of the domestic hot water tank.



NOTICE

Install a manometer in the system.



NOTICE

Install air purge valves at all local high points.



NOTICE

In case an optional domestic hot water tank is installed: A pressure relief valve (field supply) with an opening pressure of maximum 10 bar must be installed on the domestic cold water inlet connection in accordance with the applicable legislation.

4.3.2 To protect the water circuit against freezing

Frost can damage the system. To prevent the hydraulic components from freezing, the software is equipped with special frost protection functions, that include the activation of pump, internal heaters, and/or backup heater operation in case of low temperatures.

However, in case of a power failure, these functions cannot guarantee protection. It is therefore recommended to add glycol to the water circuit. The required concentration depends on the lowest expected outdoor temperature, and on whether you want to protect the system from bursting or from freezing. To prevent the system from freezing, more glycol is required. Add glycol according to the table below.



INFORMATION

- Protection against bursting: the glycol will prevent the piping from bursting, but NOT the liquid inside the piping from freezing.
- Protection against freezing: the glycol will prevent the liquid inside the piping from freezing.

Lowest expected outdoor temperature	Prevent from bursting	Prevent from freezing
-5°C	10%	15%
-10°C	15%	25%
-15°C	20%	35%
-20°C	25%	—
-25°C	30%	—



NOTICE

- The required concentration might differ depending on the type of glycol. ALWAYS compare the requirements from the table above with the specifications provided by the glycol manufacturer. If necessary, meet the requirements set by the glycol manufacturer.
- The added concentration of glycol should NEVER exceed 35%.
- If the liquid in the system is frozen, the pump will NOT be able to start. Mind that if you only prevent the system from bursting, the liquid inside might still freeze.
- In case of a power supply failure or pump failure, and NO glycol was added to the system, drain the system.
- When water is at standstill inside the system, the system is very likely to freeze and get damaged.

The types of glycol that can be used depend on whether the system contains a domestic hot water tank:

If...	Then...
The system contains a domestic hot water tank	Only use propylene glycol ^(a)
The system does NOT contain a domestic hot water tank	You can use either propylene glycol ^(a) or ethylene glycol

(a) Propylene glycol, including the necessary inhibitors, classified as Category III according to EN1717.



WARNING

Ethylene glycol is toxic.



NOTICE

Glycol absorbs water from its environment. Therefore do NOT add glycol that has been exposed to air. Leaving the cap off the glycol container causes the concentration of water to increase. The glycol concentration is then lower than assumed. As a result, the hydraulic components might freeze up after all. Take preventive actions to ensure a minimal exposure of the glycol to air.



NOTICE

- If overpressure occurs, the system will release some of the liquid through the pressure relief valve. If glycol was added to the system, take adequate measures so as to safely recover it.
- In any case, make sure that the flexible hose of the pressure relief valve is ALWAYS free to release pressure. Prevent water from staying and/or freezing up inside the hose.



WARNING

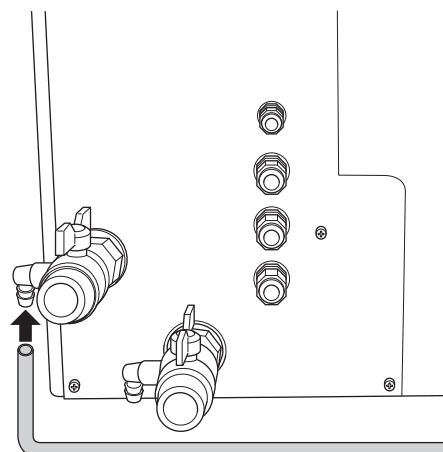
Due to presence of glycol, corrosion of the system is possible. Uninhibited glycol will turn acidic under the influence of oxygen. This process is accelerated by the presence of copper and high temperatures. The acidic uninhibited glycol attacks metal surfaces and forms galvanic corrosion cells that cause severe damage to the system. Therefore it is important that:

- the water treatment is correctly executed by a qualified water specialist,
- a glycol with corrosion inhibitors is selected to counteract acids formed by the oxidation of glycols,
- no automotive glycol is used because their corrosion inhibitors have a limited lifetime and contain silicates which can foul or plug the system,
- galvanized pipes are NOT used in glycol systems since the presence may lead to the precipitation of certain components in the glycol's corrosion inhibitor.

Adding glycol to the water circuit reduces the maximum allowed water volume of the system. For more information, refer to the chapter "To check the water volume and flow rate" in the installer reference guide.

4.3.3 To fill the water circuit

- 1 Connect the water supply hose to the drain and fill valve.



- 2 Open the drain and fill valve.
- 3 If an automatic air purge valve was installed, make sure it is open.
- 4 Fill the circuit with water until the manometer (field supply) indicates a pressure of ± 2.0 bar.
- 5 Purge as much air as possible from the water circuit. For instructions, see ["6 Commissioning" on page 20](#).
- 6 Refill the circuit until the pressure is ± 2.0 bar.
- 7 Repeat steps 5 and 6 until no more air is purged and there are no more pressure drops.
- 8 Close the drain and fill valve.
- 9 Disconnect the water supply hose from the drain and fill valve.

4.3.4 To insulate the water piping

The piping in the complete water circuit MUST be insulated to prevent condensation during cooling operation and reduction of the heating and cooling capacity.

To prevent the freezing of the outdoor water piping during winter time, the thickness of the sealing material MUST be at least 13 mm (with $\lambda=0.039$ W/mK).

4 Installation

If the temperature is higher than 30°C and the humidity is higher than RH 80%, the thickness of the insulation materials should be at least 20 mm to prevent condensation on the surface of the insulation.

During winter, protect the water piping and shut-off valves against freezing by adding heat tape (field supply). If the outdoor temperature can drop below -20°C and no heat tape is used, it is recommended to install the shut-off valves indoors.

4.4 Connecting the electrical wiring



DANGER: RISK OF ELECTROCUTION

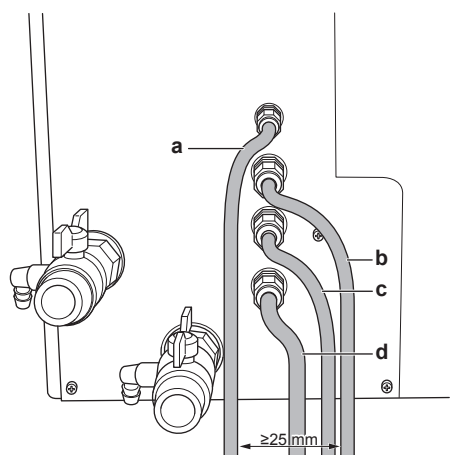


WARNING

ALWAYS use multicore cable for power supply cables.

4.4.1 To connect the electrical wiring on the outdoor unit

- 1 Remove the switch box cover. See "4.1.1 To open the outdoor unit" on page 6.
- 2 Insert the wiring at the back of the unit:



- a Low voltage cable
- b High voltage cable
- c Power supply cable
- d Backup heater power supply cable



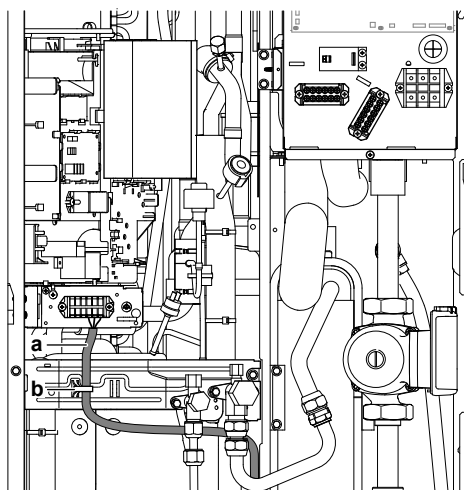
NOTICE

The distance between the high voltage and low voltage cables should be at least 25 mm.

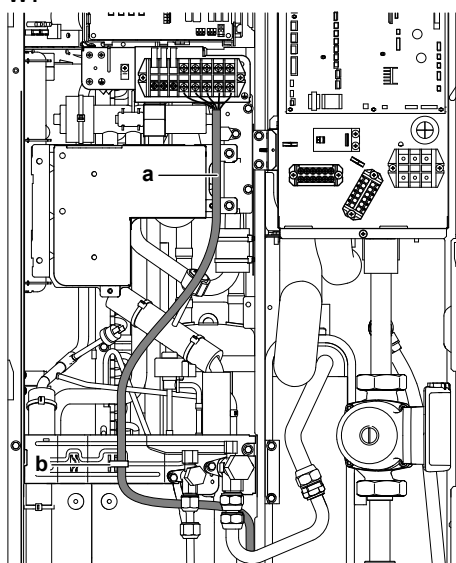
Routing	Possible cables (depends on the installed options)
a Low voltage	<ul style="list-style-type: none"> User interface Interconnection cable to control box EKCB07CAV3 Remote outdoor sensor (option)
b High voltage	<ul style="list-style-type: none"> Normal kWh rate power supply Preferential kWh rate power supply Heat pump convector (option) Shut-off valve (field supply) Domestic hot water pump (field supply) Space heat/cool operation control
c Main power supply	<ul style="list-style-type: none"> Main power supply
d Backup heater power supply	<ul style="list-style-type: none"> Backup heater power supply

- 3 Inside the unit, route the wiring as follows:

V3



W1



- a Power supply cable
- b Cable tie

- 4 Make sure that the cable does NOT come in contact with sharp edges or hot gas piping.
- 5 Install the switch box cover.



INFORMATION

When installing field supply or option cables, foresee sufficient cable length. This will make it possible to remove/reposition the switch box and gain access to other components during service.



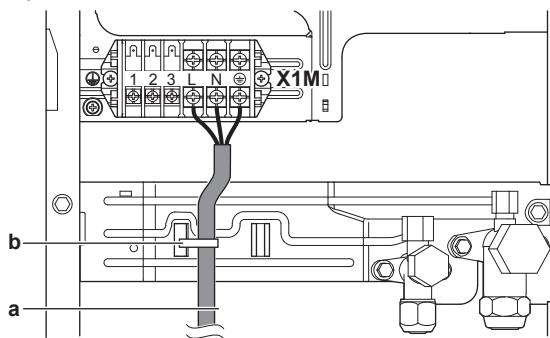
CAUTION

Do NOT push or place redundant cable length in the unit.

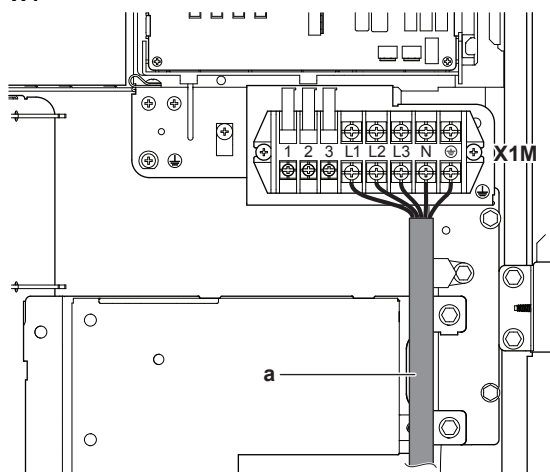
4.4.2 To connect the main power supply

- 1 Connect the main power supply as follows:

V3



W1



- a Power supply cable (including earth)
b Cable tie

4.4.3 To connect the backup heater power supply



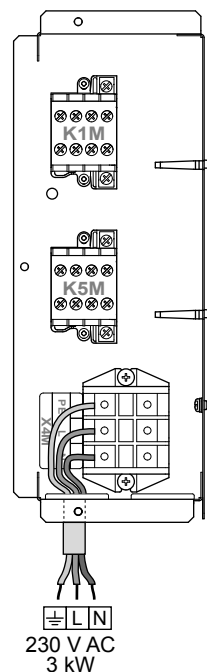
CAUTION

To guarantee the unit is completely earthed, always connect the backup heater power supply and the earth cable.

Make sure that the power supply is in accordance with the backup heater capacity, as listed in the table below.

Backup heater type	Backup heater capacity	Power supply	Maximum running current	$Z_{max}(\Omega)$
*3V	3 kW	1~230 V	13 A	—

- 1 Open the backup heater switch box (see "4.1.3 To open the backup heater switch box cover of the outdoor unit" on page 7).
- 2 Route the wiring as follows:



- 3 Fix the cable with cable ties to the cable tie mountings.



INFORMATION

For more information on the backup heater types, and for how to configure the backup heater, refer to the "Configuration" chapter of the installation manual of the outdoor unit.

4.4.4 To connect the user interface



INFORMATION

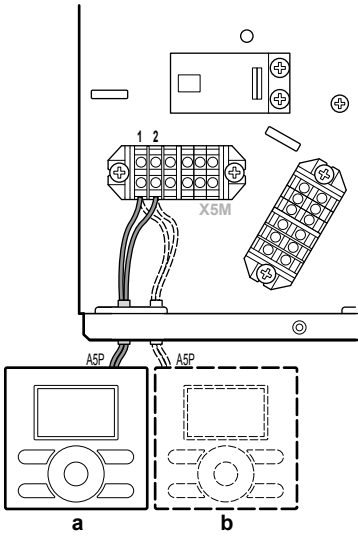
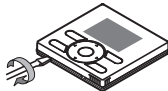
- If control box EKCB07CAV3 is NOT part of the system, connect the user interface directly to the outdoor unit.
- If control box EKCB07CAV3 is part of the system, you can also connect the user interface to the control box. To do this, connect the user interface to control box terminals X2M/20+21, and then connect the control box to the outdoor unit by connecting X2M/20+21 to outdoor unit terminals X5M/1+2.



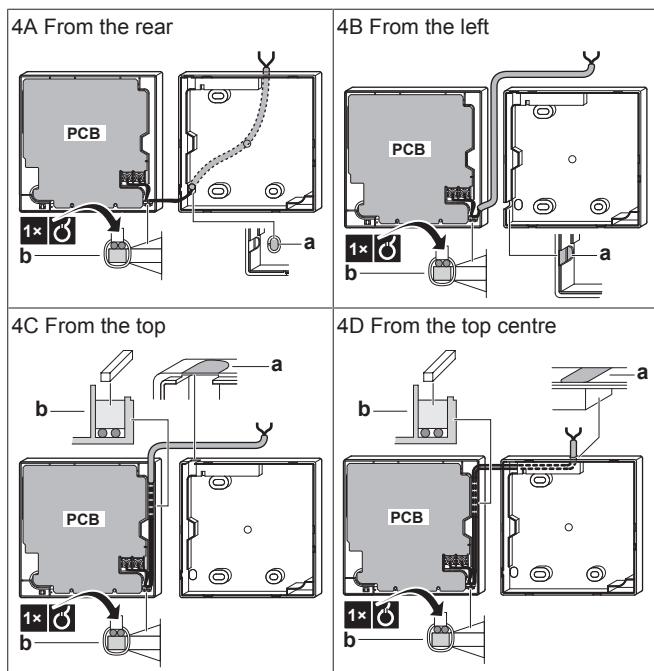
INFORMATION

For details on how to connect the user interface to the control box, refer to the installer reference guide or the installation manual of the control box.

4 Installation

#	Action
1	<p>Connect the user interface cable to the outdoor unit.</p>  <p>a Main user interface^(a) b Optional user interface</p>
2	<p>Insert a screwdriver into the slots underneath the user interface and carefully separate the faceplate from the wallplate.</p> <p>The PCB is mounted in the faceplate of the user interface. Be careful NOT to damage it.</p> 
3	Fix the wallplate of the user interface to the wall.
4	Connect as shown in 4A, 4B, 4C or 4D.
5	<p>Reinstall the faceplate onto the wallplate.</p> <p>Be careful NOT to pinch the wiring when attaching the frontplate to the unit.</p>

(a) The main user interface is required for operation, but has to be ordered separately (mandatory option).



a Notch this part for the wiring to pass through with nippers etc.

- b** Secure the wiring to the front part of the casing using the wiring retainer and clamp.

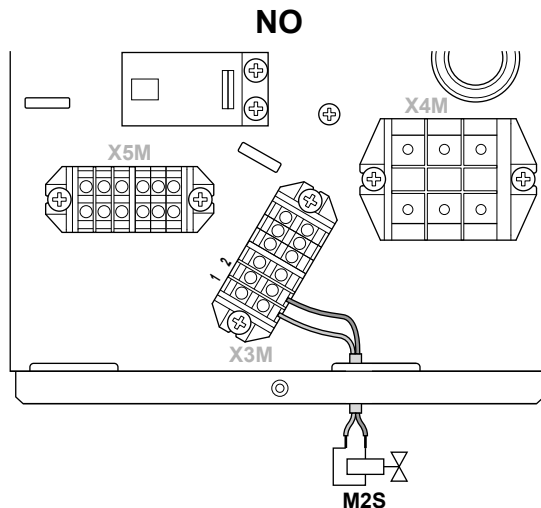
4.4.5 To connect the shut-off valve

- 1 Connect the valve control cable to the appropriate terminals as shown in the illustration below.



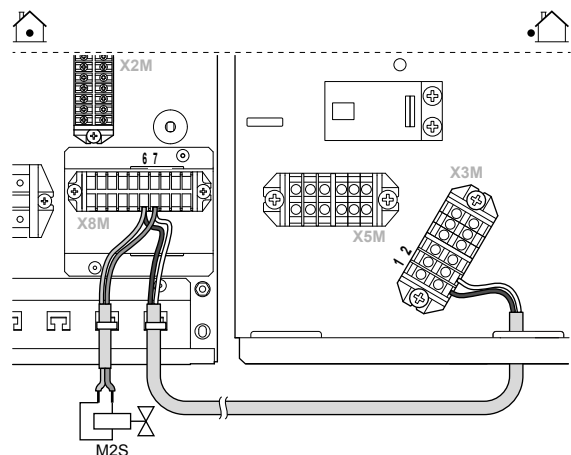
NOTICE

Only connect NO (normal open) valves.



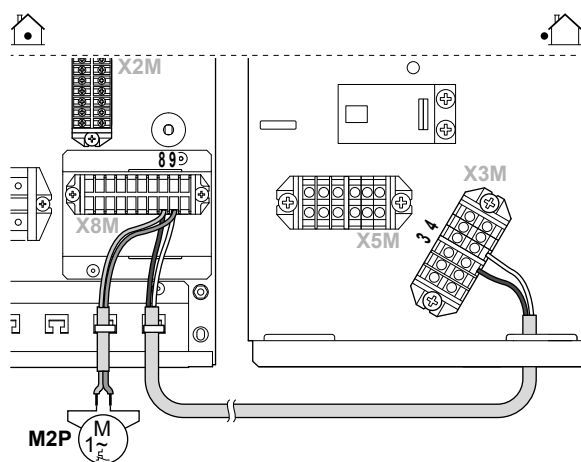
INFORMATION

By default, the shut-off valve is to be connected to the outdoor unit. However, if control box EKCB07CAV3 is present in the system, you can also connect it to the control box. To do this, connect outdoor unit terminals X3M/1+2 to control box terminals X8M/6+7, and then connect the shut-off valve to control box terminals X8M/6+7.



4.4.6 To connect the domestic hot water pump

- 1 Connect outdoor unit terminals X3M/3+4 to the bottom side of terminals X8M/8+9 of control box EKCB07CAV3.
- 2 Connect the cable of the domestic hot water pump to the bottom side of control box terminals X8M/8+9.



5 Configuration

5.1 Overview: Configuration

This chapter describes what you have to do and know to configure the system after it is installed.



NOTICE

The explanation about the configuration in this chapter gives you ONLY basic explanations. For more detailed explanation and background information, see the installer reference guide.

Why

If you do NOT configure the system correctly, it might NOT work as expected. The configuration influences the following:

- The calculations of the software
- What you can see on and do with the user interface

How

You can configure the system via the user interface.

- **First time – Quick wizard.** When you turn ON the user interface for the first time (via the indoor unit), a quick wizard starts to help you configure the system.
- **Afterwards.** If necessary, you can make changes to the configuration afterwards.



INFORMATION

When the installer settings are changed, the user interface will request to confirm. When confirmed, the screen will shortly turn OFF and "busy" will be displayed for several seconds.

Accessing settings – Legend for tables

You can access the installer settings using two different methods. However, NOT all settings are accessible via both methods. If so, the corresponding table columns in this chapter are set to N/A (not applicable).

Method	Column in tables
Accessing settings via the breadcrumb in the menu structure .	#
Accessing settings via the code in the overview settings .	Code

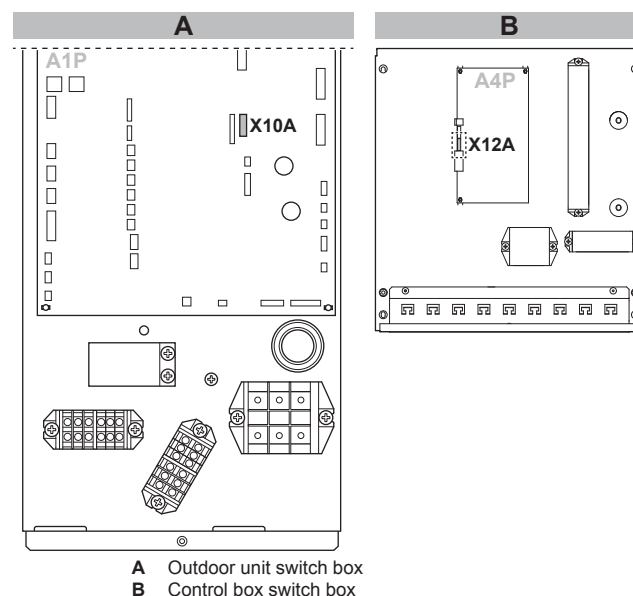
See also:

- ["To access the installer settings" on page 13](#)
- ["5.3 Menu structure: Overview installer settings" on page 19](#)

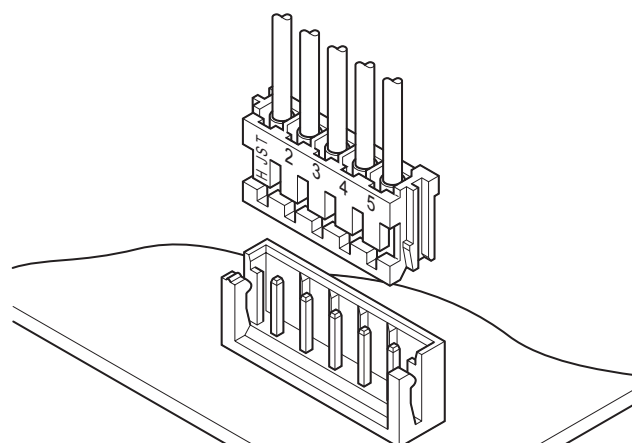
5.1.1 To connect the PC cable to the switch box

Prerequisite: The EKPCCAB kit is required.

- 1 Connect the cable with USB connection to your PC.
- 2 Connect the plug of the cable to X10A on A1P of the switch box of the outdoor unit, or to X12A on A4P of the switch box of control box EKCB07CAV3.



- 3 Pay special attention to the position of the plug!



NOTICE

Another cable is already connected to X10A. To connect the PC cable to X10A, therefore temporarily disconnect this other cable. Do NOT forget to reconnect it afterwards.

5.1.2 To access the most used commands

To access the installer settings

- 1 Set the user permission level to Installer.
- 2 Go to [A]: > Installer settings.

To access the overview settings

- 1 Set the user permission level to Installer.
- 2 Go to [A.8]: > Installer settings > Overview settings.

To set the user permission level to Installer

- 1 Set the user permission level to Adv. end user.
- 2 Go to [6.4]: > Information > User permission level.
- 3 Press for more than 4 seconds.

Result: is displayed on the home pages.

5 Configuration

- If you do NOT press any button for more than 1 hour or press **⏻** again for more than 4 seconds, the installer permission level switches back to End user.

To set the user permission level to Advanced end user

- Go to the main menu or any of its submenus: **☰**.
- Press **⏻** for more than 4 seconds.

Result: The user permission level switches to Adv. end user. Additional information is displayed and "+" is added to the menu title. The user permission level will stay in Adv. end user until set otherwise.

To set the user permission level to End user

- Press **⏻** for more than 4 seconds.

Result: The user permission level switches to End user. The user interface will return to the default home screen.

To modify an overview setting

Example: Modify [1-01] from 15 to 20.

- Go to [A.8]: **☰** > Installer settings > Overview settings.
- Go to the corresponding screen of the first part of the setting by using the **⬅** and **➡** button.



INFORMATION

An additional 0-digit is added to the first part of the setting when you access the codes in the overview settings.

Example: [1-01]: "1" will result in "01".

Overview settings				
		01		
00	01	15	02	03
04	05	06	07	
08	09	0a	0b	
0c	0d	0e	0f	
OK Confirm Adjust Scroll				

- Go to the corresponding second part of the setting by using the **⬅** and **➡** button.

Overview settings				
		01		
00	01	15	02	03
04	05	06	07	
08	09	0a	0b	
0c	0d	0e	0f	
OK Confirm Adjust Scroll				

Result: The value to be modified is now highlighted.

- Modify the value by using the **⬅** and **➡** button.

Overview settings				
		01		
00	01	20	02	03
04	05	06	07	
08	09	0a	0b	
0c	0d	0e	0f	
OK Confirm Adjust Scroll				

- Repeat previous steps if you have to modify other settings.
- Push **OK** to confirm the modification of the parameter.
- At installer settings menu, press **OK** to confirm the settings.

Installer settings	
The system will restart.	
OK	Cancel
OK Confirm Adjust	

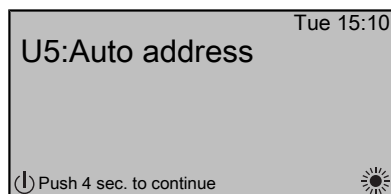
Result: The system will restart.

5.1.3 To copy the system settings from the first to the second user interface

If a second user interface is connected, the installer must first proceed below instructions for the proper configuration of the 2 user interfaces.

This procedure offers you also the possibility to copy the language set from one user interface to the other one: e.g. from EKRUCBL2 to EKRUCBL1.

- When power is turned on for the first time, both user interfaces display:



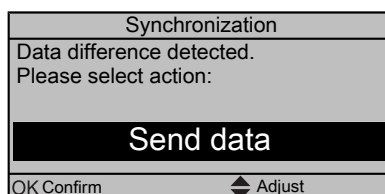
- Push **⏻** for 4 seconds on the user interface on which you want to proceed to the quick wizard. This user interface is now the main user interface.



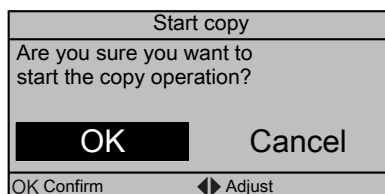
INFORMATION

During the quick wizard, the second user interface displays Busy and will NOT be possible to operate.

- The quick wizard will guide you.
- For proper operation of the system, the local data on the two user interfaces must be the same. If this is NOT the case, both user interfaces will display:



- Select the required action:
 - Send data: the user interface you are operating contains the correct data and the data on the other user interface will be overwritten.
 - Receive data: the user interface you are operating does NOT contain the correct data and the data on the other user interface will be used to overwrite.
- The user interface requests confirmation if you are sure to proceed.



- Confirm the selection on the screen by pushing **OK** and all data (languages, schedules etc.) will be synchronised from the selected source user interface to the other one.

**INFORMATION**

- During the copying, both controllers will NOT allow operation.
- The copy operation can take up until 90 minutes.
- It is recommended to change installer settings, or the configuration of the unit, on the main user interface. If not, it can take up to 5 minutes before these changes are visible in the menu structure.

8 Your system is now set to be operated by the 2 user interfaces.

5.1.4 To copy the language set from the first to the second user interface

See "5.1.3 To copy the system settings from the first to the second user interface" on page 14.

5.1.5 Quick wizard: Set the system layout after first power ON

After first power ON of the system, you are guided on the user interface to do initial settings:

- language,
- date,
- time,
- system layout.

By confirming the system layout, you can proceed with the installation and commissioning of the system.

- At power ON, the quick wizard starts as long as the system layout was NOT confirmed yet, by setting the language.

Language	
Select the desired language	
<div style="background-color: black; height: 20px; width: 100%;"></div>	
OK Confirm	Adjust

- Set the current date and time.

Time	
What is the current time?	
00 : 00	
OK Confirm	Adjust Scroll

- Set the system layout settings: Standard, Options, Capacities. For more details, see "5.2 Basic configuration" on page 15.

A.2 System layout 1	
Standard	
Options	
Capacities	
Confirm layout	
OK Select	Scroll

- After configuration, select Confirm layout and press **OK**.

Confirm layout	
Please confirm the system layout. The system will restart and will be ready for first startup.	
<div style="display: inline-block; background-color: black; color: white; padding: 5px 10px;">OK</div> <div style="display: inline-block; padding: 5px 10px;">Cancel</div>	
OK Confirm	Adjust

- The user interface re-initialises and you can proceed the installation by setting the other applicable settings and commissioning of the system.

When the installer settings are changed, the system will request to confirm. When confirmation is complete, the screen will shortly turn OFF and "busy" will be displayed for several seconds.

5.2 Basic configuration

5.2.1 Quick wizard: Language / time and date

#	Code	Description
[A.1]	N/A	Language
[1]	N/A	Time and date

5.2.2 Quick wizard: Standard

Space heating/cooling settings

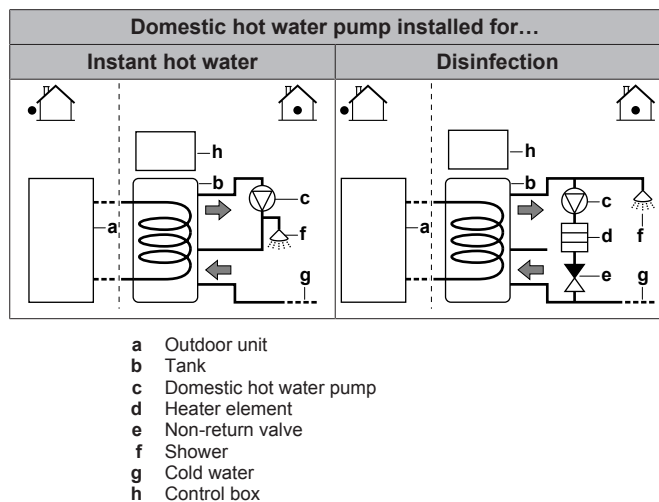
#	Code	Description
[A.2.1.7]	[C-07]	Unit temperature control: <ul style="list-style-type: none"> 0 (LWT control): Unit operation is decided based on the leaving water temperature. 1 (Ext RT control): Unit operation is decided by the external thermostat. 2 (RT control): Unit operation is decided based on the ambient temperature of the user interface.
[A.2.1.8]	[7-02]	Number of water temperature zones: <ul style="list-style-type: none"> 0 (1 LWT zone): Main 1 (2 LWT zones): Main + additional
[A.2.1.9]	[F-0D]	Pump operation: <ul style="list-style-type: none"> 0 (Continuous): Continuous pump operation, regardless of thermo ON or OFF condition. 1 (Sample): When thermo OFF condition occurs, the pump runs every 5 minutes and the water temperature is checked. If the water temperature is below target, unit operation can start. 2 (Request)(default): Pump operation based on request. Example: Using a room thermostat and thermostat creates thermo ON/OFF condition.
[A.2.1.B]	N/A	Only if there are 2 user interfaces: User interface location: <ul style="list-style-type: none"> 0 (At unit) 1 (In room)(default)
[A.2.1.C]	[E-0D]	Glycol present: <ul style="list-style-type: none"> 0 (No)(default) 1 (Yes)

5 Configuration

5.2.3 Quick wizard: Options

External domestic hot water pump

#	Code	Description
[A.2.2.A]	[D-02]	Domestic hot water pump: <ul style="list-style-type: none"> 0 (No): NOT installed 1 (Secondary rtn): Installed for instant hot water 2 (Disinf. shunt): Installed for disinfection 3 (Circul. Pump): Installed for tank preheating. 4 (CP & disinf. Sh): Combination of 2 and 3. See also illustrations below.



Remote outdoor sensor

#	Code	Description
[A.2.2.B]	[C-08]	External sensor (outdoor): <ul style="list-style-type: none"> 0 (No): NOT installed. 1 (Outdoor sensor): Remote outdoor sensor, connected to the outdoor unit. 2 (Room sensor): Remote indoor sensor, connected to option box EK2CB07CAV3.



INFORMATION

You can only connect either the remote indoor sensor or the remote outdoor sensor.

Control box EKCB07CAV3

#	Code	Description
[A.2.2.E.1]	[E-03]	1 (default – read only)
[A.2.2.E.2]	[5-0D]	BUH type: <ul style="list-style-type: none"> 1 (default – read only)

Backup heater configuration	[E-03]	[5-0D]
3V3	1	1

#	Code	Description
[A.2.2.E.4]	[E-05]	DHW operation: <ul style="list-style-type: none"> Can the system prepare domestic hot water? <ul style="list-style-type: none"> 0 (No): NOT installed 1 (Yes): Installed
N/A	[E-07]	DHW tank type: <ul style="list-style-type: none"> 0 (EKHWS): DHW tank with booster heater installed at the side of the tank. (Default). 1 (EKHWP): DHW tank with booster heater installed at the top of the tank.
[A.2.2.E.5]	[C-05]	External room thermostat for the main zone: <ul style="list-style-type: none"> 1 (Thermo ON/OFF): When the used external room thermostat or heat pump convactor can only send a thermo ON/OFF condition. No separation between heating or cooling demand. 2 (H/C request): When the used external room thermostat can send a separate heating/cooling thermo ON/OFF condition. If there are two zones (main +additional), then only Thermo ON/OFF is possible.
[A.2.2.E.6]	[C-06]	External room thermostat for the additional zone: <ul style="list-style-type: none"> 0: N/A 1 (Thermo ON/OFF): When the used external room thermostat or heat pump convactor can only send a thermo ON/OFF condition. No separation between heating or cooling demand. 2: N/A If there are two zones (main +additional), then only Thermo ON/OFF is possible.

Option box EK2CB07CAV3

#	Code	Description
[A.2.2.F.1]	[C-02]	External backup heater source: <ul style="list-style-type: none"> 0 (default – read only)
[A.2.2.F.2]	[C-09]	Alarm output <ul style="list-style-type: none"> 0 (Normally open): The alarm output will be powered when an alarm occurs. 1 (Normally closed): The alarm output will NOT be powered when an alarm occurs. This installer setting allows for a distinction between the detection of an alarm, and the detection of a power failure. See also table below (Alarm output logic).

#	Code	Description
[A.2.2.F.3]	[D-08]	Optional external kWh meter 1: <ul style="list-style-type: none"> 0 (No): NOT installed 1: Installed (0.1 pulse/kWh) 2: Installed (1 pulse/kWh) 3: Installed (10 pulse/kWh) 4: Installed (100 pulse/kWh) 5: Installed (1000 pulse/kWh)
[A.2.2.F.4]	[D-09]	Optional external kWh meter 2: <ul style="list-style-type: none"> 0 (No): NOT installed 1: Installed (0.1 pulse/kWh) 2: Installed (1 pulse/kWh) 3: Installed (10 pulse/kWh) 4: Installed (100 pulse/kWh) 5: Installed (1000 pulse/kWh)

#	Code	Description
[A.2.2.F.5]	[C-08]	External sensor (indoor): <ul style="list-style-type: none"> 0 (No): NOT installed. 1 (Outdoor sensor): Remote outdoor sensor, connected to the outdoor unit. 2 (Room sensor): Remote indoor sensor, connected to option box EK2CB07CAV3.

**INFORMATION**

You can only connect either the remote indoor sensor or the remote outdoor sensor.

#	Code	Description
[A.2.2.F.6]	[D-04]	PCC by digital inputs: <ul style="list-style-type: none"> 0 (No) 1 (Yes)

5.2.4 Quick wizard: Capacities (energy metering)

#	Code	Description
[A.2.3.1]	[6-02]	Booster heater capacity [kW]
[A.2.3.2]	[6-03]	Backup heater capacity (step 1) [kW]

5.2.5 Space heating/cooling control

Leaving water temperature: Main zone

#	Code	Description
[A.3.1.1.1]	N/A	Set point mode: <ul style="list-style-type: none"> 0 (Fixed): Absolute 1 (Weather dep.): Weather-dependent 2 (Fixed/scheduled): Absolute + scheduled (only for leaving water temperature control) 3 (WD/scheduled): Weather-dependent + scheduled (only for leaving water temperature control)

#	Code	Description
[7.7.1.1]	[1-00] [1-01] [1-02] [1-03]	Weather-dependent curve (heating): <ul style="list-style-type: none"> T_t: Target leaving water temperature (main) T_a: Outdoor temperature
[7.7.1.2]	[1-06] [1-07] [1-08] [1-09]	Weather-dependent curve (cooling): <ul style="list-style-type: none"> T_t: Target leaving water temperature (main) T_a: Outdoor temperature

Leaving water temperature: Additional zone

#	Code	Description
[A.3.1.2.1]	N/A	Set point mode: <ul style="list-style-type: none"> 0 (Fixed): Absolute 1 (Weather dep.): Weather-dependent 2 (Fixed/scheduled): Absolute + scheduled (only for leaving water temperature control) 3 (WD/scheduled): Weather-dependent + scheduled (only for leaving water temperature control)
[7.7.2.1]	[0-00] [0-01] [0-02] [0-03]	Weather-dependent curve (heating): <ul style="list-style-type: none"> T_t: Target leaving water temperature (additional) T_a: Outdoor temperature

5 Configuration

#	Code	Description
[7.7.2.2]	[0-04] [0-05] [0-06] [0-07]	Weather-dependent curve (cooling): <ul style="list-style-type: none"> • T_t: Target leaving water temperature (additional) • T_a: Outdoor temperature

Leaving water temperature: Delta T source

#	Code	Description
[A.3.1.3.1]	[9-09]	Heating: required temperature difference between entering and leaving water. In case a minimum temperature difference is required for the good operation of the heat emitters in heating mode.
[A.3.1.3.2]	[9-0A]	Cooling: required temperature difference between entering and leaving water. In case a minimum temperature difference is required for the good operation of the heat emitters in cooling mode.

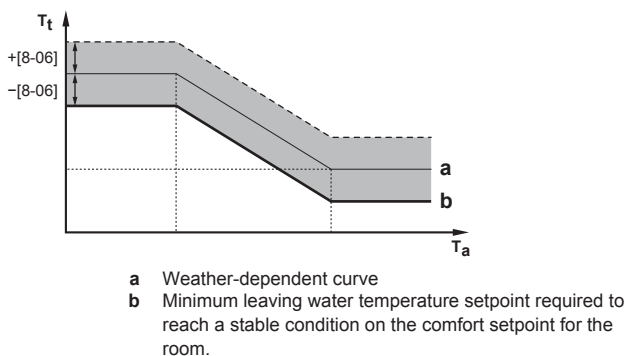
Leaving water temperature: Modulation

#	Code	Description
[A.3.1.1.5]	[8-05]	Leaving water temperature modulation: <ul style="list-style-type: none"> • 0 (No): Disabled • 1 (Yes): Enabled. The leaving water temperature is calculated according to the difference between desired and actual room temperature. This allows better matching of the heat pump capacity to actual required capacity and results in less start/stop cycles of the heat pump and more economic operation.
N/A	[8-06]	Leaving water temperature maximum modulation: 0°C~10°C (default: 3°C) Requires modulation to be enabled. This is the value by which the desired leaving water temperature is increased or lowered.



INFORMATION

When leaving water temperature modulation is enabled, the weather-dependent curve needs to be set to a higher position than [8-06] plus the minimum leaving water temperature setpoint required to reach a stable condition on the comfort setpoint for the room. To increase efficiency, modulation can lower the leaving water setpoint. By setting the weather-dependent curve to a higher position, it cannot drop below the minimum setpoint. Refer to the illustration below.



Leaving water temperature: Emitter type

#	Code	Description
[A.3.1.1.7]	[9-0B]	Reaction time of the system: <ul style="list-style-type: none"> • 0: Quick (default) Example: Small water volume and fan coils. • 1: Slow Example: Large water volume, floor heating loops. Depending on the system water volume and the heat emitters type, the heat up or cool down of a space can take longer. This setting can compensate for a slow or a quick heating/cooling system by adjusting the unit capacity during the heat up/cool down cycle.

5.2.6 Domestic hot water control

#	Code	Description
[A.4.1]	[6-0D]	Domestic hot water Type: <ul style="list-style-type: none"> • 0 (Reheat only): Only reheat operation is allowed. • 1 (Reheat + sched.)(default): Same as 2, but between the scheduled heatup cycles, reheat operation is allowed. • 2 (Scheduled only): The domestic hot water tank can ONLY be heated according to a schedule.
[A.4.5]	[6-0E]	The maximum temperature that users can select for the domestic hot water. You can use this setting to limit the temperature at the hot water taps.



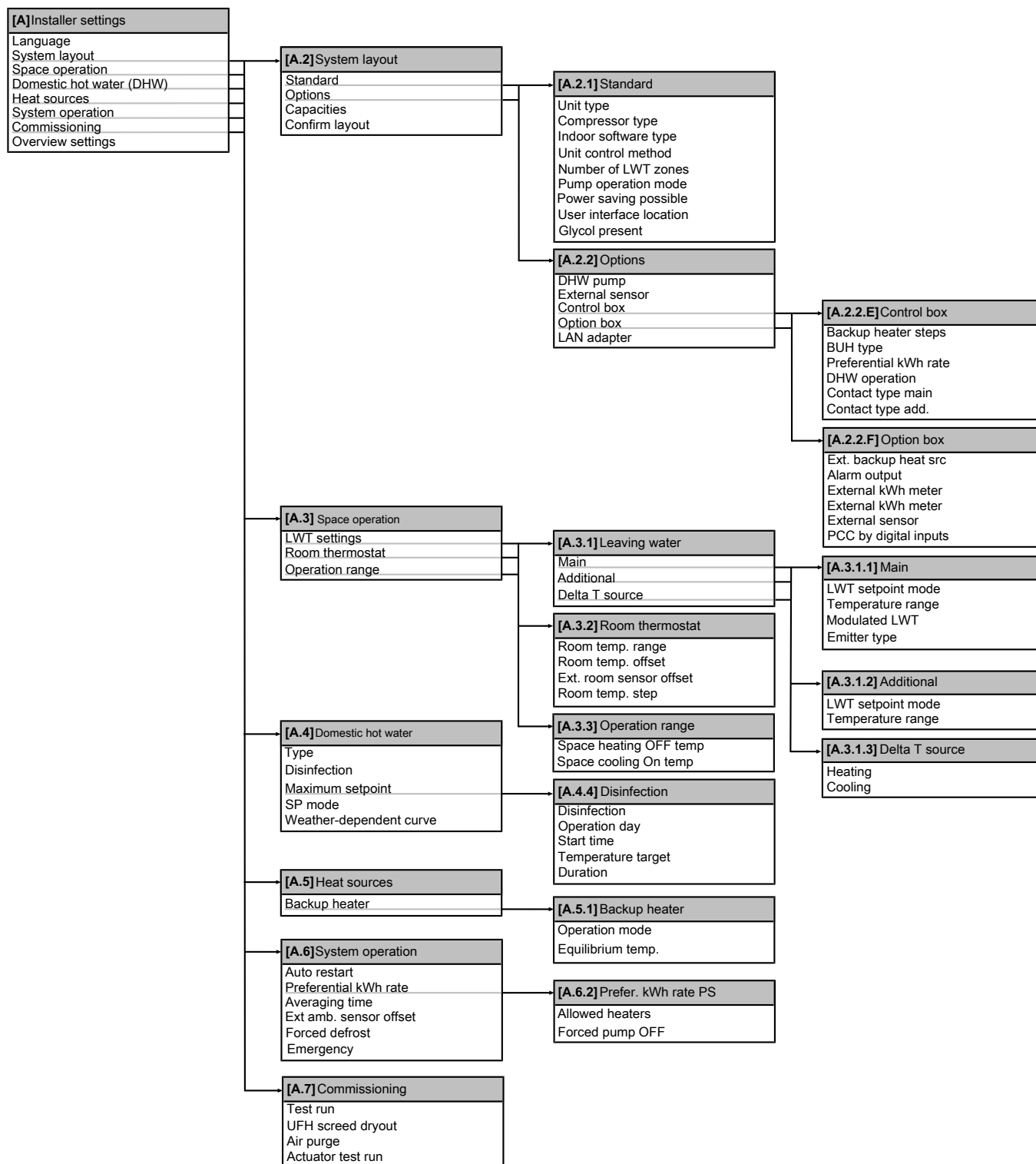
INFORMATION

There is a risk of space heating (cooling) capacity shortage/comfort problem (in case of frequent domestic hot water operation, frequent and long space heating/cooling interruption will happen) when selecting [6-0D]=0 ([A.4.1] Domestic hot water Type=Reheat only) in case of a domestic hot water tank without an internal booster heater.

5.2.7 Contact/helpdesk number

#	Code	Description
[6.3.2]	N/A	Number that users can call in case of problems.

5.3 Menu structure: Overview installer settings



INFORMATION

Depending on the selected installer settings and unit type, settings will be visible/invisible.

6 Commissioning

6 Commissioning



NOTICE

NEVER operate the unit without thermistors and/or pressure sensors/switches. Burning of the compressor might result.

6.1 Checklist before commissioning

After the installation of the unit, first check the following items. Once all below checks are fulfilled, the unit MUST be closed, ONLY then can the unit be powered up.

Depending on the system layout, not all components may be available.

<input type="checkbox"/>	You read the complete installation instructions, as described in the installer reference guide .
<input type="checkbox"/>	The outdoor unit is properly mounted.
<input type="checkbox"/>	The control box is properly mounted.
<input type="checkbox"/>	The option box is properly mounted.
<input type="checkbox"/>	The following field wiring has been carried out according to the available documentation and the applicable legislation: <ul style="list-style-type: none">Between the local supply panel and the outdoor unitBetween the outdoor unit and the control boxBetween the control box and the option boxBetween the local supply panel and the control boxBetween the local supply panel and the option boxBetween the outdoor unit and the valvesBetween the control box and the room thermostatBetween the control box and the domestic hot water tank
<input type="checkbox"/>	The system is properly earthed and the earth terminals are tightened.
<input type="checkbox"/>	The fuses or locally installed protection devices are installed according to this document, and have NOT been bypassed.
<input type="checkbox"/>	The power supply voltage matches the voltage on the identification label of the unit.
<input type="checkbox"/>	There are NO loose connections or damaged electrical components in the switch box.
<input type="checkbox"/>	There are NO damaged components or squeezed pipes on the inside of the outdoor unit.
<input type="checkbox"/>	Backup heater circuit breaker F1B (field supply) is turned ON.
<input type="checkbox"/>	Only for tanks with built-in booster heater: Booster heater circuit breaker F2B (on the switch box of the control box) is turned ON.
<input type="checkbox"/>	The correct pipe size is installed and the pipes are properly insulated.
<input type="checkbox"/>	There are no water leaks inside the outdoor unit.
<input type="checkbox"/>	The shut-off valves are properly installed and fully open.
<input type="checkbox"/>	The pressure relief valve purges water when opened.
<input type="checkbox"/>	The minimum water volume is guaranteed in all conditions. See "To check the water volume" in "3.2 Preparing water piping" on page 5 .



If **glycol** was added to the system, confirm the correct glycol concentration, and check if glycol setting [E-0D]=1.



NOTICE

- Make sure glycol setting [E-0D] matches the liquid inside the water circuit (0=water only, 1=water+glycol). If the glycol setting is NOT set correctly, the liquid inside the piping can freeze.
- When glycol is added to the system, but the glycol concentration is lower than prescribed, the liquid inside the piping can still freeze.



INFORMATION

The software is equipped with an "installer-on-site" mode ([4-0E]), that disables automatic operation by the unit. At first installation, setting [4-0E] is by default set to "1", meaning automatic operation is disabled. All protective functions are then disabled. If the user interface home pages are off, the unit will NOT operate automatically. To enable automatic operation and the protective functions, set [4-0E] to "0".

36 hours after the first power-on, the unit will automatically set [4-0E] to "0", ending "installer-on-site" mode and enabling the protective functions. If – after first installation – the installer returns to the site, the installer has to set [4-0E] to "1" manually.

6.2 Checklist during commissioning

<input type="checkbox"/>	The minimum flow rate is guaranteed in all conditions. See "To check the water volume and flow rate" in "3.2 Preparing water piping" on page 5 .
<input type="checkbox"/>	To perform an air purge .
<input type="checkbox"/>	To perform a test run .
<input type="checkbox"/>	To perform an actuator test run .
<input type="checkbox"/>	Underfloor screed dryout function The underfloor screed dryout function is started (if necessary).

6.2.1 To perform an air purge

Prerequisite: Make sure that the leaving water temperature home page, room temperature home page, and domestic hot water home page are turned OFF.

- Go to [A.7.3]: > Installer settings > Commissioning > Air purge.
- Set the type.
- Select Start air purge and press **OK**.
- Select OK and press **OK**.



NOTICE

The outdoor unit is equipped with a manual air purge valve. The air purge procedure requires manual action.



NOTICE

When purging air with the manual air purge valve of the unit, collect any fluid that might leak out of the valve. If this fluid is NOT collected, it might drip on internal components and damage the unit.

**INFORMATION**

- To purge air, use all air purge valves present in the system. This includes the manual air purge valve of the outdoor unit, as well as any field-supplied valves.
- If the system contains a backup heater, also use the air purge valve of the backup heater.
- If the system contains valve kit EKMBHBP1, it is required to – during the air purge – manually switch the position of the valve kit's 3-way valve by turning its knob, this to prevent air from remaining in the bypass. For more information, refer to the instruction sheet of the valve kit.

6.2.2 To perform a test run

Prerequisite: Make sure that the leaving water temperature home page, room temperature home page, and domestic hot water home page are turned OFF.

- 1 Set the user permission level to Installer. See ["To set the user permission level to Installer" on page 13](#).
- 2 Go to [A.7.1]: > Installer settings > Commissioning > Test run.
- 3 Select a test and press **OK**. **Example:** Heating.
- 4 Select OK and press **OK**.

Result: The test run starts. It stops automatically when done (±30 min). To stop it manually, press , select OK and press **OK**.

**INFORMATION**

If 2 user interfaces are present, you can start a test run from both user interfaces.

- The user interface used to start the test run displays a status screen.
- The other user interface displays a "busy" screen. You cannot use the user interface as long as the "busy" screen is shown.

6.2.3 To perform an actuator test run

Prerequisite: Make sure that the leaving water temperature home page, room temperature home page, and domestic hot water home page are turned OFF.

- 1 Set the user permission level to Installer. See ["To set the user permission level to Installer" on page 13](#).
- 2 Go to [A.7.4]: > Installer settings > Commissioning > Actuator test run.
- 3 Select an actuator and press **OK**. **Example:** Pump.
- 4 Select OK and press **OK**.

Result: The actuator test run starts. It automatically stops when finished. To stop it manually, press , select OK and press **OK**.

Possible actuator test runs

- Booster heater test
- Backup heater test
- Pump test

**INFORMATION**

Make sure that all air is purged before executing the test run. Also avoid disturbances in the water circuit during the test run.

- 2-way valve test
- 3-way valve test
- Alarm output test
- Cooling/heating signal test

- Quick heat-up test
- Circulation pump test

6.2.4 To perform an underfloor heating screed dryout

Prerequisite: Make sure there is ONLY 1 user interface connected to your system to perform an underfloor heating screed dryout.

Prerequisite: Make sure that the leaving water temperature home page, room temperature home page, and domestic hot water home page are turned OFF.

- 1 Go to [A.7.2]: > Installer settings > Commissioning > UFH screed dryout.
- 2 Set a dryout program.
- 3 Select Start dryout and press **OK**.
- 4 Select OK and press **OK**.

Result: The underfloor heating screed dryout starts. It stops automatically when done. To stop it manually, press , select OK and press **OK**.

**NOTICE**

To perform an underfloor heating screed dryout, room frost protection needs to be disabled ([2-06]=0). By default, it is enabled ([2-06]=1). However, due to the "installer-on-site" mode (see "Checklist before commissioning"), room frost protection will be automatically disabled for 36 hours after the first power-on.

If the screed dryout still needs to be performed after the first 36 hours of power-on, manually disable room frost protection by setting [2-06] to "0", and KEEP it disabled until the screed dryout has finished. Ignoring this notice will result in cracking of the screed.

**NOTICE**

For the underfloor heating screed dryout to be able to start, make sure the following settings are met:

- [4-00]=1
- [C-02]=0
- [D-01]=0
- [4-08]=0
- [4-01]≠1

7 Hand-over to the user

Once the test run is finished and the unit operates properly, please make sure the following is clear for the user:

- Fill in the installer setting table (in the operation manual) with the actual settings.
- Make sure that the user has the printed documentation and ask him/her to keep it for future reference. Inform the user that he can find the complete documentation at the URL mentioned earlier in this manual.
- Explain the user how to properly operate the system and what to do in case of problems.
- Show the user what to do for the maintenance of the unit.
- Explain the user about energy saving tips as described in the operation manual.

7 Hand-over to the user


7.1 About locking and unlocking

If required, it is possible to lock the buttons of the main user interface, making it impossible for the user to operate it. For the user to be able to change setpoint temperatures, the simplified user interface or an external room thermostat is then required.


You can use the following locking modes:

- **Function lock:** Locks a specific function to prevent people from changing its settings.
- **Button lock:** Locks all buttons to prevent users from changing settings.

To activate or deactivate a function lock

- 1 Press  to go to the menu structure.
- 2 Press **OK** for more than 5 seconds.
- 3 Select a function and press **OK**.
- 4 Select Lock or Unlock, and press **OK**.

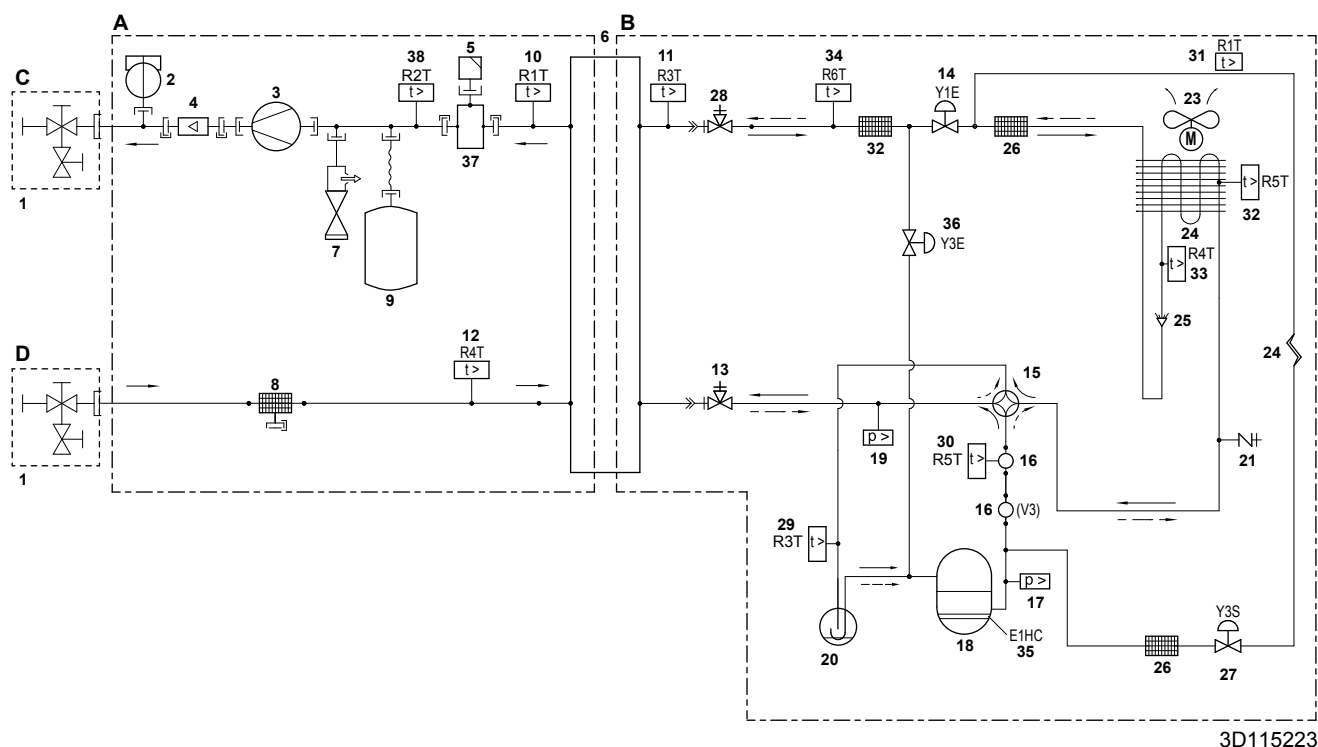
To activate or deactivate button lock

- 1 Press  to go to one of the home pages.
- 2 Press **OK** for more than 5 seconds.

8 Technical data

A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible). The **full set** of latest technical data is available on the Daikin extranet (authentication required).

8.1 Piping diagram: Outdoor unit



- | | |
|--|--|
| 1 Shut-off valve with drain/fill valve | 24 Capillary tube |
| 2 Flow switch | 25 Distributor |
| 3 Pump | 26 Refrigerant filter |
| 4 Flow sensor | 27 Solenoid valve |
| 5 Air purge | 28 Liquid stop valve with service port |
| 6 Plate heat exchanger | 29 Suction pipe thermistor |
| 7 Safety valve | 30 Discharge pipe thermistor |
| 8 Water filter | 31 Outdoor air temperature thermistor |
| 9 Expansion vessel | 32 Heat exchanger thermistor (middle) |
| 10 Outlet water heat exchanger thermistor | 33 Heat exchanger thermistor (distributor) |
| 11 Refrigerant liquid side thermistor | 34 Liquid pipe thermistor |
| 12 Inlet water thermistor | 35 Crankcase heater |
| 13 Gas stop valve with service port | 36 Electronic expansion valve (injection) |
| 14 Electronic expansion valve (main) | 37 Backup heater |
| 15 4-way valve | 38 Backup heater thermistor |
| 16 Muffler (lower muffler on diagram: only for V3) | A Water side |
| 17 High pressure switch | B Refrigerant side |
| 18 Compressor | C Outlet |
| 19 Pressure sensor | D Inlet |
| 20 Accumulator | Field installed |
| 21 Service port 5/16" flare | Refrigerant flow - cooling |
| 22 Heat exchanger | Refrigerant flow - heating |
| 23 Fan motor (propeller fan) | |

8.2 Wiring diagram: Outdoor unit

See the internal wiring diagram supplied with the unit (on the inside of the front plate). The abbreviations used are listed below.

(1) Connection diagram

English	Translation
Connection diagram	Connection diagram
Outdoor	Outdoor
ON	ON
OFF	OFF
See note ***	See note ***
Upper Fan	Upper fan
Lower Fan	Lower fan

English	Translation
Injection	Injection
Main	Main



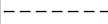
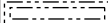



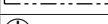

(2) Layout

English	Translation
Front	Front
Position of compressor terminal	Position of compressor terminal

(3) Notes

English	Translation
Notes	Notes

8 Technical data

English	Translation
	Connection
X1M	Main terminal
	Earth wiring
	Field supply
	Option
	Switch box
	PCB
	Wiring depending on model
	Protective earth
	Field wire

NOTES:

- 1 Refer to the wiring diagram sticker (on the back of the service cover) for how to use the BS1~BS4 and DS1 switches.
- 2 When operating, do not short-circuit protective device S1PH.
- 3 Refer to the combination table and the option manual for how to connect the wiring to X6A.
- 4 Colours: BLK: black; RED: red; BLU: blue; WHT: white; GRN: green; YLW: yellow; ORG: orange.
- 5 Confirm the method of setting the selector switches (DS1) by service manual. Factory setting of all switches: OFF.

(4) Legend

A1P	Printed circuit board (main)
A2P (V3 only)	Printed circuit board (service)
A2P (W1 only)	Printed circuit board (inverter)
A3P	Printed circuit board (noise filter)
A4P (V3 only)	Printed circuit board (communication)
BS1~BS4 (A2P) (V3 only)	Push-button switch
BS1~BS4 (A1P) (W1 only)	Push-button switch
C1~C4 (A1P)(V3 only)	Capacitor
C1~C3 (A2P)(W1 only)	Capacitor
DS1 (A2P)(V3 only)	DIP switch
DS1 (A1P)(W1 only)	DIP switch
E1H	* Bottom plate heater
E1HC	Crankcase heater
F1U, F3U, F4U (A*P) (V3 only)	Fuse T 6.3 A 250 V
F6U (A1P) (V3 only)	Fuse T 5 A 250 V
F7U, F8U (V3 only)	* Fuse F 1 A 250 V
F1U, F2U (A1P) (W1 only)	Fuse T 31.5 A 500 V
F3U~F6U (A1P) (W1 only)	Fuse T 6.3 A 500 V
F7U (A2P) (W1 only)	Fuse T 5 A 250 V
F8U, F9U (W1 only)	* Fuse F 1 A 250 V
H1P~H7P (A2P) (V3 only)	LED (service monitor is orange)

H1P~H7P (A1P) (W1 only)	LED (service monitor is orange)
HAP (A1P)(V3 only)	LED (service monitor is green)
HAP (A1P~A2P) (W1 only)	LED (service monitor is green)
K1M~K2M (A2P) (W1 only)	Magnetic contactor (main-upload)
K1R (A1P)	Magnetic relay (Y1S)
K1R (A2P)(W1 only)	Magnetic relay (upload)
K2R (A1P)(V3 only)	Magnetic relay (Y3S)
K3R (A1P)(V3 only)	Magnetic relay (E1H)
K2R (A1P)(W1 only)	Magnetic relay (E1H)
K3R (A1P)(W1 only)	Magnetic relay (Y3S)
K4R (A1P)	Magnetic relay (E1HC)
K10R (A1P)(V3 only)	Magnetic relay (upload)
K11R (A1P)(V3 only)	Magnetic relay (main)
L1R (V3 only)	Reactor
L1R~L3R (W1 only)	Reactor
L4R (W1 only)	Reactor (outdoor fan motor)
M1C	Compressor motor
M1F, M2F	Fan motor
PS (A1P)(V3 only)	Switching power supply
PS (A2P)(W1 only)	Switching power supply
Q1DI	# Earth leakage circuit breaker (30 mA)
R1, R2 (A1P) (V3 only)	Resistor
R1, R2 (A2P) (W1 only)	Resistor
R1T	Thermistor (air)
R2T	Thermistor (discharge)
R3T	Thermistor (suction)
R4T	Thermistor (heat exchanger)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (liquid)
R7T (W1 only)	Thermistor (fin)
R10T (V3 only)	Thermistor (fin)
RC (A4P)(V3 only)	Signal receiver circuit
S1NPH	Pressure sensor
S1PH	High pressure switch
TC (A4P)(V3 only)	Signal transmission circuit
V1R (A1P)(V3 only)	Power module
V1R~V2R (A2P) (W1 only)	Power module
V2R~V3R (A1P) (V3 only)	Diode module
V3R (A2P)(W1 only)	Diode module

V1T (A1P)(V3 only)	IGBT (Insulated Gate Bipolar Transistor)
X1M	Terminal strip
X*A (A*P)	Connector
Y1E, Y3E	Electronic expansion valve
Y1S	Solenoid valve (4-way valve)
Y3S	Solenoid valve (hot gas pass)
Z1C~Z3C (V3 only)	Noise filter (ferrite core)
Z1C~Z9C (W1 only)	Noise filter (ferrite core)
Z1F~Z4F (A*P) (V3 only)	Noise filter
Z1F~Z3F (A1P) (W1 only)	Noise filter
Z4F (A3P)(W1 only)	Noise filter

Field supply
* Optional

Outdoor unit: hydro module

English	Translation
BUH Switch box	Backup heater switch box
Compressor switch box	Compressor switch box
Control box	Control box
External outdoor ambient sensor option	External outdoor ambient sensor option
Hydro switch box supplied from compressor module	Hydro switch box supplied from compressor module
Hydro switch box	Hydro switch box
Indoor	Indoor
Normal kWh rate power supply	Normal kWh rate power supply
Only for normal power supply (standard)	Only for normal power supply (standard)
Only for preferential kWh rate power supply (compressor)	Only for preferential kWh rate power supply (compressor)
Outdoor	Outdoor
Use normal kWh rate power supply for hydro switch box	Use normal kWh rate power supply for hydro switch box
A1P	Main PCB
A2P	Current loop PCB
B1L	Flow sensor
E11H	Flextube heater (15.6 W)
E12H	Expansion vessel heater (50 W)
E13H	PHE heater (50 W)
E14H	Internal pipe heater 1 (50 W)
F1U (A1P)	Fuse T5 A 250V
K*R (A1P)	Magnetic relay
M1P	Main supply pump
Q*DI	# Earth leakage circuit breaker
Q1L	Thermal protector backup heater
R1T	Outlet water heat exchanger thermistor
R2T	Outlet backup heater thermistor
R3T	Refrigerant liquid side thermistor
R4T	Inlet water thermistor
R6T	* External outdoor ambient sensor
S1L	Flow switch
TR1	Power supply transformer

English	Translation
X*A, X*Y (A1P, A2P)	Connector
X*M	Terminal strip

*: Optional
#: Field supply

Outdoor backup heater power supply

English	Translation
Only for ***	Only for ***
E3H	Backup heater element (3 kW)
F1B	# Overcurrent fuse backup heater
F1T	Thermal fuse backup heater
K1M	Contacteur backup heater
K5M	Safety contacteur backup heater
Q1DI	# Earth leakage circuit breaker
X4M	Terminal strip

#: Field supply

Control box

English	Translation
Continuous	Continuous
Control box	Control box
DHW option	Domestic hot water option
DHW pump	Domestic hot water pump
DHW pump output	Domestic hot water pump output
Dual set point application (refer to installation manual)	Dual set point application (refer to installation manual)
Heat pump convactor	Heat pump convactor
Hydro switch box	Hydro switch box
Inrush	Inrush
Max. load	Maximum load
NO valve	Normal open valve
Only for ***	Only for ***
Only for ext. sensor (floor or ambient)	Only for external sensor (floor or ambient)
Only for wired On/OFF thermostat	Only for wired On/OFF thermostat
Only for wireless On/OFF thermostat	Only for wireless On/OFF thermostat
Option box	Option box
Preferential kWh rate power supply contact: 5 V DC detection (voltage supplied by PCB)	Preferential kWh rate power supply contact: 5 V DC detection (voltage supplied by PCB)
A3P	* On/OFF thermostat (PC=power circuit)
A3P	* Heat pump convactor
A4P	* Extension PCB (control, optional)
A5P	* User interface PCB
A7P	* Receiver PCB (wireless On/OFF thermostat)
DS1 (A4P)	* DIP switch
E4H	* Booster heater (3 kW)
F1U	Fuse T 5 A 500 V
F1U (A4P)	Fuse T 2 A 250 V
F2B	* Overcurrent fuse booster heater
F2U (A4P)	Fuse T 2 A 250 V for 3-way valve
K1A	Relay for heating
K1	* Terminal strip
K2A	Relay for cooling

8 Technical data

English		Translation
K2	*	Booster heater
K3M	*	Contactor booster heater
M2P	#	Domestic hot water pump
M2S	#	Shut-off valve
M3S		3-way valve for domestic hot water
M4S	*	Valve kit
PC (A7P)		Power circuit
Q2L	*	Thermal protector booster heater
Q5DI, Q6DI		Earth leakage circuit breaker
R1H (A3P)	*	Humidity sensor
R1T (A3P)	*	Ambient sensor On/OFF thermostat
R1T (A5P)		Ambient sensor user interface
R2T	*	External indoor floor/ambient thermistor
R5T	*	Domestic hot water thermistor
S1S	#	Preferential kWh rate power supply contact
STB	*	Thermal protector booster heater
X*A (A4P)		Connector
X*M		Terminal strip

*: Optional
#: Field supply

Control box option: option box







English		Translation
Alarm output		Alarm output
Control box		Control box
Electric pulse meter inputs: 5 V DC pulse detection (voltage supplied by PCB)		Electric pulse meter inputs: 5 V DC pulse detection (voltage supplied by PCB)
Ext. heat source		External heat source
External indoor ambient sensor option		External indoor ambient sensor option
Indoor		Indoor
Max. load		Maximum load
Max. voltage		Maximum voltage
Min. load		Minimum load
Option box		Option box
ON		ON
OFF		OFF
Space C/H On/OFF output		Space cooling/heating On/OFF output
A4P		Extension PCB (control, optional)
DS1 (A4P)		DIP switch
F1U (A4P)		Fuse T 2 A 250 V
F2U (A4P)		Fuse T 2 A 250 V for 3-way valve
R6T	*	External indoor ambient sensor option
S5P-S6P	#	Electrical meters
X*A (A4P)		Connector
X*M		Terminal strip

*: Optional
#: Field supply

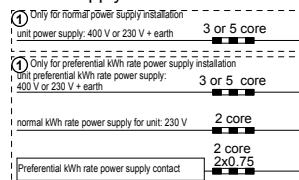
Electrical connection diagram

Notes:

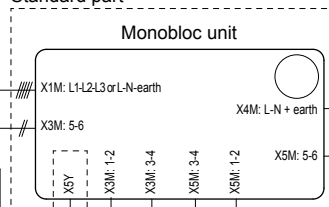
- In case of signal cable: keep minimum distance to power cables > 5 cm
- Available heaters: see combination table

Typical configuration		
		
		2 low voltage wires
		Standard: 4 low voltage wires Optional: 4 high voltage wires

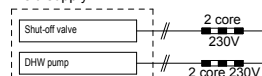
Power supply



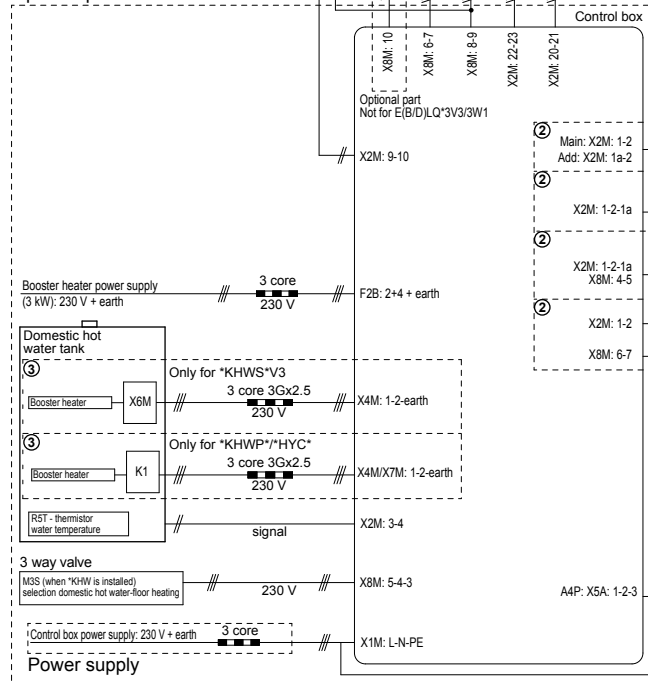
Standard part



Field supply



Optional part



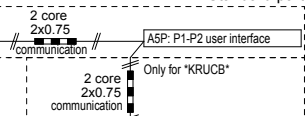
Backup heater power supply (3 kW): 230 V + earth (F1B)

Optional part

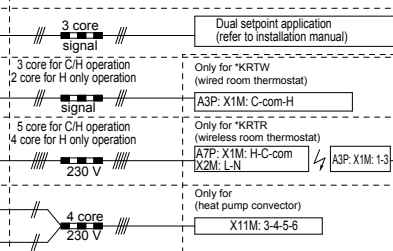
Only for EKRSCA1

External outdoor thermistor

Standard part



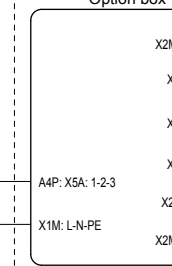
Optional part

External room thermostat / Heat pump convactor
(main and/or additional zone)

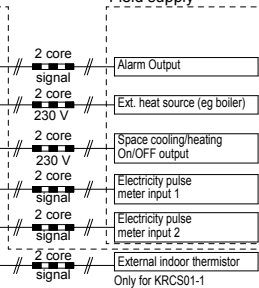
Optional part

Optional part

Option box



Field supply



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DAIKIN EUROPE N.V.

Zandvoordestraat 300, B-8400 Oostende, Belgium

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