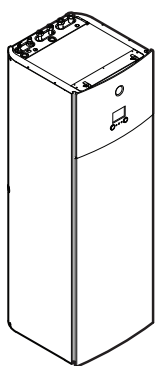




Installation manual

Daikin Altherma – Low temperature split



EHVH04S23DAV(G)
EHVH08S23DAV(G)

Installation manual
Daikin Altherma – Low temperature split

English

Table of contents

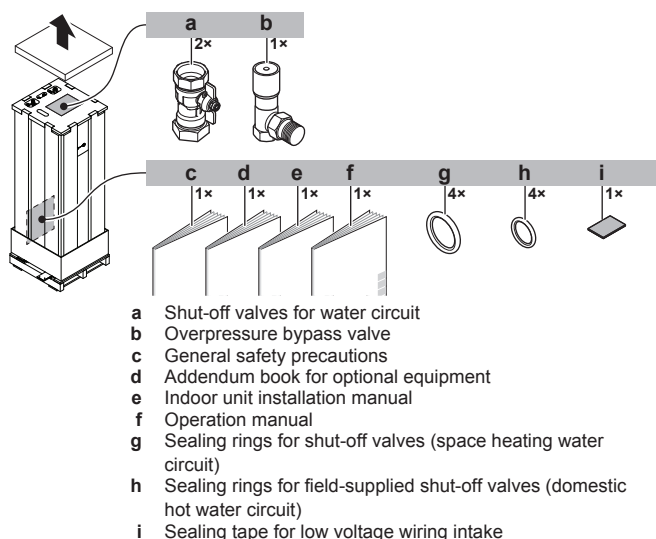
1 About the documentation	3	6 Commissioning	20
1.1 About this document.....	3	6.1 Checklist before commissioning.....	20
2 About the box	4	6.2 Checklist during commissioning.....	20
2.1 Indoor unit.....	4	6.2.1 To check the minimum flow rate.....	20
2.1.1 To remove the accessories from the indoor unit.....	4	6.2.2 To perform an air purge.....	20
2.1.2 To handle the indoor unit.....	4	6.2.3 To perform an operation test run.....	21
3 Preparation	4	6.2.4 To perform an actuator test run.....	21
3.1 Preparing the installation site.....	4	6.2.5 To perform an underfloor heating screed dryout.....	21
3.1.1 Installation site requirements of the indoor unit.....	4	7 Hand-over to the user	22
3.2 Preparing water piping.....	6	8 Technical data	23
3.2.1 To check the water volume and flow rate.....	6	8.1 Piping diagram: Indoor unit.....	23
3.3 Preparing electrical wiring.....	6	8.2 Wiring diagram: Indoor unit.....	24
3.3.1 Overview of electrical connections for external and internal actuators.....	6	8.3 Table 1 – Maximum refrigerant charge allowed in a room: indoor unit.....	27
4 Installation	6	8.4 Table 2 – Minimum floor area: indoor unit.....	27
4.1 Opening the units.....	6	8.5 Table 3 – Minimum venting opening area for natural ventilation: indoor unit.....	27
4.1.1 To open the indoor unit.....	6	1 About the documentation	
4.1.2 To open the switch box cover of the indoor unit.....	7	1.1 About this document	
4.1.3 To lower the switch box on the indoor unit.....	7	Target audience	
4.2 Mounting the indoor unit.....	8	Authorised installers	
4.2.1 To install the indoor unit.....	8	Documentation set	
4.2.2 To connect the drain hose to the drain.....	8	This document is part of a documentation set. The complete set consists of:	
4.3 Connecting the refrigerant piping.....	8	▪ General safety precautions:	
4.3.1 To connect the refrigerant piping to the indoor unit....	8	▪ Safety instructions that you must read before installing	
4.4 Connecting the water piping.....	9	▪ Format: Paper (in the box of the indoor unit)	
4.4.1 To connect the water piping.....	9	▪ Indoor unit installation manual:	
4.4.2 To connect the recirculation piping.....	9	▪ Installation instructions	
4.4.3 To fill the water circuit.....	9	▪ Format: Paper (in the box of the indoor unit)	
4.4.4 To fill the domestic hot water tank.....	9	▪ Outdoor unit installation manual:	
4.4.5 To insulate the water piping.....	9	▪ Installation instructions	
4.5 Connecting the electrical wiring.....	10	▪ Format: Paper (in the box of the outdoor unit)	
4.5.1 To connect the electrical wiring on the indoor unit.....	10	▪ Installer reference guide:	
4.5.2 To connect the main power supply.....	10	▪ Preparation of the installation, good practices, reference data,...	
4.5.3 To connect the shut-off valve.....	11	▪ Format: Digital files on http://www.daikineurope.com/support-and-manuals/product-information/	
4.5.4 To connect the electrical meters.....	11	▪ Addendum book for optional equipment:	
4.5.5 To connect the domestic hot water pump.....	11	▪ Additional info about how to install optional equipment	
4.5.6 To connect the alarm output.....	11	▪ Format: Paper (in the box of the indoor unit) + Digital files on http://www.daikineurope.com/support-and-manuals/product-information/	
4.5.7 To connect the space heating ON/OFF output.....	12	Latest revisions of the supplied documentation may be available on the regional Daikin website or via your dealer.	
4.5.8 To connect the changeover to external heat source....	12	The original documentation is written in English. All other languages are translations.	
4.5.9 To connect the power consumption digital inputs.....	12	Technical engineering data	
4.5.10 To connect the safety thermostat (normal closed contact).....	12	▪ A subset of the latest technical data is available on the regional Daikin website (publicly accessible).	
4.5.11 To connect the anti-legionella heater power supply....	13	▪ The full set of latest technical data is available on the Daikin extranet (authentication required).	
4.6 Finishing the indoor unit installation.....	13		
4.6.1 To close the indoor unit.....	13		
5 Configuration	13		
5.1 Overview: Configuration.....	13		
5.1.1 To access the most used commands.....	14		
5.2 Configuration wizard.....	14		
5.2.1 Configuration wizard: Language.....	14		
5.2.2 Configuration wizard: Time and date.....	14		
5.2.3 Configuration wizard: System.....	15		
5.2.4 Configuration wizard: Backup heater.....	16		
5.2.5 Configuration wizard: Main zone.....	16		
5.2.6 Configuration wizard: Additional zone.....	17		
5.2.7 Detailed screen with weather-dependent curve.....	17		
5.2.8 Configuration wizard: Tank.....	18		
5.3 Settings menu.....	18		
5.3.1 Main zone.....	18		
5.3.2 Additional zone.....	18		
5.3.3 Information.....	18		
5.4 Menu structure: Overview installer settings.....	19		

2 About the box

2 About the box

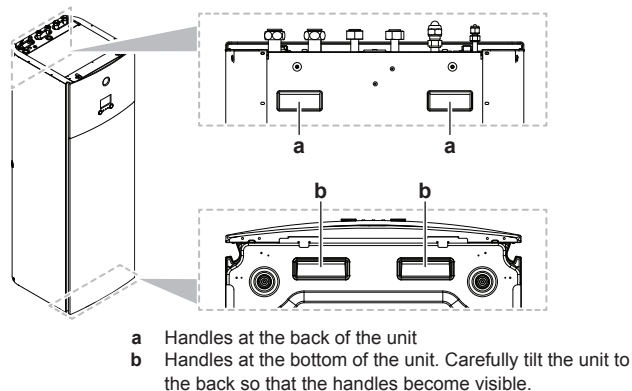
2.1 Indoor unit

2.1.1 To remove the accessories from the indoor unit



2.1.2 To handle the indoor unit

Use the handles at the back and at the bottom to carry the unit.



3 Preparation

3.1 Preparing the installation site



WARNING

The appliance shall be stored in a room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater).

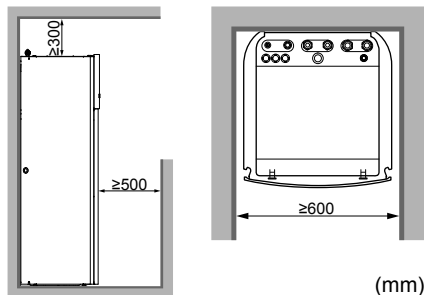


WARNING

DO NOT reuse refrigerant piping that has been used with any other refrigerant. Replace the refrigerant pipes or clean thoroughly.

3.1.1 Installation site requirements of the indoor unit

- The indoor unit is designed for indoor installation only and for the following ambient temperatures:
 - Space heating operation: 5~30°C
 - Domestic hot water production: 5~35°C
- Mind the following spacing installation guidelines:



INFORMATION

If you have limited installation space, do the following before installing the unit in its final position: ["4.2.2 To connect the drain hose to the drain"](#) on page 8. It requires to remove one or both side panels.

Special requirements for R32



WARNING

- Do NOT pierce or burn.
- Do NOT use means to accelerate the defrosting process or to clean the equipment, other than those recommended by the manufacturer.
- Be aware that R32 refrigerant does NOT contain an odour.



WARNING

The appliance shall be stored so as to prevent mechanical damage and in a well-ventilated room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater) and have a room size as specified below.



NOTICE

- Do NOT re-use joints which have been used already.
- Joints made in installation between parts of refrigerant system shall be accessible for maintenance purposes.



WARNING

Make sure installation, servicing, maintenance and repair comply with instructions from Daikin and with applicable legislation (for example national gas regulation) and are executed only by authorised persons.



NOTICE

- Pipework shall be protected from physical damage.
- Installation of pipework shall be kept to a minimum.

If the total refrigerant charge in the system is ≥ 1.84 kg (i.e. if the piping length is ≥ 27 m), you need to comply with the minimum floor area requirements as described in the following flow chart. The flow chart uses the following tables: "8.3 Table 1 – Maximum refrigerant charge allowed in a room: indoor unit" on page 27, "8.4 Table 2 – Minimum floor area: indoor unit" on page 27 and "8.5 Table 3 – Minimum venting opening area for natural ventilation: indoor unit" on page 27.



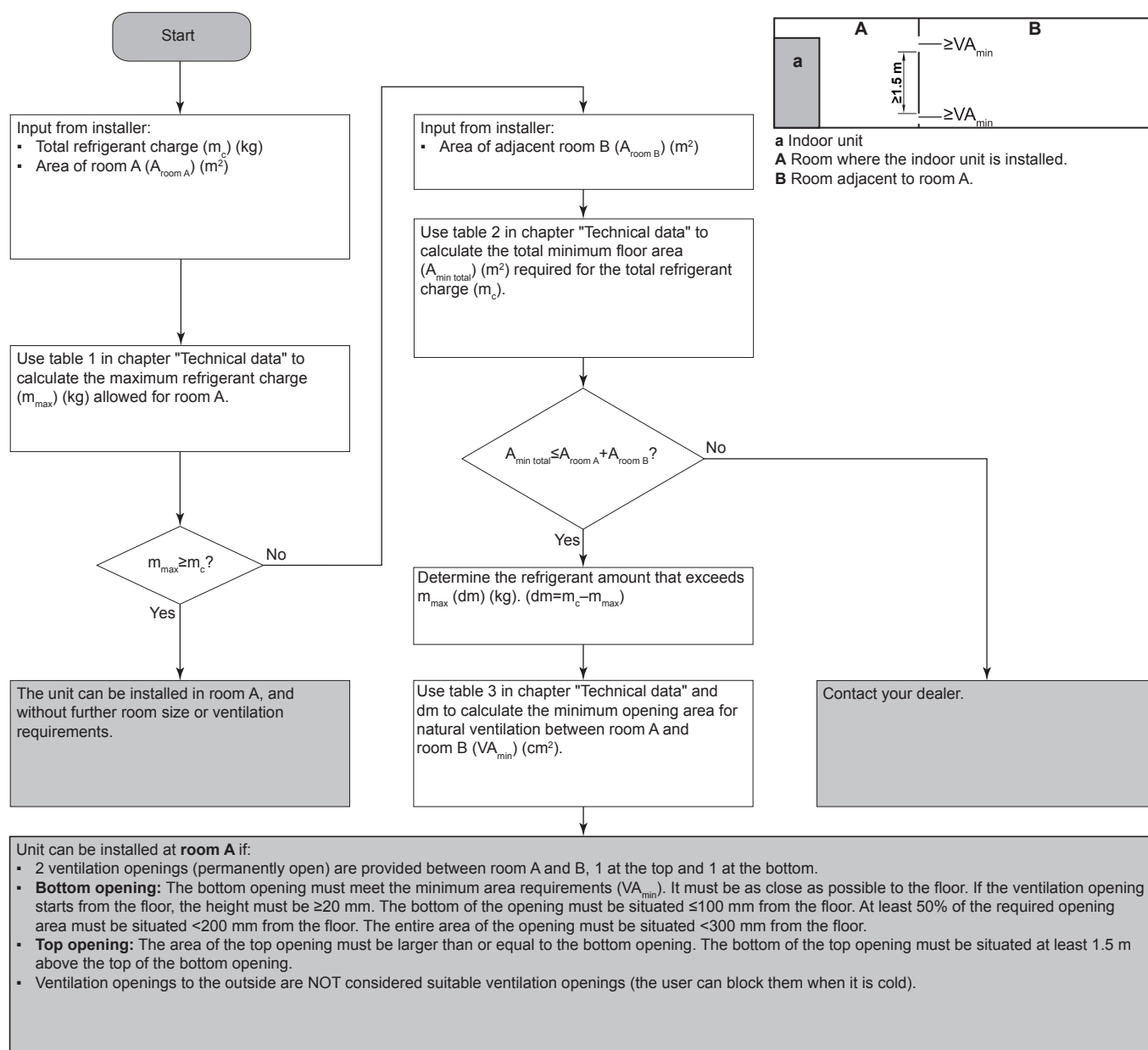
INFORMATION

Systems with a total refrigerant charge (m_c) < 1.84 kg (i.e. if the piping length is < 27 m) are NOT subjected to any requirements to the installation room.



INFORMATION

Multiple indoor units. If two or more indoor units are installed in a room, you must consider the maximum refrigerant charge that can be released in the room when a SINGLE leak occurs. **Example:** If two indoor units are installed in the room, each with its own outdoor unit, then you have to consider the refrigerant charge of the largest indoor-outdoor combination.



4 Installation

3.2 Preparing water piping



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.

- **Valve towards expansion vessel.** The valve towards the expansion vessel (if equipped) MUST be open.

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 litres without backup heater and minimum 10 litres with optional backup heater, the internal water volume of the indoor unit NOT included.



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.

Minimum flow rate

Check that the minimum flow rate in the installation is guaranteed in all conditions. This minimum flow rate is required during defrost/backup heater operation (if applicable). For this purpose, use the overpressure bypass valve delivered with the unit, and respect the minimum water volume.



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

12 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 and indoor unit power supply			
1	Power supply for outdoor unit	2+GND	(a)
2	Power supply and interconnection cable to indoor unit	3	(f)
3	Power supply for anti-legionella heater	2+GND	(c)
4	Preferential kWh rate power supply (voltage free contact)	2	(d)
5	Normal kWh rate power supply	2	6.3 A
Optional equipment			

Item	Description	Wires	Maximum running current
6	User interface used as room thermostat	2	(e)
7	Room thermostat	3 or 4	100 mA ^(b)
8	Outdoor ambient temperature sensor	2	(b)
9	Indoor ambient temperature sensor	2	(b)
10	Heat pump convector	2	100 mA ^(b)
Field supplied components			
11	Shut-off valve	2	100 mA ^(b)
12	Electricity meter	2 (per meter)	(b)
13	Domestic hot water pump	2	(b)
14	Alarm output	2	(b)
15	Changeover to external heat source control	2	(b)
16	Space cool/heat operation control	2	(b)
17	Power consumption digital inputs	2 (per input signal)	(b)
18	Safety thermostat	2	(d)

- (a) Refer to name plate on outdoor unit.
 (b) Minimum cable section 0.75 mm².
 (c) Cable section 2.5 mm².
 (d) Cable section 0.75 mm² till 1.25 mm²; maximum length: 50 m. Voltage-free contact shall ensure the minimum applicable load of 15 V DC, 10 mA.
 (e) Cable section 0.75 mm² till 1.25 mm²; maximum length: 500 m.
 (f) Cable section 1.5 mm².



NOTICE

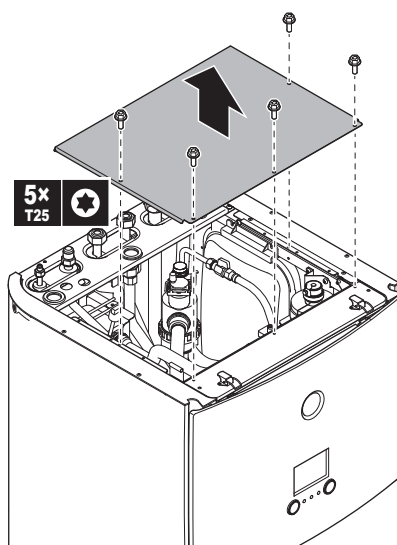
More technical specifications of the different connections are indicated on the inside of the indoor unit.

4 Installation

4.1 Opening the units

4.1.1 To open the indoor unit

- 1 Remove the top panel.

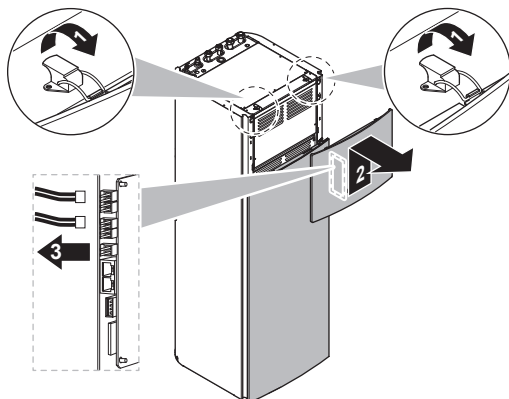


- 2 Remove the user interface panel. Open the hinges at the top and slide the top panel upwards.



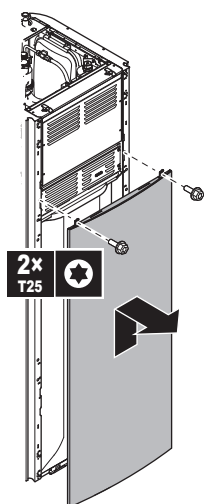
NOTICE

If you remove the user interface panel, also disconnect the cables from the back of the panel to prevent damage.

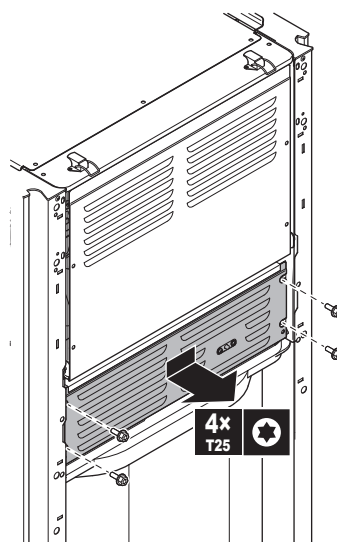
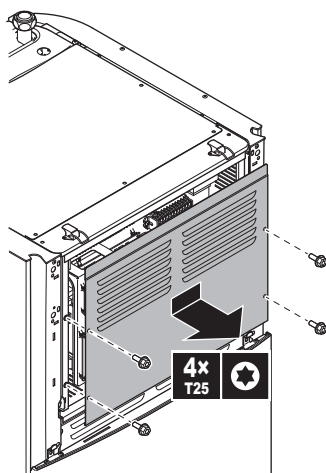


- 3 If necessary, remove the front plate. This is, for example, necessary in the following cases:

- "4.1.3 To lower the switch box on the indoor unit" on page 7
- "4.2.2 To connect the drain hose to the drain" on page 8
- When you need access to the high voltage switch box



4.1.2 To open the switch box cover of the indoor unit

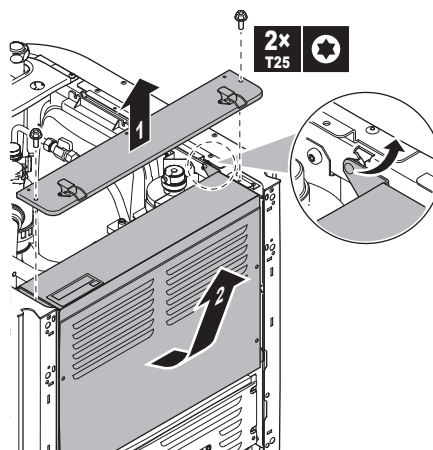


4.1.3 To lower the switch box on the indoor unit

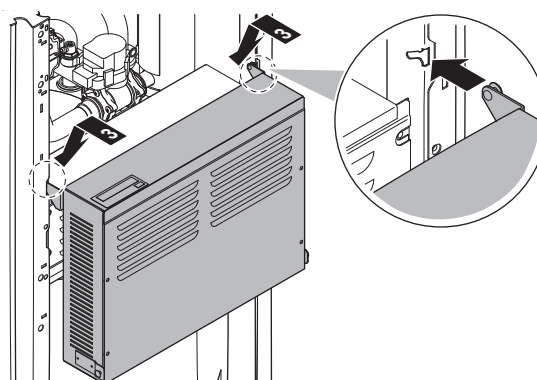
During the installation, you will need access to the inside of the indoor unit. To have easier front access, put the switch box lower on the unit as follows:

Prerequisite: The user interface panel and front panel have been removed.

- 1 Remove the top panel that keeps the switch box into place at the top of the unit.
- 2 Tilt the switch box to the front and lift it out of its hinges.



- 3 Place the switch box lower on the unit. Use the 2 hinges located lower on the unit.

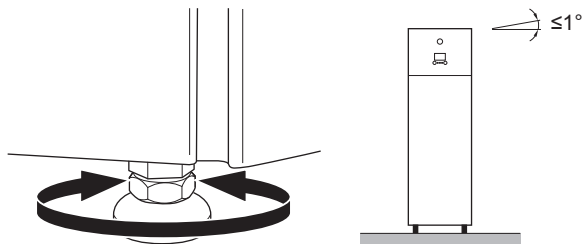


4 Installation

4.2 Mounting the indoor unit

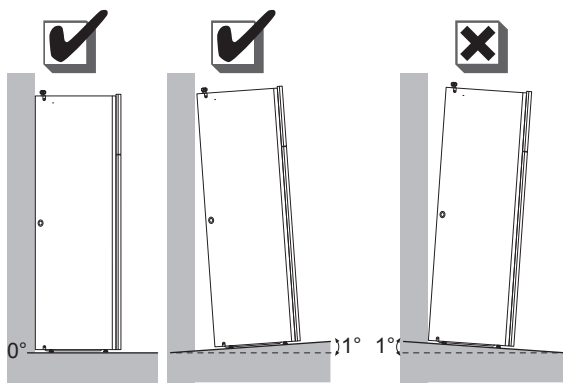
4.2.1 To install the indoor unit

- 1 Lift the indoor unit from the pallet and place it on the floor. Also see "2.1.2 To handle the indoor unit" on page 4.
- 2 Connect the drain hose to the drain. See "4.2.2 To connect the drain hose to the drain" on page 8.
- 3 Slide the indoor unit into position.
- 4 Adjust the height of the leveling feet to compensate for floor irregularities. The maximum allowed deviation is 1° .



NOTICE

Do NOT tilt the unit forwards:



4.2.2 To connect the drain hose to the drain

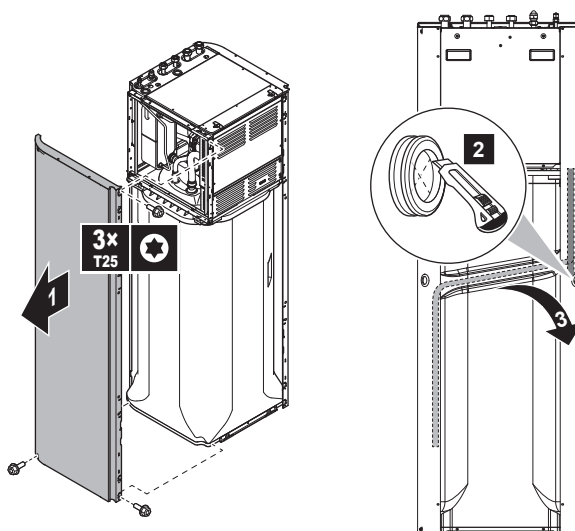
Water coming from the pressure relief valve is collected in the drain pan. The drain pan is connected to a drain hose inside the unit. You must connect the drain hose to an appropriate drain according to the applicable legislation. You can route the drain hose through the left or right side panel.

Prerequisite: The user interface panel and front panel have been removed.

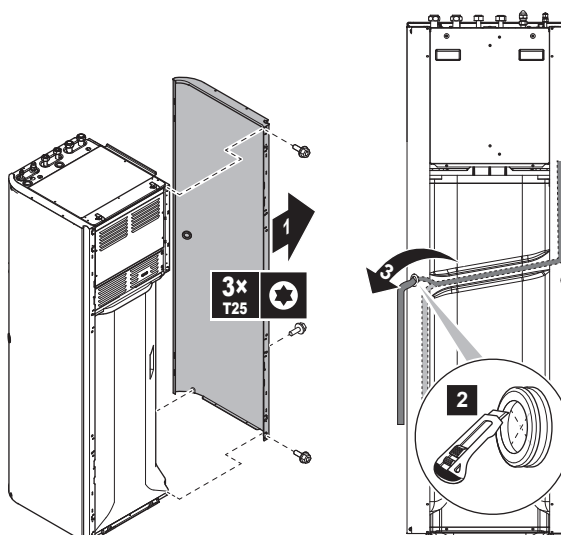
- 1 Remove one of the side panels.
- 2 Cut out the rubber grommet.
- 3 Pull the drain hose through the hole.
- 4 Reattach the side panel. Ensure the water can flow through the drain tube.

It is recommended to use a tundish to collect the water.

Option 1: Through the left side panel



Option 2: Through the right side panel

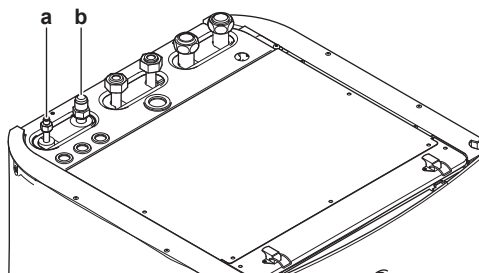


4.3 Connecting the refrigerant piping

See the outdoor unit installation manual for all guidelines, specifications and installation instructions.

4.3.1 To connect the refrigerant piping to the indoor unit

- 1 Connect the liquid stop valve from the outdoor unit to the refrigerant liquid connection of the indoor unit.



- a Refrigerant liquid connection
- b Refrigerant gas connection

- 2 Connect the gas stop valve from the outdoor unit to the refrigerant gas connection of the indoor unit.



INFORMATION

When the indoor unit is installed in a place with limited space, an optional pipe bend (EKHVTC) kit can be installed to facilitate the connection to the refrigerant gas and liquid connections of the indoor unit. For installation instructions, see the instruction sheet of the pipe bend kit.

4.4 Connecting the water piping

4.4.1 To connect the water piping

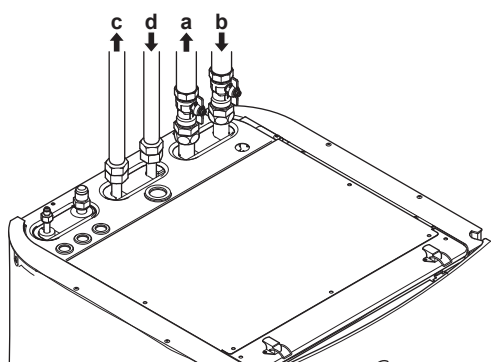


NOTICE

Do NOT use excessive force when connecting the piping. Deformation of the piping can cause malfunctioning of the unit.

To facilitate service and maintenance, 2 shut-off valves and 1 overpressure bypass valve are provided. Mount the shut-off valves on the space heating water inlet and space heating water outlet. To ensure the minimum flow rate (and prevent overpressure), install the overpressure bypass valve on the space heating water outlet.

- 1 Install the shut-off valves on the space heating water pipes.
- 2 Screw the indoor unit nuts on the shut-off valve.
- 3 Connect the domestic hot water in and out pipes to the indoor unit.



- a Space heating water out
- b Space heating water in
- c Domestic hot water out
- d Domestic cold water in (cold water supply)



NOTICE

It is recommended to install shut-off valves to domestic cold water in and domestic hot water out connections. These shut-off valves are field supplied.



NOTICE



Overpressure bypass valve (delivered as accessory). We recommend to install the overpressure bypass valve in the space heating water circuit.

- Mind the minimum water volume when choosing the installation location of the overpressure bypass valve (at the indoor unit, or at the collector). See ["3.2.1 To check the water volume and flow rate" on page 6](#).
- Mind the minimum flow rate when adjusting the overpressure bypass valve setting. See ["3.2.1 To check the water volume and flow rate" on page 6](#) and ["6.2.1 To check the minimum flow rate" on page 20](#).



NOTICE

Install air purge valves at all local high points.



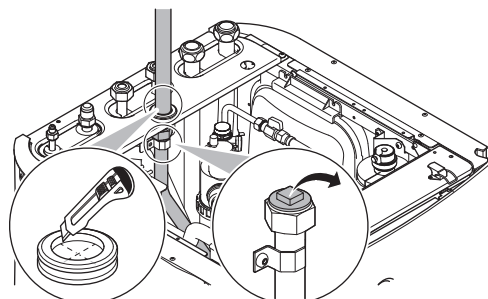
NOTICE

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.

4.4.2 To connect the recirculation piping

Prerequisite: Only required if you need recirculation in your system.

- 1 Remove the top panel from the unit, see ["4.1.1 To open the indoor unit" on page 6](#).
- 2 Cut out the rubber grommet on top of the unit, and remove the stop. The recirculation connector is placed below the hole.
- 3 Route the recirculation piping through the grommet and connect it to the recirculation connector.



- 4 Reattach the top panel.

4.4.3 To fill the water circuit

To fill the water circuit, use a field supply filling kit. Make sure you comply with the applicable legislation.



INFORMATION

Make sure both air purge valves (one on the magnetic filter, and one between the 3-way valve and flow sensor) are open.

4.4.4 To fill the domestic hot water tank

- 1 Open every hot water tap in turn to purge air from the system pipe work.
- 2 Open the cold water supply valve.
- 3 Close all water taps after all air is purged.
- 4 Check for water leaks.
- 5 Manually operate the field-installed pressure relief valve to ensure a free water flow through the discharge pipe.



NOTICE

To operate the system, the domestic hot water tank needs to be filled completely. Turning on the system when the tank is not full can damage the integrated anti-legionella heater and cause electrical errors.

4.4.5 To insulate the water piping

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

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.

4 Installation

4.5 Connecting the electrical wiring



DANGER: RISK OF ELECTROCUTION

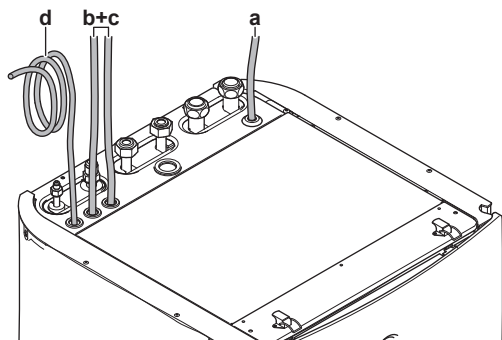


WARNING

ALWAYS use multicore cable for power supply cables.

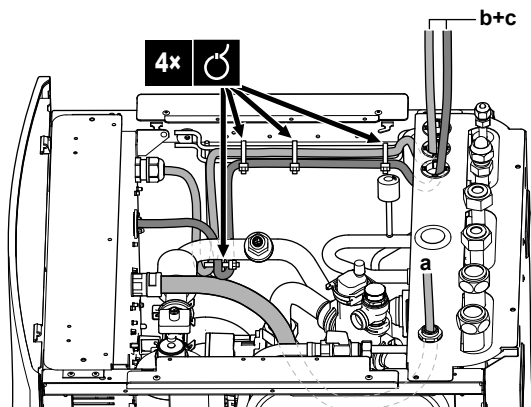
4.5.1 To connect the electrical wiring on the indoor unit

- 1 To open the indoor unit, see "4.1.1 To open the indoor unit" on page 6 and "4.1.2 To open the switch box cover of the indoor unit" on page 7.
- 2 The wiring enters the unit from the top:



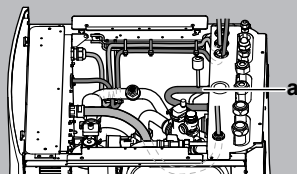
a, b, c Field wiring (see table below)
d Factory-mounted cable for power supply of anti-legionella heater

- 3 Routing of the wiring inside the unit should be as follows. Fix the cable to the cable rail using cable ties:



WARNING

Make sure that the electrical wiring does NOT touch the refrigerant gas pipe, which can be very hot.



a Refrigerant gas pipe

Routing	Possible cables (depending on unit type and installed options)
a Low voltage	<ul style="list-style-type: none"> ▪ Preferential power supply contact ▪ User interface used as room thermostat (option) ▪ Power consumption digital inputs (field supply) ▪ Outdoor ambient temperature sensor (option) ▪ Indoor ambient temperature sensor (option) ▪ Electrical meters (field supply) ▪ Safety thermostat (field supply) ▪ Backup heater thermistor (backup heater option)
b High voltage power supply	<ul style="list-style-type: none"> ▪ Interconnection cable ▪ Normal kWh rate power supply ▪ Preferential kWh rate power supply
c High voltage control signal	<ul style="list-style-type: none"> ▪ Heat pump convector (option) ▪ Room thermostat (option) ▪ Shut-off valve (field supply) ▪ Domestic hot water pump (field supply) ▪ Alarm output ▪ Changeover to external heat source control ▪ Space heating operation control ▪ Backup heater thermal protector + backup heater connection (backup heater option)
d High voltage power supply (factory-mounted cable)	<ul style="list-style-type: none"> ▪ Power supply for anti-legionella heater



CAUTION

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

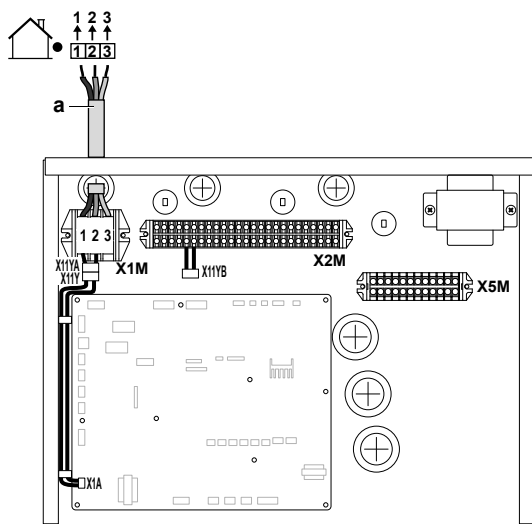
- 4 Seal the low voltage wiring intake using the sealing tape (delivered as accessory).

Without low voltage cables	With low voltage cables

4.5.2 To connect the main power supply

- 1 Connect the main power supply.

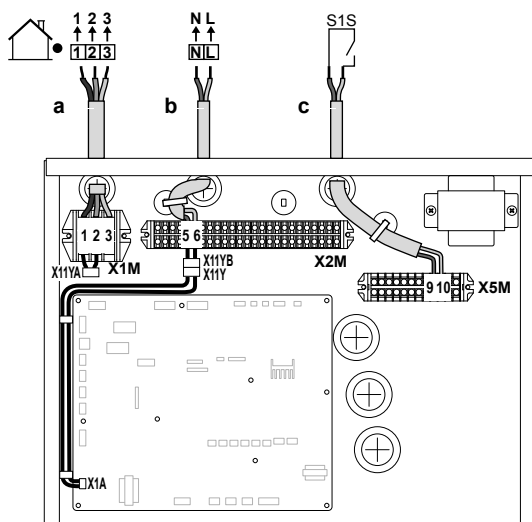
In case of normal kWh rate power supply



Legend: see illustration below.

In case of preferential kWh rate power supply

Connect X11Y to X11YB.



- a Interconnection cable (=main power supply)
- b Normal kWh rate power supply
- c Preferential power supply contact

- 2 Fix the cables with cable ties to the cable tie mountings.

INFORMATION

In case of preferential kWh rate power supply, connect X11Y to X11YB. The necessity of separate normal kWh rate power supply to indoor unit (b) X2M/5+6 depends on the type of preferential kWh rate power supply.

Separate connection to the indoor unit is required:

- if preferential kWh rate power supply is interrupted when active, OR
- if no power consumption of the indoor unit is allowed at the preferential kWh rate power supply when active.

INFORMATION

The preferential kWh rate power supply contact is connected to the same terminals (X5M/9+10) as the safety thermostat. It is only possible for the system to have EITHER preferential kWh rate power supply OR a safety thermostat.

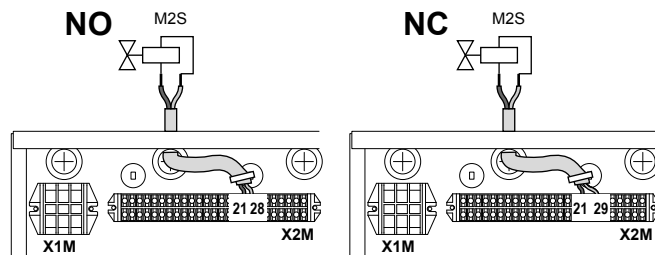
4.5.3 To connect the shut-off valve

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



NOTICE

Wiring is different for a NC (normal closed) valve and a NO (normal open) valve.



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

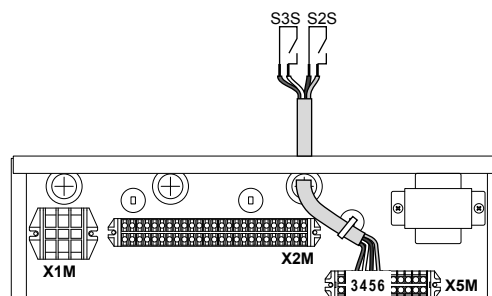
4.5.4 To connect the electrical meters



INFORMATION

In case of an electrical meter with transistor output, check the polarity. The positive polarity MUST be connected to X5M/6 and X5M/4; the negative polarity to X5M/5 and X5M/3.

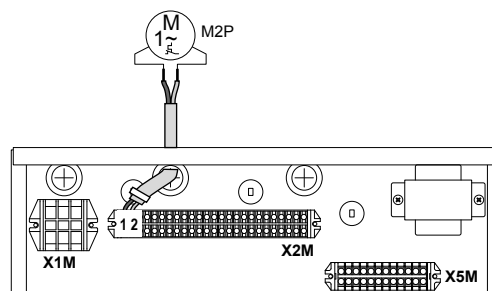
- 1 Connect the electrical meters cable to the appropriate terminals as shown in the illustration below.



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

4.5.5 To connect the domestic hot water pump

- 1 Connect the domestic hot water pump cable to the appropriate terminals as shown in the illustration below.

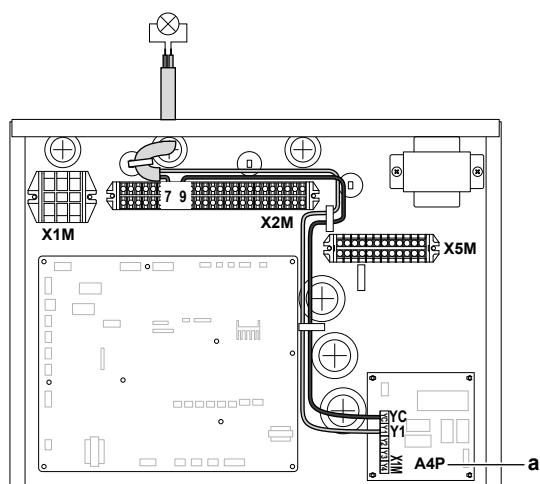


- 2 Fix the cable with cable ties to the cable tie mountings.

4.5.6 To connect the alarm output

- 1 Connect the alarm output cable to the appropriate terminals as shown in the illustration below.

4 Installation

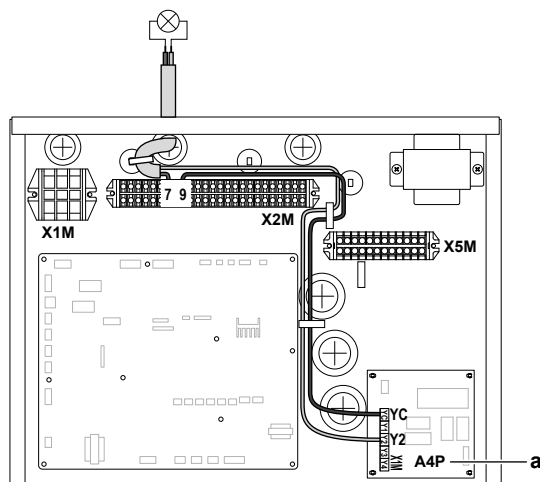


a Installation of EKRPIHB is required.

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

4.5.7 To connect the space heating ON/OFF output

- 1 Connect the space heating ON/OFF output cable to the appropriate terminals as shown in the illustration below.

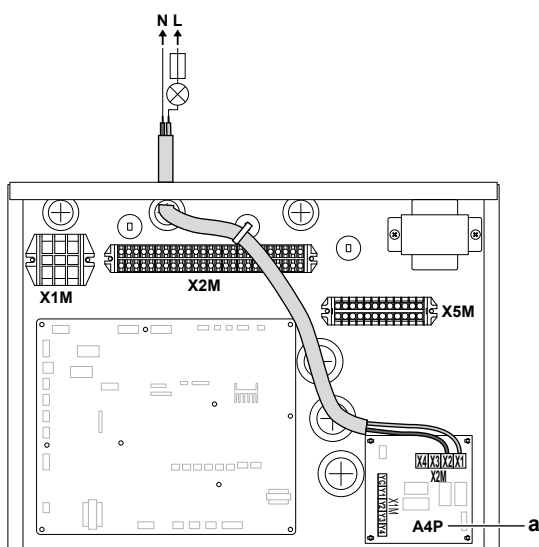


a Installation of EKRPIHB is required.

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

4.5.8 To connect the changeover to external heat source

- 1 Connect the changeover to external heat source cable to the appropriate terminals as shown in the illustration below.

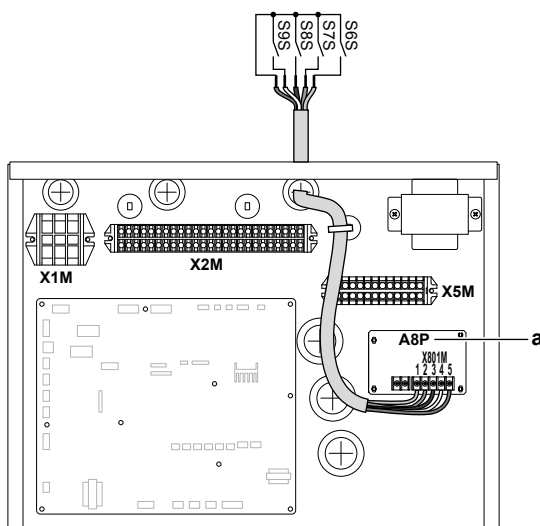


a Installation of EKRPIHB is required.

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

4.5.9 To connect the power consumption digital inputs

- 1 Connect the power consumption digital inputs cable to the appropriate terminals as shown in the illustration below.

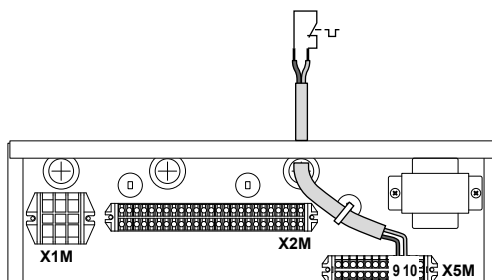


a Installation of EKRPIAHTA is required.

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

4.5.10 To connect the safety thermostat (normal closed contact)

- 1 Connect the safety thermostat (normal closed) cable to the appropriate terminals as shown in the illustration below.



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

**NOTICE**

Make sure to select and install the safety thermostat according to the applicable legislation.

In any case, to prevent unnecessary tripping of the safety thermostat, it is recommended that ...

- ... the safety thermostat is automatically resettable.
- ... the safety thermostat has a maximum temperature variation rate of 2°C/min.
- ... there is a minimum distance of 2 m between the safety thermostat and the 3-way valve.

**INFORMATION**

After it is installed, do NOT forget to configure the safety thermostat. Without configuration, the indoor unit will ignore the safety thermostat contact.

**INFORMATION**

The preferential kWh rate power supply contact is connected to the same terminals (X5M/9+10) as the safety thermostat. It is only possible for the system to have EITHER preferential kWh rate power supply OR a safety thermostat.

4.5.11 To connect the anti-legionella heater power supply

**WARNING**

The anti-legionella heater **MUST** have a dedicated power supply and **MUST** be protected by the safety devices required by the applicable legislation.

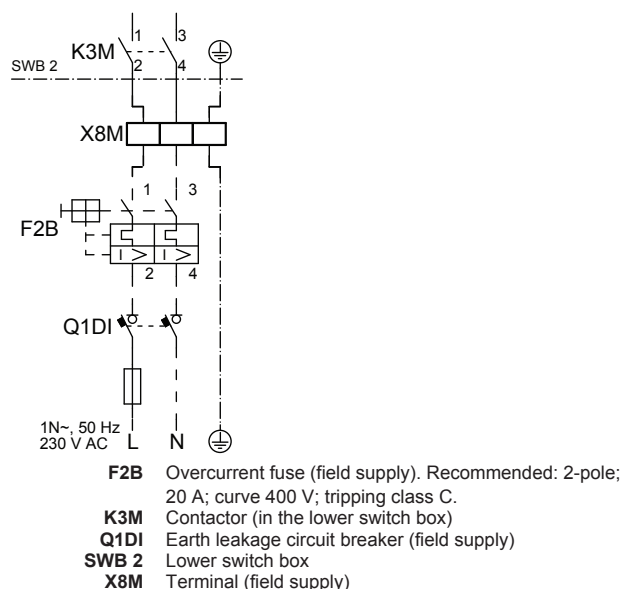
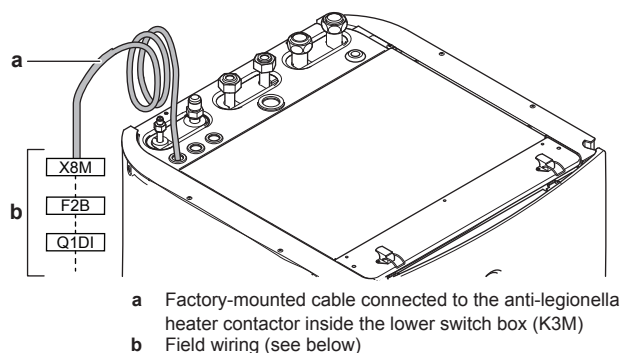
**CAUTION**

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

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

Anti-legionella heater capacity	Power supply	Maximum running current
2.4 kW	1N~ 230 V	11 A

Connect the anti-legionella heater power supply cable as follows:



4.6 Finishing the indoor unit installation

4.6.1 To close the indoor unit

- 1 Close the cover of the switch box.
- 2 Put the switch box back into place.
- 3 Reinstall the top panel.
- 4 Reinstall the side panels.
- 5 Reinstall the front panel.
- 6 Reconnect the cables to the user interface panel.
- 7 Reinstall the user interface panel.

**NOTICE**

When closing the indoor unit cover, make sure that the tightening torque does NOT exceed 4.1 N•m.

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 – Configuration wizard.** When you turn ON the user interface for the first time (via the indoor unit), the configuration wizard starts to help you configure the system.

5 Configuration

- **Restart the configuration wizard.** If the system is already configured, you can restart the configuration wizard. To restart the configuration wizard, go to Installer settings > Configuration wizard. To access Installer settings, see ["5.1.1 To access the most used commands" on page 14](#).
- **Afterwards.** If necessary, you can make changes to the configuration in the menu structure or the overview settings.



INFORMATION

When the configuration wizard is finished, the user interface will show an overview screen and request to confirm. When confirmed, the system will restart and the home screen will be displayed.

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 . To enable breadcrumbs, press the ? button in the home screen.	#
Accessing settings via the code in the overview field settings .	Code

See also:

- ["To access the installer settings" on page 14](#)
- ["5.4 Menu structure: Overview installer settings" on page 19](#)

5.1.1 To access the most used commands

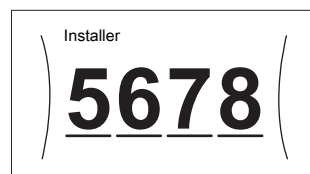
To change the user permission level

You can change the user permission level as follows:

1	Go to [B]: User profile.	
2	Enter the applicable code for the user permission.	—
	• Move the cursor from left to right.	
	• Browse through the list of digits and change the selected digit.	
	• Confirm the pincode and proceed.	

Installer pin code

The Installer pin code is **5678**. Additional menu items and installer settings are now available.



Advanced user pin code

The Advanced user pin code is **1234**. Additional menu items for the user are now visible.

User pin code

The User pin code is **0000**.

To access the installer settings

- 1 Set the user permission level to Installer.
- 2 Go to [9]: Installer settings.

To modify an overview setting

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

All settings can be done using the menu structure. If for any reason it is required to change a setting using the overview settings, then the overview settings can be accessed as follows:

1	Set the user permission level to Installer. See "To change the user permission level" on page 14 .	—
2	Go to [9.I]: Installer settings > Overview field settings.	
3	Turn the left dial to select the first part of the setting and confirm by pressing the dial.	
4	Turn the left dial to select the second part of the setting	
5	Turn the right dial to modify the value from 15 to 20.	
6	Press the left dial to confirm the new setting.	
7	Press the center button to go back to the home screen.	



INFORMATION

When you change the overview settings and you go back to the home screen, the user interface will show a popup screen and request to restart the system.

When confirmed, the system will restart and recent changes will be applied.

5.2 Configuration wizard

After first power ON of the system, the user interface will guide you using the configuration wizard. This way you can set the most important initial settings. This way the unit will be able to run properly. Afterwards, more detailed settings can be done via the menu structure if required.

5.2.1 Configuration wizard: Language

#	Code	Description
[7.1]	N/A	Language

5.2.2 Configuration wizard: Time and date

#	Code	Description
[7.2]	N/A	Set the local time and date



INFORMATION

By default, daylight savings time is enabled and clock format is set to 24 hours. If you want to change these settings, you can do this in the menu structure (User settings > Time/date) once the unit is initialised.

5.2.3 Configuration wizard: System

Indoor unit type

The indoor unit type is displayed, but cannot be adjusted.

Backup heater type

The backup heater is adapted to be connected to most common European electricity grids. The type of backup heater must be set on the user interface. For units with a built-in backup heater, the type of heater can be viewed but not changed.

#	Code	Description
[9.3.1]	[E-03]	<ul style="list-style-type: none"> 0: No heater 1: External heater

Domestic hot water

The following setting determines if the system can prepare domestic hot water or not, and which tank is used. This setting is read only.

#	Code	Description
[9.2.1]	[E-05] ^(*) [E-06] ^(*) [E-07] ^(*)	<ul style="list-style-type: none"> Integrated The anti-legionella heater will also be used during disinfection.

(*) Menu structure setting [9.2.1] replaces the following 3 overview settings:

- [E-05] Can the system prepare domestic hot water?
- [E-06] Is a domestic hot water tank installed in the system?
- [E-07] What kind of domestic hot water tank is installed?

Emergency

When the heat pump fails to operate, the optional backup heater and anti-legionella heater can serve as an emergency heater and either automatically or non-automatically take over the heat load.

- When auto emergency is set to Automatic and a heat pump failure occurs, the optional backup heater will automatically take over the heat load, and the anti-legionella heater will automatically take over the domestic hot water production.
- When auto emergency is set to Manual and a heat pump failure occurs, the domestic hot water and space heating operation will stop and need to be recovered manually via the user interface. To recover operation manually, go to the Malfunctioning main menu screen, where the user interface will then ask you to confirm whether the optional backup heater or anti-legionella heater can take over the heat load or not.

We recommend to set Emergency to Automatic if the house is unattended for longer periods.

#	Code	Description
[9.5]	N/A	<ul style="list-style-type: none"> 0: Manual 1: Automatic



INFORMATION

The auto emergency setting can be set in the menu structure of the user interface only.



INFORMATION

If [4-03]=1 or 3, then Emergency=Manual is not applicable for the anti-legionella heater.

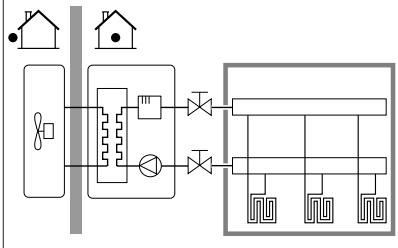
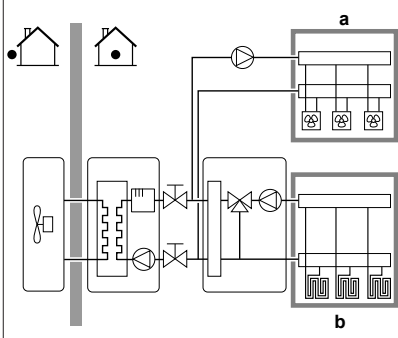


INFORMATION

If a heat pump failure occurs and Emergency is set to Manual, the room frost protection function, the underfloor heating screed dryout function, and the water pipe antifreeze function will remain active even if the user does NOT confirm emergency operation.

Number of zones

The system can supply leaving water to up to 2 water temperature zones. During configuration, the number of water zones must be set.

#	Code	Description
[4.4]	[7-02]	<ul style="list-style-type: none"> 0: Single zone Only one leaving water temperature zone:  <p>a</p> <ul style="list-style-type: none"> a: Main LWT zone
[4.4]	[7-02]	<ul style="list-style-type: none"> 1: Dual zone Two leaving water temperature zones. The main leaving water temperature zone consists of the higher load heat emitters and a mixing station to achieve the desired leaving water temperature. In heating:  <p>a</p> <p>b</p> <ul style="list-style-type: none"> a: Additional LWT zone: Highest temperature b: Main LWT zone: Lowest temperature



CAUTION

If there are 2 zones, it is important that the zone with the lowest water temperature is configured as the main zone, and the zone with the highest water temperature is configured as the additional zone. Not configuring the system in this way could cause damage to the heat emitters.



CAUTION

If there are 2 zones and the emitter types are wrongly configured, water of high temperature can be sent towards a low temperature emitter (underfloor heating). To avoid this:

- Install an aquastat/thermostatic valve to avoid too high temperatures towards a low temperature emitter.
- Make sure you set the emitter types for the main zone [2.7] and for the additional zone [3.7] correctly in accordance with the connected emitter.

5 Configuration

5.2.4 Configuration wizard: Backup heater

The backup heater is adapted to be connected to most common European electricity grids. If the backup heater is available, the voltage, configuration and capacity must be set on the user interface.

The capacities for the different steps of the backup heater must be set for the energy metering and/or power consumption control feature to work properly. When measuring the resistance value of each heater, you can set the exact heater capacity and this will lead to more accurate energy data.

Voltage

The optional external BUH can be set to 230V, 1ph, 230V, 3ph or 400V, 3ph.

#	Code	Description
[9.3.2]	[5-0D]	<ul style="list-style-type: none"> 0: 230V, 1ph 1: 230V, 3ph 2: 400V, 3ph

Configuration

The backup heater can be configured in different ways. It can be chosen to have a 1-step only backup heater or a backup heater with 2 steps. If 2 steps, the capacity of the second step depends on this setting. It can also be chosen to have a higher capacity of the second step in emergency.

#	Code	Description
[9.3.3]	[4-0A]	<ul style="list-style-type: none"> 0: Relay 1 1: Relay 1 / Relay 1+2^(a) 2: Relay 1 / Relay 2^(a) 3: Relay 1 / Relay 2 Emergency Relay 1+2^(a)

(a) Not available for 3V models.



INFORMATION

Settings [9.3.3] and [9.3.5] are linked. Changing one setting influences the other. If you change one, check if the other is still as expected.



INFORMATION

During normal operation, the capacity of the second step of the backup heater at nominal voltage is equal to [6-03]+[6-04].



INFORMATION

If [4-0A]=3 and emergency mode is active, the power usage of the backup heater is maximal and equal to 2×[6-03]+[6-04].



INFORMATION

Only for systems with integrated domestic hot water tank: If the storage temperature set point is higher than 50°C, Daikin recommends NOT to disable the backup heater second step because it will have a big impact on the required time for the unit to heat up the domestic hot water tank.

Capacity step 1

#	Code	Description
[9.3.4]	[6-03]	<ul style="list-style-type: none"> The capacity of the first step of the backup heater at nominal voltage.

Additional capacity step 2

#	Code	Description
[9.3.5]	[6-04]	<ul style="list-style-type: none"> The capacity difference between the second and first step of the backup heater at nominal voltage. Nominal value depends on backup heater configuration.

5.2.5 Configuration wizard: Main zone

The most important settings for the main leaving water zone can be set here.

Emitter type

Depending on the system water volume and the heater emitter type of the main zone, the heat up of the main zone can take longer. This setting can compensate for a slow or a quick heating system during the heat up cycle. The target delta T for the main zone will depend on this setting.

In room thermostat control, this setting will influence the maximum modulation of the desired leaving water temperature.

Therefore it is important to set this correctly and in accordance with your system layout.

#	Code	Description
[2.7]	[2-0C]	<ul style="list-style-type: none"> 0: Underfloor heating 1: Fancoil unit 2: Radiator

The setting of the emitter type has an influence on the space heating setpoint range and the target delta T in heating as follows:

Description	Space heating setpoint range	Target delta T in heating
0: Underfloor heating	Maximum 55°C	Variable
1: Fancoil unit	Maximum 55°C	Variable
2: Radiator	Maximum 65°C	Fixed 10°C



NOTICE

For radiators, the average emitter temperature will be lower compared to underfloor heating, due to the fixed delta T of 10°C. To compensate, you can:

- Increase the weather dependent curve desired temperatures [2.5].
- Enable leaving water temperature modulation and increase the maximum modulation [2.C].

Control

For the control of the unit there are 3 possibilities:

Control	In this control...
Leaving water	Unit operation is decided based on the leaving water temperature regardless the actual room temperature and/or heating demand of the room.
External room thermostat	Unit operation is decided by the external thermostat or equivalent (e.g. heat pump convactor).
Room thermostat	Unit operation is decided based on the ambient temperature of the user interface used as a room thermostat.

#	Code	Description
[2.9]	[C-07]	<ul style="list-style-type: none"> 0: Leaving water 1: External room thermostat 2: Room thermostat

Setpoint mode

In Fixed mode, the desired leaving water temperature does NOT depend on the outdoor ambient temperature.

In Weather dependent mode, the desired leaving water temperature depends on the outdoor ambient temperature.

#	Code	Description
[2.4]	N/A	Setpoint mode <ul style="list-style-type: none"> 0: Fixed 2: Weather dependent

When weather dependent operation is active, low outdoor temperatures will result in warmer water and vice versa. During weather dependent operation, the user has the possibility to shift the water temperature up or down by a maximum of 10°C.

Schedule

Indicates if the desired leaving water temperature is according to a schedule. Influence of the LWT setpoint mode [2.4] is as follows:

- In Fixed LWT setpoint mode, the scheduled actions consist of desired leaving water temperatures, either preset or custom.
- In Weather dependent LWT setpoint mode, the scheduled actions consist of desired shift actions, either preset or custom.

#	Code	Description
[2.1]	N/A	<ul style="list-style-type: none"> 0: No 1: Yes

5.2.6 Configuration wizard: Additional zone

The most important settings for the additional leaving water zone can be set here.

Emitter type

For more info about this functionality, see ["5.2.5 Configuration wizard: Main zone" on page 16](#).

#	Code	Description
[3.7]	[2-0D]	<ul style="list-style-type: none"> 0: Underfloor heating 1: Fancoil unit 2: Radiator

Control

The control type is displayed here, but cannot be adjusted. It is determined by the control type of the main zone. For more info about the functionality, see ["5.2.5 Configuration wizard: Main zone" on page 16](#).

#	Code	Description
[3.9]	N/A	<ul style="list-style-type: none"> 0: Leaving water if the control type of the main zone is Leaving water. 1: External room thermostat if the control type of the main zone is External room thermostat or Room thermostat.

Setpoint mode

For more info about this functionality, see ["5.2.5 Configuration wizard: Main zone" on page 16](#).

#	Code	Description
[3.4]	N/A	<ul style="list-style-type: none"> 0: Fixed 2: Weather dependent

If you choose Weather dependent, the next screen will be the detailed screen with weather-dependent curves. Also see ["5.2.7 Detailed screen with weather-dependent curve" on page 17](#).

Setpoint mode

For more info about this functionality, see ["5.2.5 Configuration wizard: Main zone" on page 16](#).

#	Code	Description
[3.4]	N/A	<ul style="list-style-type: none"> 0: Fixed 1: WD heating, fixed cooling 2: Weather dependent

If you choose Weather dependent, the next screen will be the detailed screen with weather-dependent curves. Also see ["5.2.7 Detailed screen with weather-dependent curve" on page 17](#).

Schedule

Indicates if the desired leaving water temperature is according to a schedule. Also see ["5.2.5 Configuration wizard: Main zone" on page 16](#).

#	Code	Description
[3.1]	N/A	<ul style="list-style-type: none"> 0: No 1: Yes

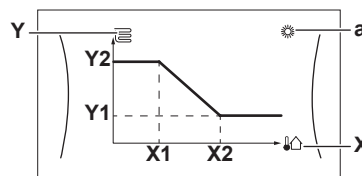
5.2.7 Detailed screen with weather-dependent curve

When weather dependent operation is active the desired tank temperature is determined automatically depending on the averaged outdoor temperature. When the outdoor temperature is lower the tank temperature will need to be higher as the water pipes will be colder and vice versa.

The weather-dependent curves are defined by two setpoints:

- Setpoint (X1, Y2)
- Setpoint (X2, Y1)

Weather-dependent curve:

**Possible actions on this screen**

	Go through the temperatures.
	Change the temperature.
	Go to the next temperature.
	Confirm changes and proceed.

Item	Description
a	Possible weather dependent zones: <ul style="list-style-type: none"> : Main zone or additional zone heating : Domestic hot water
X, X1, X2	Outdoor ambient temperature
Y, Y1, Y2	Desired tank temperature or leaving water temperature. The symbol shown here corresponds to the heat emitter for that zone: <ul style="list-style-type: none"> : Underfloor heating : Fan coil unit : Radiator : Domestic hot water tank

5 Configuration

5.2.8 Configuration wizard: Tank

Heat up mode

The domestic hot water can be prepared in 3 different ways. They differ from each other by the way the desired tank temperature is set and how the unit acts upon it.

#	Code	Description
[5.6]	[6-0D]	Heat up mode <ul style="list-style-type: none">0: Reheat only: Only reheat operation is allowed.1: Schedule + reheat: The domestic hot water tank is heated according to a schedule and between the scheduled heat up cycles, reheat operation is allowed.2: Schedule only: The domestic hot water tank can ONLY be heated according to a schedule.

See the operation manual for more details.

Comfort setpoint

Only applicable when domestic hot water preparation is Schedule only or Schedule + reheat. When programming the schedule, you can make use of the comfort setpoint as a preset value. When you later want to change the storage setpoint, you only have to do it in one place.

The tank will heat up until the **storage comfort temperature** has been reached. It is the higher desired temperature when a storage comfort action is scheduled.

Additionally, a storage stop can be programmed. This feature puts a stop to tank heating even if the setpoint has NOT been reached. Only program a storage stop when tank heating is absolutely undesirable.

#	Code	Description
[5.2]	[6-0A]	Comfort setpoint <ul style="list-style-type: none">30°C~[6-0E]°C

Eco setpoint

The **storage economic temperature** denotes the lower desired tank temperature. It is the desired temperature when a storage economic action is scheduled (preferably during day).

#	Code	Description
[5.3]	[6-0B]	Eco setpoint <ul style="list-style-type: none">30°C~min(50,[6-0E])°C

Reheat setpoint

Desired reheat tank temperature, used:

- in Schedule + reheat mode, during reheat mode: the guaranteed minimum tank temperature is set by the Reheat setpoint minus the reheat hysteresis. If the tank temperature drops below this value, the tank is heated up.
- during storage comfort, to prioritize the domestic hot water preparation. When the tank temperature rises above this value, domestic hot water preparation and space heating/cooling are executed sequentially.

#	Code	Description
[5.4]	[6-0C]	Reheat setpoint <ul style="list-style-type: none">30°C~min(50,[6-0E])°C

5.3 Settings menu

You can set additional settings using the main menu screen and its submenus. The most important settings are presented here.

5.3.1 Main zone

Thermostat type

Only applicable in external room thermostat control.



NOTICE

If an external room thermostat is used, the external room thermostat will control the room frost protection. However, the room frost protection is only possible if the leaving water temperature control on the unit's user interface is turned ON.

#	Code	Description
[2.A]	[C-05]	External room thermostat type for the main zone: <ul style="list-style-type: none">1: 1 contact: The used external room thermostat can only send a thermo ON/OFF condition. There is no separation between heating or cooling demand.2: 2 contacts: The used external room thermostat can send a separate heating/cooling thermo ON/OFF condition.

5.3.2 Additional zone

Thermostat type

Only applicable in external room thermostat control. For more info about the functionality, see ["5.3.1 Main zone" on page 18](#).

#	Code	Description
[3.A]	[C-06]	External room thermostat type for the additional zone: <ul style="list-style-type: none">1: 1 contact2: 2 contacts

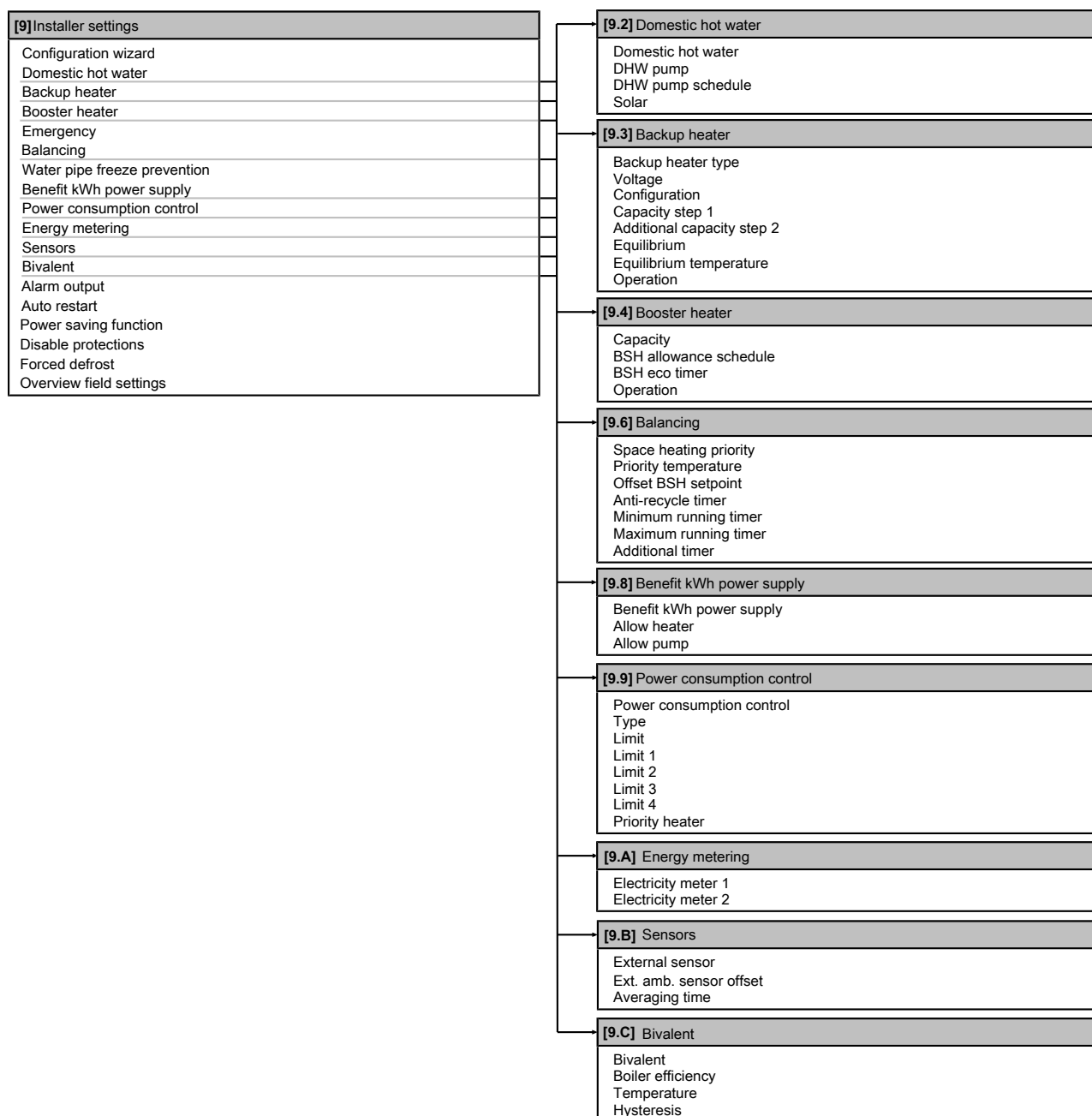
5.3.3 Information

Dealer information

The installer can fill in his contact number here.

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

5.4 Menu structure: Overview installer settings



INFORMATION

Solar kit settings are shown but are NOT applicable for this unit. Settings shall NOT be used or changed.



INFORMATION

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



INFORMATION

Anti-legionella heater. In the menu structure the term "Booster heater" is used. However, this is actually an anti-legionella heater.

6 Commissioning

6 Commissioning



NOTICE

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



INFORMATION

The software is equipped with an "installer-on-site" mode ([9.G]: Disable protections), that disables automatic operation by the unit. At first installation, setting Disable protections is by default set to Yes, 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 Disable protections to No.

36 hours after the first power-on, the unit will automatically set Disable protections to No, 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 Disable protections to Yes manually.

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.

<input type="checkbox"/>	You read the complete installation instructions, as described in the installer reference guide .
<input type="checkbox"/>	The indoor unit is properly mounted.
<input type="checkbox"/>	Only if you use the optional backup heater: The backup heater is properly mounted.
<input type="checkbox"/>	The outdoor unit is properly mounted.
<input type="checkbox"/>	The following field wiring has been carried out according to this document and the applicable legislation: <ul style="list-style-type: none"> Between the local supply panel and the outdoor unit Between indoor unit and outdoor unit Between the local supply panel and the indoor unit Between the indoor unit and the valves (if applicable) Between the indoor unit and the room thermostat (if applicable)
<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 indoor and outdoor units.
<input type="checkbox"/>	Only if you use the optional backup heater: Depending on the backup heater type, backup heater circuit breaker F1B (on the switch box of the backup heater) is turned ON.
<input type="checkbox"/>	The anti-legionella heater circuit breaker F2B (field supply) is turned ON.
<input type="checkbox"/>	There are NO refrigerant leaks .

<input type="checkbox"/>	The refrigerant pipes (gas and liquid) are thermally insulated.
<input type="checkbox"/>	The correct pipe size is installed and the pipes are properly insulated.
<input type="checkbox"/>	There is NO water leak inside the indoor unit.
<input type="checkbox"/>	The shut-off valves are properly installed and fully open.
<input type="checkbox"/>	The stop valves (gas and liquid) on the outdoor unit are fully open.
<input type="checkbox"/>	The air purge valve is open (at least 2 turns).
<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 6 .
<input type="checkbox"/>	The domestic hot water tank is filled completely.

6.2 Checklist during commissioning

6.2.1 To check the minimum flow rate

1	Confirm according to the hydraulic configuration which space heating loops can be closed due to mechanical, electronic, or other valves.	—
2	Close all space heating loops that can be closed (see previous step).	—
3	Start the pump test run operation (see "6.2.4 To perform an actuator test run" on page 21).	—
4	During pump test run operation, go to Sensors.	
5	Select the flow rate information. During test run operation, the unit can operate below the minimum required flow rate.	
6	Modify the bypass valve setting to reach the minimum required flow rate + 2 l/min.	—

Minimum required flow rate

12 l/min

6.2.2 To perform an air purge

Conditions: Make sure all operation is disabled. Go to the Operation menu and turn off Room, Space heating/cooling and Tank operation.

1	Set the user permission level to Installer. See "To change the user permission level" on page 14 .	—
2	Go to [A.3]: Commissioning > Air purge.	
3	Select OK to confirm. Result: The air purge starts. It stops automatically when air purge cycle is finished. To stop the air purge manually:	
1	Go to Stop air purge.	
2	Select OK to confirm.	

Air purging heat emitters or collectors

We recommend to purge air with the unit's air purge function (see above). However, if you purge air from the heat emitters or collectors, mind the following:

**WARNING**

Air purging heat emitters or collectors. Before you purge air from heat emitters or collectors, check if or is displayed on the home screen of the user interface.

- If not, you can purge air immediately.
- If yes, make sure that the room where you want to purge air is sufficiently ventilated. **Reason:** Refrigerant might leak into the water circuit, and subsequently into the room when you purge air from the heat emitters or collectors.

6.2.3 To perform an operation test run

Conditions: Make sure all operation is disabled. Go to the Operation menu and turn off Room, Space heating/cooling and Tank operation.

1	Set the user permission level to Installer. See " To change the user permission level " on page 14.	—
2	Go to [A.1]: Commissioning > Operation test run.	
3	Select a test from the list. Example: Heating.	
4	Select OK to confirm. Result: The test run starts. It stops automatically when done (±30 min).	
	To stop the test run manually:	—
1	Go to Stop test run.	
2	Select OK to confirm.	

**INFORMATION**

When starting up the system in a cold climate, and NO backup heater kit was installed, it may be required to start up with a small water volume. To do this, gradually open the heat emitters. As a result, the water temperature will gradually rise. Monitor the inlet water temperature ([6.1.6] in the menu structure) and make sure it does NOT drop below 15°C.

If the installation of the unit has been done correctly, the unit will start up during test operation in the selected operation mode. During test mode, the correct operation of the unit can be checked by monitoring its leaving water temperature (heating/cooling mode) and tank temperature (domestic hot water mode).

To monitor the temperature:

1	Go to Sensors.	
2	Select the temperature information.	

6.2.4 To perform an actuator test run

Conditions: Make sure all operation is disabled. Go to the Operation menu and turn off Room, Space heating/cooling and Tank operation.

Purpose of the actuator test run is to confirm the operation of the different actuators (e.g., when you select Pump, a test run of the pump will start).

1	Set the user permission level to Installer. See " To change the user permission level " on page 14.	—
2	Go to [A.2]: Commissioning > Actuator test run.	
3	Select a test from the list. Example: Pump.	

4	Select OK to confirm. Result: The actuator test run starts. It stops automatically when done (±30 min).	
	To stop the test run manually:	—
1	Go to Stop test run.	
2	Select OK to confirm.	

Possible actuator test runs

- Booster heater test
- Backup heater 1 test (if applicable)
- Backup heater 2 test (if applicable)
- 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.

- Shut off valve test
- Diverter valve test
- Bivalent signal test
- Alarm output test
- C/H signal test
- DHW pump test

6.2.5 To perform an underfloor heating screed dryout

Conditions: Make sure all operation is disabled. Go to the Operation menu and turn off Room, Space heating/cooling and Tank operation.

1	Set the user permission level to Installer. See " To change the user permission level " on page 14.	—
2	Go to [A.4]: Commissioning > UFH screed dryout.	
3	Set a dryout program: go to Program and use the UFH screed dryout programming screen.	
4	Select OK to confirm. Result: The underfloor heating screed dryout starts. It stops automatically when done.	
	To stop the test run manually:	—
1	Go to Stop UFH screed dryout.	
2	Select OK to confirm.	

**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 "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.

7 Hand-over to the user



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

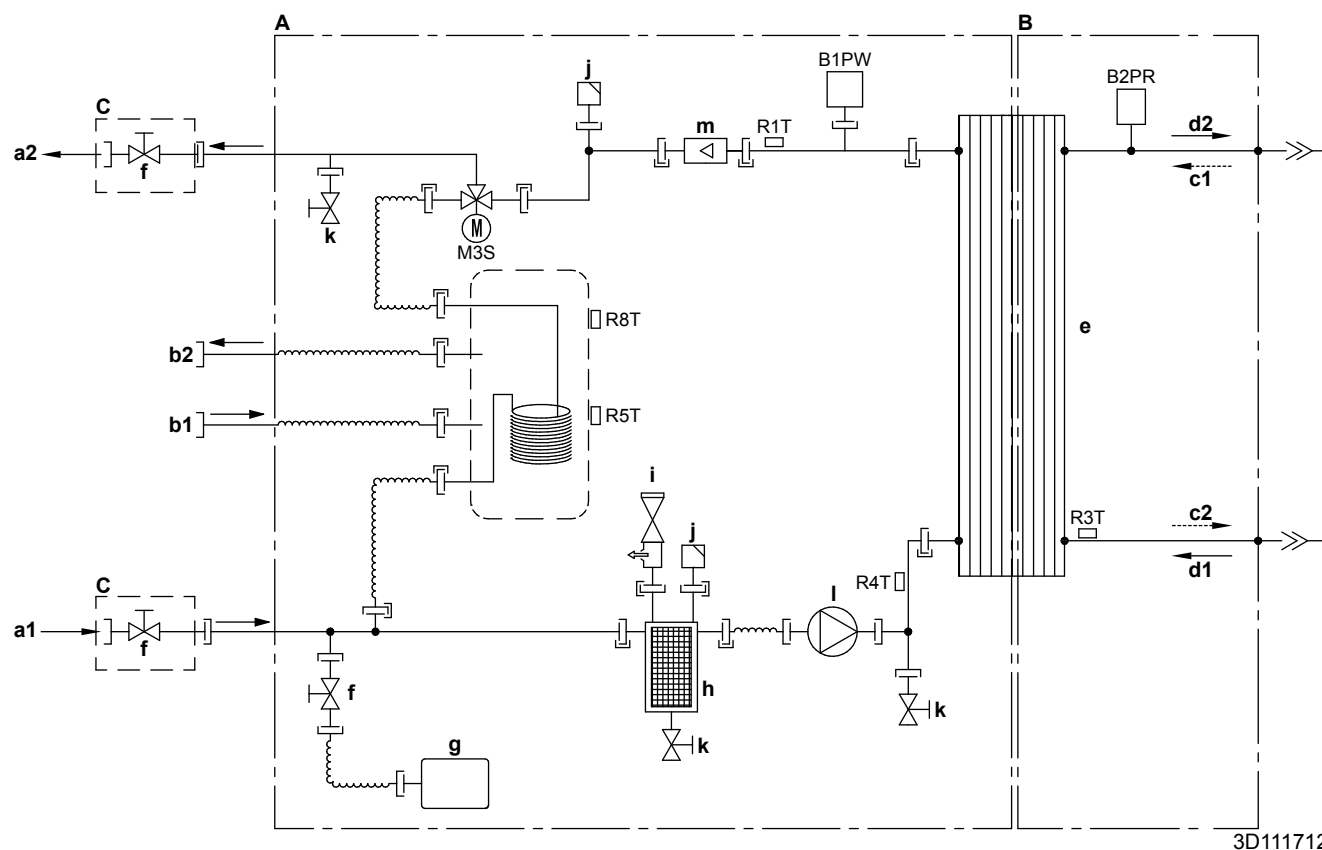
Once the test run is finished and the unit operates properly, please make sure the following is clear for the user:

- 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.

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 Business Portal (authentication required).

8.1 Piping diagram: Indoor unit



3D111712

- A** Water side
B Refrigerant side
C Field installed
a1 Space heating water IN
a2 Space heating water OUT
b1 Domestic hot water: cold water IN
b2 Domestic hot water: hot water OUT
c1 Gas refrigerant IN (heating mode; condenser)
c2 Liquid refrigerant OUT (heating mode; condenser)
d1 Liquid refrigerant IN (cooling mode; evaporator)
d2 Gas refrigerant OUT (cooling mode; evaporator)
e Plate heat exchanger
f Shut-off valve for service (if equipped)
g Expansion vessel
h Magnetic filter/dirt separator
i Safety valve
j Air purge
k Drain valve
l Pump
m Flow sensor

- B1PW** Space heating water pressure sensor
B2PR Refrigerant pressure sensor
M3S 3-way valve (space heating/domestic hot water)
R1T Thermistor (heat exchanger – water OUT)
R3T Thermistor (liquid refrigerant)
R4T Thermistor (heat exchanger – water IN)
R5T, R8T Thermistor (tank)
 — Screw connection
 >> Flare connection
 — Quick coupling
 — Brazed connection

8 Technical data

8.2 Wiring diagram: Indoor unit

See the internal wiring diagram supplied with the unit (on the inside of the indoor unit switch box cover). The abbreviations used are listed below.

Notes to go through before starting the unit

English	Translation
Notes to go through before starting the unit	Notes to go through before starting the unit
X1M	Main terminal
X2M	Field wiring terminal for AC
X3M	Backup heater terminal
X5M	Field wiring terminal for DC
X8M	Anti-legionella heater power supply terminal
-----	Earth wiring
-----	Field supply
①	Several wiring possibilities
	Option
	Not mounted in switch box
	Wiring depending on model
	PCB
Note 1: Connection point of the power supply for the anti-legionella heater should be foreseen outside the unit.	Note 1: Connection point of the power supply for the anti-legionella heater should be foreseen outside the unit.
Optional backup heater power supply	Optional backup heater power supply
<input type="checkbox"/> 1N~, 230 V, 6 kW	<input type="checkbox"/> 1N~, 230 V, 6 kW
<input type="checkbox"/> 3N~, 400 V, 6 kW	<input type="checkbox"/> 3N~, 400 V, 6 kW
User installed options	User installed options
<input type="checkbox"/> LAN adapter	<input type="checkbox"/> LAN adapter
<input type="checkbox"/> Backup heater	<input type="checkbox"/> Backup heater
<input type="checkbox"/> Remote user interface	<input type="checkbox"/> User interface used as room thermostat
<input type="checkbox"/> Ext. indoor thermistor	<input type="checkbox"/> External indoor thermistor
<input type="checkbox"/> Ext outdoor thermistor	<input type="checkbox"/> External outdoor thermistor
<input type="checkbox"/> Digital I/O PCB	<input type="checkbox"/> Digital I/O PCB
<input type="checkbox"/> Demand PCB	<input type="checkbox"/> Demand PCB
Main LWT	Main leaving water temperature
<input type="checkbox"/> On/OFF thermostat (wired)	<input type="checkbox"/> On/OFF thermostat (wired)
<input type="checkbox"/> On/OFF thermostat (wireless)	<input type="checkbox"/> On/OFF thermostat (wireless)
<input type="checkbox"/> Ext. thermistor	<input type="checkbox"/> External thermistor
<input type="checkbox"/> Heat pump convector	<input type="checkbox"/> Heat pump convector
Add LWT	Additional leaving water temperature
<input type="checkbox"/> On/OFF thermostat (wired)	<input type="checkbox"/> On/OFF thermostat (wired)
<input type="checkbox"/> On/OFF thermostat (wireless)	<input type="checkbox"/> On/OFF thermostat (wireless)
<input type="checkbox"/> Ext. thermistor	<input type="checkbox"/> External thermistor
<input type="checkbox"/> Heat pump convector	<input type="checkbox"/> Heat pump convector

Position in switch box

English	Translation
Position in switch box	Position in switch box

Legend

A1P	Main PCB
A2P	* On/OFF thermostat (PC=power circuit)

A3P	* Heat pump convector
A4P	* Digital I/O PCB
A8P	* Demand PCB
A9P	Status indicator
A10P	MMI (= user interface connected to the indoor unit) – Power supply unit PCB
A11P	MMI (= user interface connected to the indoor unit) – Main PCB
A12P	MMI display PCB
A13P	* LAN adapter
A14P	* User interface used as room thermostat – PCB
A15P	* Receiver PCB (wireless On/OFF thermostat)
B1L	Flow sensor
B1PR	Refrigerant pressure sensor
B1PW	Water pressure sensor
CN* (A4P)	* Connector
DS1(A8P)	* DIP switch
F2B	# Overcurrent fuse anti-legionella heater
F2T	Thermal fuse anti-legionella heater
F1U, F2U (A4P)	* Fuse 5 A 250 V for digital I/O PCB
FU1 (A1P)	Fuse T 5 A 250 V for PCB
FU2 (A10P)	Fuse T 1.6 A 250 V for PCB
K3M	Contact anti-legionella heater
K*R (A4P)	Relay on PCB
M1P	Main supply pump
M2P	# Domestic hot water pump
M2S	# 2-way valve for cooling mode
M3S	3-way valve for floorheating/domestic hot water
P1M	MMI display
PC (A15P)	* Power circuit
PHC1 (A4P)	* Optocoupler input circuit
Q2L	Thermal protector anti-legionella heater
Q4L	# Safety thermostat
Q*DI	# Earth leakage circuit breaker
R1H (A2P)	* Humidity sensor
R1T (A1P)	Outlet water heat exchanger thermistor
R1T (A2P)	* Ambient sensor On/OFF thermostat
R1T (A14P)	* Ambient sensor user interface
R2T (A2P)	* External sensor (floor or ambient)
R3T	Refrigerant liquid side thermistor
R4T	Inlet water thermistor
R5T, R8T	Domestic hot water thermistor
R6T	* External indoor or outdoor ambient thermistor
S1S	# Preferential kWh rate power supply contact
S2S	# Electrical meter pulse input 1
S3S	# Electrical meter pulse input 2
S6S~S9S	* Digital power limitation inputs
SS1 (A4P)	* Selector switch
SW1~2 (A12P)	Turn buttons

SW3~5 (A12P)		Push buttons
TR1		Power supply transformer
X8M	#	Anti-legionella heater power supply terminal strip
X*, X*A, X*Y, Y*		Connector
X*M		Terminal strip

* Optional
Field supply

Translation of text on wiring diagram

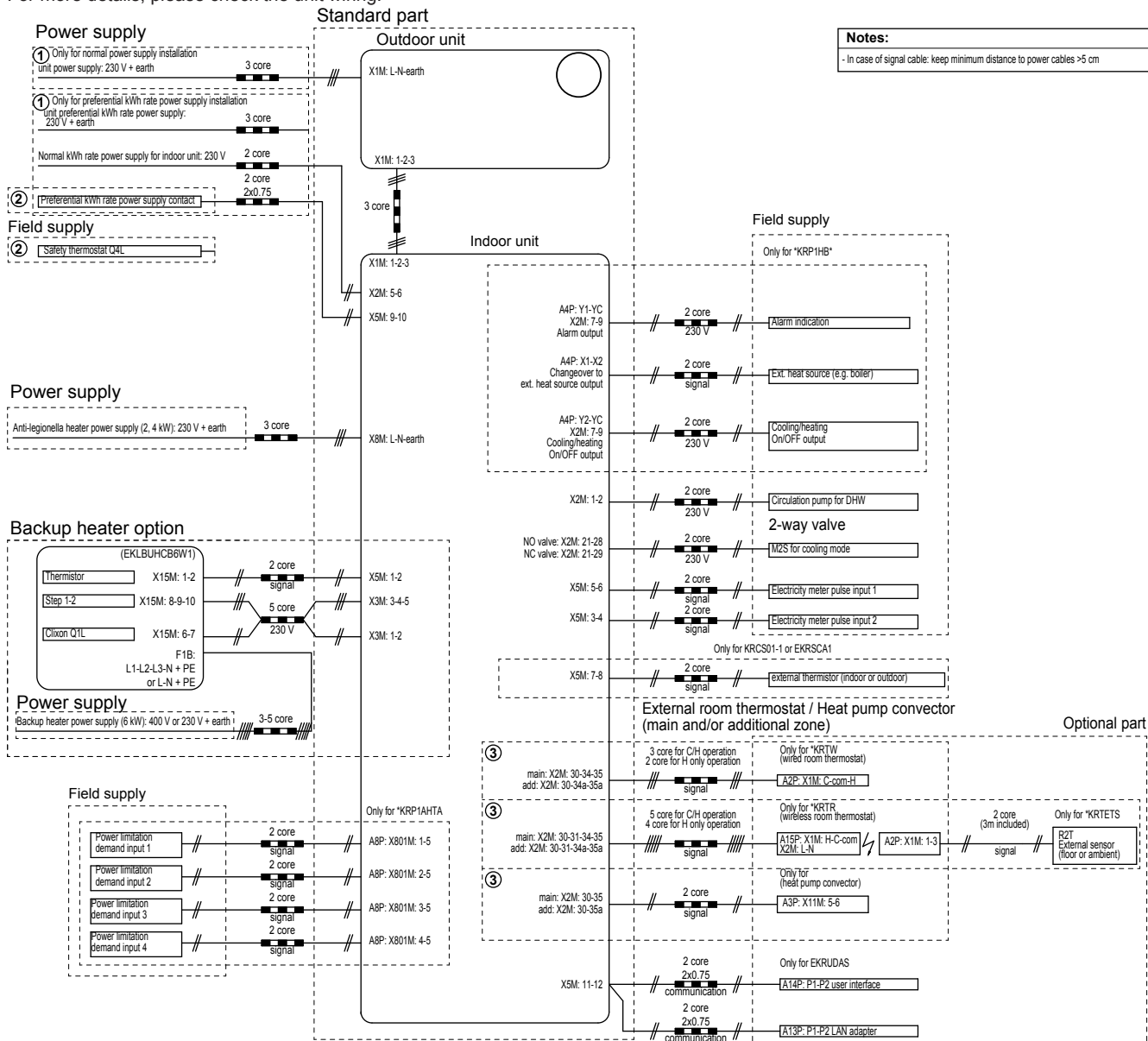
English	Translation
(1) Main power connection	(1) Main power connection
For preferential kWh rate power supply	For preferential kWh rate power supply
Indoor unit supplied from outdoor	Indoor unit supplied from outdoor
Normal kWh rate power supply	Normal kWh rate power supply
Only for normal power supply (standard)	Only for normal power supply (standard)
Only for preferential kWh rate power supply (outdoor)	Only for preferential kWh rate power supply (outdoor)
Outdoor unit	Outdoor unit
Preferential kWh rate power supply contact: 16 V DC detection (voltage supplied by PCB)	Preferential kWh rate power supply contact: 16 V DC detection (voltage supplied by PCB)
SWB	Switch box
Use normal kWh rate power supply for indoor unit	Use normal kWh rate power supply for indoor unit
(3) User interface	(3) User interface
Only for LAN adapter	Only for the LAN adapter
Only for remote user interface EKRUDAS	Only for the user interface used as room thermostat (EKRUDAS)
(4) Domestic hot water tank	(4) Domestic hot water tank
Anti-legionella heater power supply	Anti-legionella heater power supply
SWB	Switch box
(5) Ext. thermistor	(5) External thermistor
SWB	Switch box
(6) Field supplied options	(6) Field supplied options
12 V DC pulse detection (voltage supplied by PCB)	12 V DC pulse detection (voltage supplied by PCB)
230 V AC supplied by PCB	230 V AC supplied by PCB
Continuous	Continuous current
DHW pump output	Domestic hot water pump output
DHW pump	Domestic hot water pump

English	Translation
Electrical meters	Electrical meters
For safety thermostat	For safety thermostat
Inrush	Inrush current
Max. load	Maximum load
Normally closed	Normally closed
Normally open	Normally open
Safety thermostat contact: 16 V DC detection (voltage supplied by PCB)	Safety thermostat contact: 16 V DC detection (voltage supplied by PCB)
Shut-off valve	Shut-off valve
SWB	Switch box
(7) Optional BUH	(7) Optional backup heater
SWB	Switch box
(7) Option PCBs	(7) Option PCBs
Alarm output	Alarm output
Changeover to ext. heat source	Changeover to external heat source
Max. load	Maximum load
Min. load	Minimum load
Only for demand PCB option	Only for demand PCB option
Only for digital I/O PCB option	Only for digital I/O PCB option
Options: ext. heat source output, alarm output	Options: external heat source output, alarm output
Options: On/OFF output	Options: On/OFF output
Power limitation digital inputs: 12 V DC / 12 mA detection (voltage supplied by PCB)	Power limitation digital inputs: 12 V DC / 12 mA detection (voltage supplied by PCB)
Space C/H On/OFF output	Space cooling/heating On/OFF output
SWB	Switch box
(8) External On/OFF thermostats and heat pump convector	(8) External On/OFF thermostats and heat pump convector
Additional LWT zone	Additional leaving water temperature zone
Main LWT zone	Main leaving water temperature zone
Only for external sensor (floor/ambient)	Only for external sensor (floor or ambient)
Only for heat pump convector	Only for heat pump convector
Only for wired On/OFF thermostat	Only for wired On/OFF thermostat
Only for wireless On/OFF thermostat	Only for wireless On/OFF thermostat

8 Technical data

Electrical connection diagram

For more details, please check the unit wiring.



4D112068B

8.3 Table 1 – Maximum refrigerant charge allowed in a room: indoor unit

A_{room} (m ²)	Maximum refrigerant charge in a room (m_{max}) (kg)
	H=600 mm
1	0.138
2	0.276
3	0.414
4	0.553
5	0.691
6	0.829
7	0.907
8	0.970
9	1.028
10	1.084
11	1.137
12	1.187
13	1.236
14	1.283
15	1.328
16	1.371
17	1.413
18	1.454
19	1.494
20	1.533
21	1.571
22	1.608
23	1.644
24	1.679
25	1.714
26	1.748
27	1.781
28	1.814
29	1.846
30	1.877
31	1.909



INFORMATION

- For floorstanding models, the value of "Installation height (H)" is considered 600 mm to comply to IEC 60335-2-40:2013 A1 2016 Clause GG2.
- For intermediate A_{room} values (i.e. when A_{room} is between two values from the table), consider the value that corresponds to the lower A_{room} value from the table. If $A_{\text{room}}=12.5 \text{ m}^2$, consider the value that corresponds to " $A_{\text{room}}=12 \text{ m}^2$ ".



INFORMATION

- For floorstanding models, the value of "Installation height (H)" is considered 600 mm to comply to IEC 60335-2-40:2013 A1 2016 Clause GG2.
- For intermediate m_c values (i.e. when m_c is between two values from the table), consider the value that corresponds to the higher m_c value from the table. If $m_c=1.87 \text{ kg}$, consider the value that corresponds to " $m_c=1.88 \text{ kg}$ ".
- Systems with a total refrigerant charge (m_c) <1.84 kg (i.e. if the piping length is <27 m) are NOT subjected to any requirements to the installation room.
- Charges >1.9 kg are NOT allowed in the unit.

8.5 Table 3 – Minimum venting opening area for natural ventilation: indoor unit

m_c	m_{max}	$dm=m_c-m_{\text{max}}$ (kg)	Minimum venting opening area (cm ²)
			H=600 mm
1.9	0.1	1.80	729
1.9	0.3	1.60	648
1.9	0.5	1.40	567
1.9	0.7	1.20	486
1.9	0.9	1.00	418
1.9	1.1	0.80	370
1.9	1.3	0.60	301
1.9	1.5	0.40	216
1.9	1.7	0.20	115



INFORMATION

- For floorstanding models, the value of "Installation height (H)" is considered 600 mm to comply to IEC 60335-2-40:2013 A1 2016 Clause GG2.
- For intermediate dm values (i.e. when dm is between two dm values from the table), consider the value that corresponds to the higher dm value from the table. If $dm=1.55 \text{ kg}$, consider the value that corresponds to " $dm=1.6 \text{ kg}$ ".

8.4 Table 2 – Minimum floor area: indoor unit

m_c (kg)	Minimum floor area (m ²)
	H=600 mm
1.84	28.81
1.86	29.44
1.88	30.08
1.90	30.72

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