

Installation manual



X Series - Tank (180l/230l)



<https://daikintechanicaldatahub.eu>



CHVX07S18A▲4V▼
CHVX07S23A▲4V▼

CHVX07S18A▲9W▼
CHVX07S23A▲9W▼

▲ = A, B, C, ..., Z
▼ = , , 1, 2, 3, ..., 9

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1 About this document

Target audience

Authorised installers

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 indoor unit)
- **Operation manual:**
 - Quick guide for basic usage
 - Format: Paper (in the box of the indoor unit)
- **User reference guide:**
 - Detailed step-by-step instructions and background information for basic and advanced usage
 - Format: Digital files on <https://www.daikin.eu>. Use the search function 🔍 to find your model.
- **Installation manual – Outdoor unit:**
 - Installation instructions
 - Format: Paper (in the box of the outdoor unit)
- **Installation manual – Indoor unit:**
 - Installation instructions
 - Format: Paper (in the box of the indoor unit)
- **Installer reference guide:**
 - Preparation of the installation, good practices, reference data, ...
 - Format: Digital files on <https://www.daikin.eu>. Use the search function 🔍 to find your model.
- **Addendum book for optional equipment:**
 - Additional info about how to install optional equipment
 - Format: Paper (in the box of the indoor unit) + Digital files on <https://www.daikin.eu>. Use the search function 🔍 to find your model.

The latest revision of the supplied documentation is published on the regional Daikin website and is available via your dealer.

The original instructions are written in English. All other languages are translations of the original instructions.

Technical engineering data

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

Online tools

In addition to the documentation set, some online tools are available for installers:

▪ Daikin Technical Data Hub

- Central hub for technical specifications of the unit, useful tools, digital resources, and more.
- Publicly accessible via <https://daikintechdatahub.eu>.

▪ Heating Solutions Navigator

- Digital toolbox that offers a variety of tools to facilitate the installation and configuration of heating systems.
- To access the Heating Solutions Navigator, registration to the Stand By Me platform is required. For more information, see <https://professional.standbyme.daikin.eu>.

▪ Daikin e-Care

- Mobile app for installers and service technicians that allows you to register, configure and troubleshoot heating systems.
- Use the QR codes below to download the mobile app for iOS and Android devices. Registration to the Stand By Me platform is required to access the app.

App Store



Google Play



2 Specific installer safety instructions

Always observe the following safety instructions and regulations.

Installation site (see "[4.1 Preparing the installation site](#)" ▶ 4))



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.



WARNING

Follow the service space dimensions in this manual to install the unit correctly. See "[4.1.1 Installation site requirements of the indoor unit](#)" ▶ 5].

Special requirements for R32 (see "[4.1.2 Special requirements for R32 units](#)" ▶ 5))



A2L

WARNING: MILDLY FLAMMABLE MATERIAL

The refrigerant inside this unit is mildly flammable.



WARNING

- Do NOT pierce or burn refrigerant cycle parts.
- 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 as follows:

- in such a way as to prevent mechanical damage.
- in a well-ventilated room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater).



WARNING

For units using the R32 refrigerant it is necessary to keep any required ventilation openings and chimneys clear of obstructions.



WARNING

- Take precautions to avoid excessive vibration or pulsation to refrigeration piping.
- Protect the protection devices, piping and fittings as much as possible against adverse environmental effects.
- Provide space for expansion and contraction of long runs of piping.
- Design and install piping in refrigerating systems such as to minimise the likelihood of hydraulic shock damaging the system.



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.



CAUTION

Field-made refrigerant joints indoors shall be tightness tested. The test method shall have a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0,25 times the maximum allowable pressure. No leak shall be detected.

Opening and closing the unit (see "[4.2 Opening and closing the unit](#)" ▶ 11))



DANGER: RISK OF ELECTROCUTION



DANGER: RISK OF BURNING/SCALDING

Mounting the indoor unit (see "[4.3 Mounting the indoor unit](#)" ▶ 12))



WARNING

Fixing method of the indoor unit MUST be in accordance with the instructions from this manual. See "[4.3 Mounting the indoor unit](#)" ▶ 12].

Piping installation (see "[5 Piping installation](#)" ▶ 13))



WARNING

Field piping MUST be in accordance with the instructions from this manual. See "[5 Piping installation](#)" ▶ 13].

Electrical installation (see "[6 Electrical installation](#)" ▶ 16))



DANGER: RISK OF ELECTROCUTION



WARNING

Electrical wiring MUST be in accordance with the instructions from:

- This manual. See "[6 Electrical installation](#)" ▶ 16].
- The wiring diagram, which is delivered with the unit, located on the inside of the indoor unit switch box cover. For a translation of its legend, see "[10.2 Wiring diagram: Indoor unit](#)" ▶ 35].



WARNING

- All wiring MUST be performed by an authorised electrician and MUST comply with the national wiring regulation.
- Make electrical connections to the fixed wiring.
- All components procured on-site and all electrical construction MUST comply with the applicable legislation.

3 About the box



WARNING

If the supply cord is damaged, it **MUST** be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.



WARNING

ALWAYS use multicore cable for power supply cables.



WARNING

Do **NOT** extend the power supply or the interconnection cable by using wire connectors, wire connection clamps, taped wires, extension cords.

These can cause overheating, electric shock or fire.



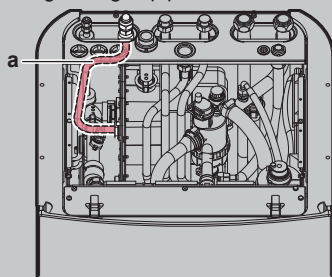
CAUTION

Do **NOT** push or place redundant cable length into the unit.



WARNING

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



a Refrigerant gas pipe



WARNING

The backup heater **MUST** have a dedicated power supply and **MUST** be protected by the safety devices required by the national wiring regulation.



CAUTION

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



INFORMATION

For details on the fuse ratings, the fuse types and the circuit breaker ratings, see "6 Electrical installation" [p. 16].

Commissioning (see "8 Commissioning" [p. 32])



WARNING

Commissioning **MUST** be in accordance with the instructions from this manual. See "8 Commissioning" [p. 32].



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:** In case of a breakdown, refrigerant might leak into the water circuit, and subsequently into the room when you purge air from the heat emitters or collectors.

3 About the box

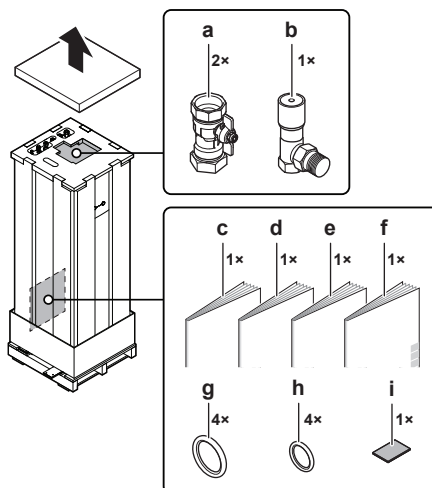
Keep the following in mind:

- At delivery, the unit **MUST** be checked for damage and completeness. Any damage or missing parts **MUST** be reported immediately to the claims agent of the carrier.

- Bring the packed unit as close as possible to its final installation position to prevent damage during transport.
- Prepare in advance the path along which you want to bring the unit to its final installation position.

3.1 Indoor unit

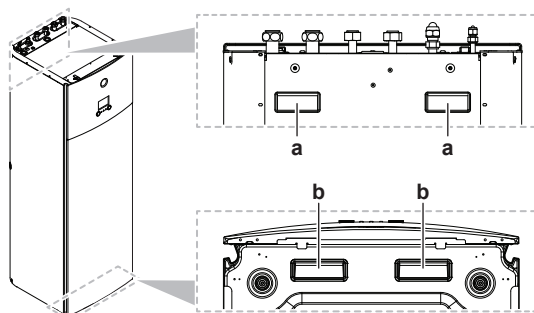
3.1.1 To remove the accessories from the indoor unit



- a Shut-off valves for water circuit
- b Differential pressure bypass valve
- c General safety precautions
- d Addendum book for optional equipment
- e Indoor unit installation manual
- f Operation manual
- g Sealing rings for shut-off valves (space heating water circuit)
- h Sealing rings for field-supplied shut-off valves (domestic hot water circuit)
- i Sealing tape for low voltage wiring intake

3.1.2 To handle the indoor unit

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



- a Handles at the back of the unit
- b Handles at the bottom of the unit. Carefully tilt the unit backwards so that the handles become visible.

4 Unit installation

4.1 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.

4.1.1 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
 - Space cooling operation: 5~35°C
 - Domestic hot water production: 5~35°C



INFORMATION

DX indoor units have two operation modes: heating and cooling.

In case of floorstanding indoor units:

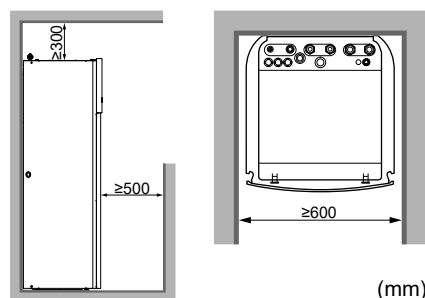
- Cooling is only allowed with underfloor heating + bizonal kit.
 - In cooling mode, you cannot set the underfloor heating loop to a setpoint lower than 18°C.
 - Cooling with fan coil unit or radiators is not allowed.
- Mind the following measurements guidelines:

Maximum refrigerant piping length ^(a) between indoor unit and outdoor unit	≤30 m
Minimum refrigerant piping length ^(a) between indoor unit and outdoor unit	3 m

^(a) Refrigerant piping length is the one-way length of liquid piping.

	Height difference outdoor-indoor	Height difference indoor-indoor
Outdoor unit installed higher than indoor unit	≤30 m	≤7.5 m
Outdoor unit installed lower than at least 1 indoor unit	≤15 m	≤15 m

- Mind the following spacing installation guidelines:



Additionally to the spacing guidelines: Because the total refrigerant charge in the system is ≥1.84 kg, the room where you install the indoor unit must also comply with the conditions described in "4.1.3 Installation patterns" [p. 6].



INFORMATION

If you have limited installation space, do the following before installing the unit in its final position: "4.3.1 To connect the drain hose to the drain" [p. 12]. It requires to remove one or both side panels.

4.1.2 Special requirements for R32 units

Additionally to the spacing guidelines: Because the total refrigerant charge in the system is ≥1.84 kg, the room where you install the indoor unit must also comply with the conditions described in "4.1.3 Installation patterns" [p. 6].



A2L

WARNING: MILDLY FLAMMABLE MATERIAL

The refrigerant inside this unit is mildly flammable.



WARNING

- Do NOT pierce or burn refrigerant cycle parts.
- 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 as follows:

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



WARNING

For units using the R32 refrigerant it is necessary to keep any required ventilation openings and chimneys clear of obstructions.



WARNING

- Take precautions to avoid excessive vibration or pulsation to refrigeration piping.
- Protect the protection devices, piping and fittings as much as possible against adverse environmental effects.
- Provide space for expansion and contraction of long runs of piping.
- Design and install piping in refrigerating systems such as to minimise the likelihood of hydraulic shock damaging the system.



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

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



NOTICE

- The pipework shall be securely mounted and guarded protected from physical damage.
- Keep the pipework installation to a minimum.

4 Unit installation

4.1.3 Installation patterns



WARNING

For units using the R32 refrigerant it is necessary to keep any required ventilation openings and chimneys clear of obstructions.

Depending on the type of room in which you install the indoor unit, different installation patterns are allowed:

Room type	Allowed patterns			
Living room, kitchen, garage, attic, basement, storage room	1, 2, 3			
Technical room (i.e. room that is NEVER occupied by persons)	1, 2, 3, 4			
	PATTERN 1	PATTERN 2	PATTERN 3	PATTERN 4
Ventilation openings	N/A	Between room A and B	N/A	Between room A and outside
Minimum floor area	Room A	Room A + Room B	N/A	N/A
Chimney	Might be needed	Might be needed	Connected to outside	N/A
Release in case of refrigerant leakage	Inside room A	Inside room A	Outside	Inside room A
Restrictions	See "PATTERN 1" [p. 7], "PATTERN 2" [p. 7], "PATTERN 3" [p. 9], and "Tables for PATTERN 1, 2 and 3" [p. 9]			See "PATTERN 4" [p. 11]

A	Room A (= room where indoor unit is installed)
B	Room B (= adjacent room)
a	If no chimney is installed, this is the default point of release in case of refrigerant leakage. If needed, you can connect a chimney here.
b	Chimney
c1	Bottom opening for natural ventilation
c2	Top opening for natural ventilation
H_{release}	Actual release height: 1a/2a : Without chimney. From floor to top of the unit. ▪ For 180 l units => H _{release} = 1.66 m ▪ For 230 l units => H _{release} = 1.86 m 1b/2b : With chimney. From floor to top of the chimney. ▪ For 180 l units => H _{release} = 1.66 m + Chimney height ▪ For 230 l units => H _{release} = 1.86 m + Chimney height
3a	Installation with chimney connected to the outside. The release height is not relevant. There are no requirements to the minimum floor area.
N/A	Not applicable

Minimum floor area / Release height:

- The minimum floor area requirements depend on the release height of the refrigerant in case of a leakage. The higher the release height, the lower the minimum floor area requirements.
- The default point of release (without chimney) is at the top of the unit. To decrease the minimum floor area requirements, you can increase the release height by installing a chimney. If the chimney leads outside of the building, there are no requirements anymore to the minimum floor area.
- You can also take advantage of the floor area of the adjacent room (= room B) by providing ventilation openings between the two rooms.
- For installations in technical rooms (i.e. room that is NEVER occupied by persons), additionally to patterns 1, 2 and 3, you can also use **PATTERN 4**. For this pattern there are no requirements to the minimum floor area if you provide two openings (one at the bottom, one at the top) between the room and the outside to ensure natural ventilation. The room must be protected from frost.

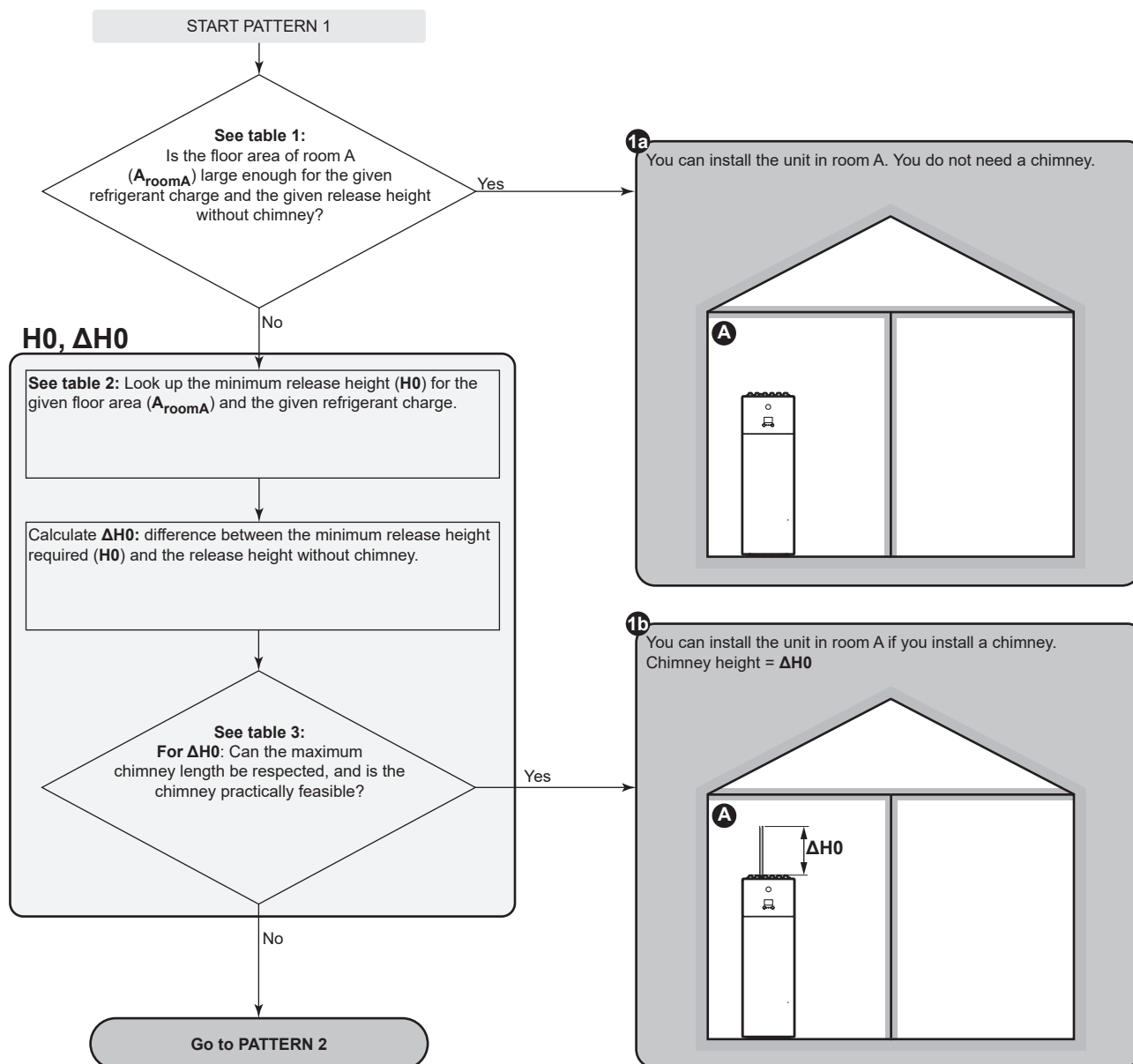


WARNING

Chimney connection. When connecting a chimney, take the following into account:

- Unit's connection point for the chimney = 1" male thread. Use a compatible counterpart for the chimney.
- Make sure the connection is airtight.
- The chimney material is unimportant.

PATTERN 1

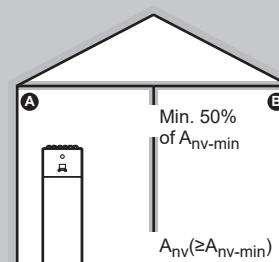


PATTERN 2

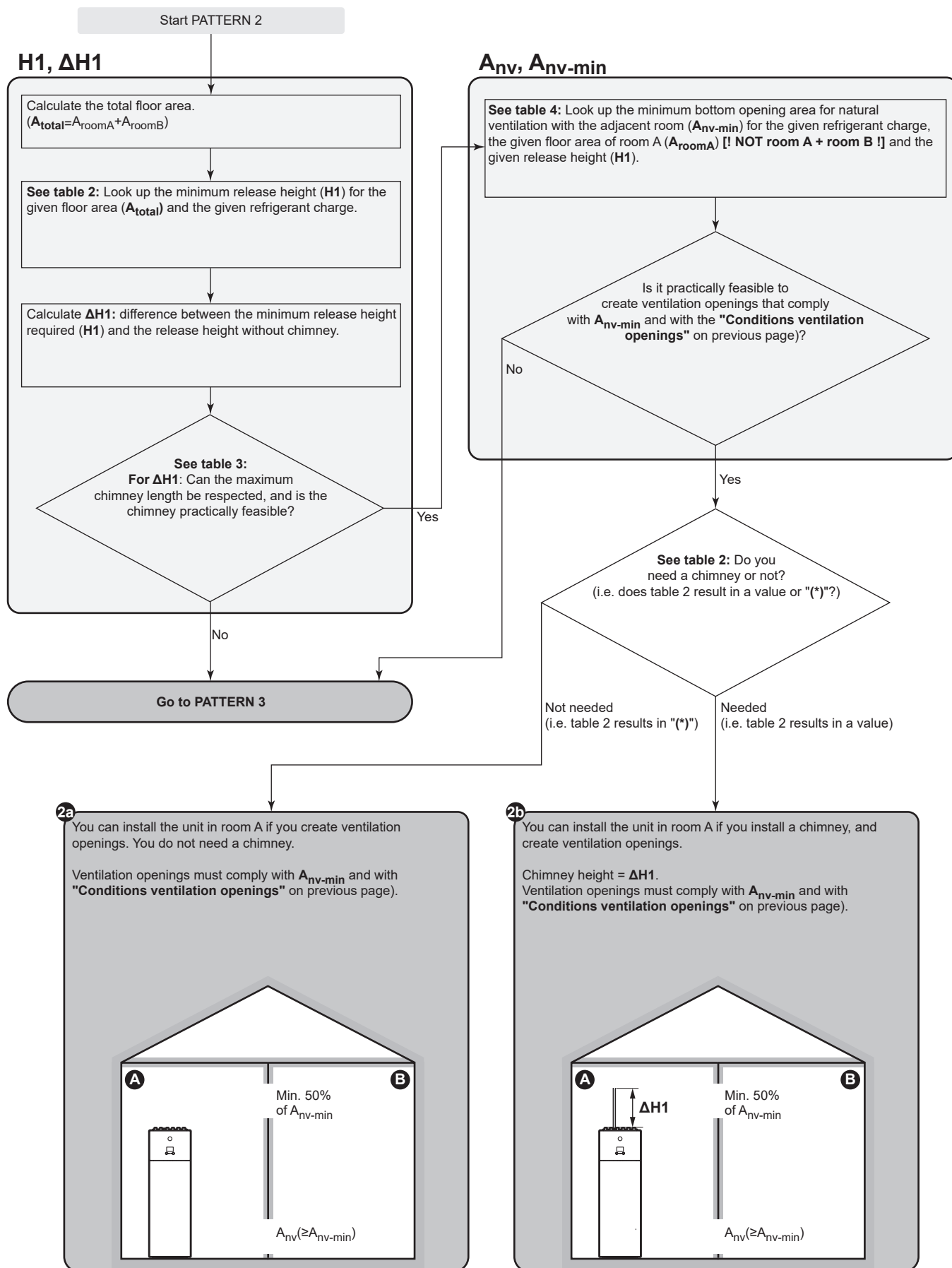
PATTERN 2: Conditions ventilation openings

If you want to take advantage of the floor area of the adjacent room, you must provide 2 openings (one at the bottom, one at the top) between the rooms to ensure natural ventilation. The openings must comply with the following conditions:

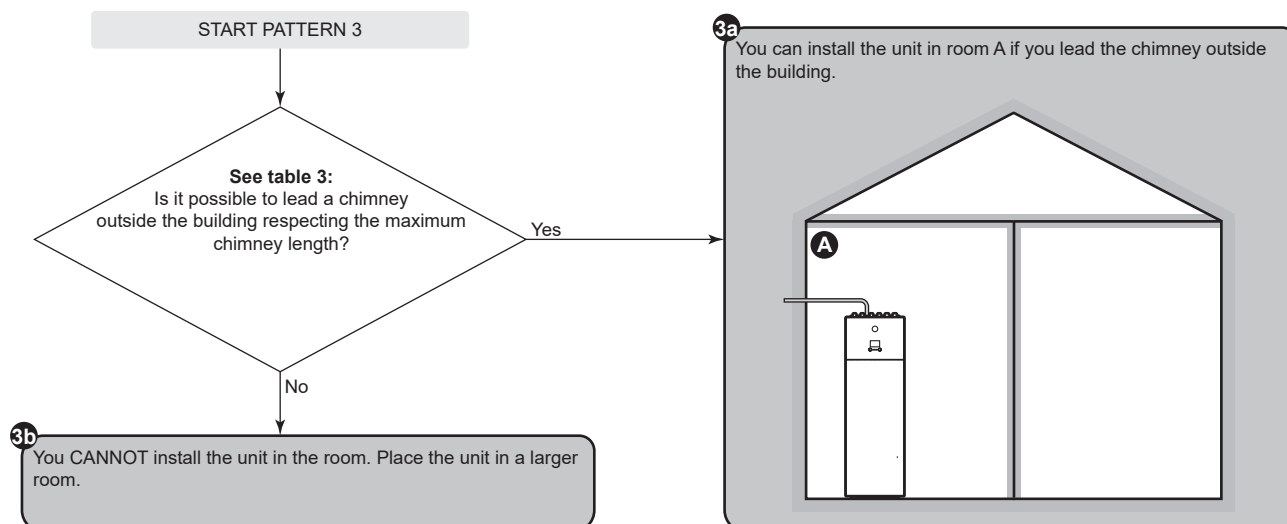
- **Bottom opening (A_{nv}):**
 - Must be a permanent opening that cannot be closed.
 - Must be completely located between 0 and 300 mm from the floor.
 - Must be $\geq A_{nv-min}$ (minimum bottom opening area).
 - $\geq 50\%$ of the required opening area A_{nv-min} must be ≤ 200 mm from the floor.
 - The bottom of the opening must be ≤ 100 mm from the floor.
 - If the opening starts from the floor, the height of the opening must be ≥ 20 mm.
- **Top opening:**
 - Must be a permanent opening that cannot be closed.
 - Must be $\geq 50\%$ of A_{nv-min} (minimum bottom opening area).
 - Must be ≥ 1.5 m from the floor.



4 Unit installation



PATTERN 3



Tables for PATTERN 1, 2 and 3

Table 1: Minimum floor area

For intermediate refrigerant charges, use the row with the higher value. **Example:** If the refrigerant charge is 1.8 kg, use the row of 2 kg.

Charge (kg)	Minimum floor area (m ²)	
	Release height without chimney (m)	
	1.66 (Unit=180 l)	1.86 (Unit=230 l)
1.5	3.92	3.50
2	5.23	4.66
2.4	6.40	5.60
2.6	7.51	6.06
3	9.99	7.95
3.3	12.09	9.62

Table 2: Minimum release height

Take the following into account:

- For intermediate floor areas, use the column with the lower value. **Example:** If the floor area is 22.50 m², use the column of 20.00 m².
- For intermediate refrigerant charges, use the row with the higher value. **Example:** If the refrigerant charge is 1.8 kg, use the row of 2 kg.
- (*): The release height of the unit without chimney (for 180 l units: 1.66 m; for 230 l units: 1.86 m) is already higher than the minimum required release height. => OK (no chimney needed).

Charge (kg)	Minimum release height (m)						
	Floor area (m ²)						
	2.50	5.00	10.00	15.00	20.00	25.00	30.00
1.5	2.61	(*)	(*)	(*)	(*)	(*)	(*)
2	3.47	1.74	(*)	(*)	(*)	(*)	(*)
2.4	4.17	2.08	(*)	(*)	(*)	(*)	(*)
2.6	4.52	2.26	(*)	(*)	(*)	(*)	(*)
3	5.21	2.61	1.66	(*)	(*)	(*)	(*)
3.3	5.73	2.87	1.83	(*)	(*)	(*)	(*)

4 Unit installation

Table 3: Maximum chimney length

When installing a chimney, the chimney length must be less than the maximum chimney length.

- Use the columns with the correct refrigerant charge. For intermediate refrigerant charges, use the columns with the higher value. **Example:** If the refrigerant charge is 3.0 kg, use the columns of 3.3 kg.
- For intermediate diameters, use the column with the lower value. **Example:** If the diameter is 23 mm, use the column of 22 mm.
- X: Not allowed

Maximum chimney length (m) – In case of Refrigerant charge=2.6 kg (and T=60°C)						In case of Refrigerant charge=3.3 kg (and T=60°C)				
Chimney	Inside diameter of chimney (mm)					Inside diameter of chimney (mm)				
	20 mm	22 mm	24 mm	26 mm	28 mm	20 mm	22 mm	24 mm	26 mm	28 mm
Straight pipe	46.99 m	78.61 m	123.42 m	185.02 m	267.54 m	27.35 m	46.93 m	74.81 m	113.26 m	164.87 m
1× 90° elbow	45.19 m	76.63 m	121.26 m	182.68 m	265.02 m	25.55 m	44.95 m	72.65 m	110.92 m	162.35 m
2× 90° elbow	43.39 m	74.65 m	119.10 m	180.34 m	262.50 m	23.75 m	42.97 m	70.49 m	108.58 m	159.83 m
3× 90° elbow	41.59 m	72.67 m	116.94 m	178.00 m	259.98 m	21.95 m	40.99 m	68.33 m	106.24 m	157.31 m

Table 4: Minimum bottom opening area for natural ventilation

Take the following into account:

- Use the correct table. For intermediate refrigerant charges, use the table with the higher value. **Example:** If the refrigerant charge is 1.8 kg, use the table of 2 kg.
- For intermediate floor areas, use the column with the lower value. **Example:** If the floor area is 12.50 m², use the column of 10.00 m².
- For intermediate release height values, use the row with the lower value. **Example:** If the release height is 1.90 m, use the row of 1.86 m.
- A_{nv}: Bottom opening area for natural ventilation.
- A_{nv-min}: Minimum bottom opening area for natural ventilation.
- (*): Already OK (no ventilation openings needed).

Minimum opening area for natural ventilation A _{nv} (m ²) - In case of Refrigerant charge=2.0 kg							
Release height (m)	Floor area of room A (m ²)						
	2.50	5.00	10.00	15.00	20.00	25.00	30.00
1.66	0.025	0.002	(*)	(*)	(*)	(*)	(*)
1.86	0.021	(*)	(*)	(*)	(*)	(*)	(*)
2.06	0.018	(*)	(*)	(*)	(*)	(*)	(*)
2.26	0.015	(*)	(*)	(*)	(*)	(*)	(*)
2.46	0.012	(*)	(*)	(*)	(*)	(*)	(*)
2.66	0.009	(*)	(*)	(*)	(*)	(*)	(*)
2.86	0.007	(*)	(*)	(*)	(*)	(*)	(*)
3.06	0.004	(*)	(*)	(*)	(*)	(*)	(*)

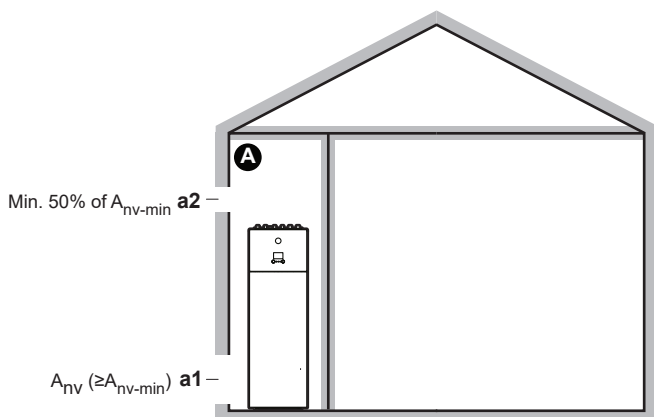
Minimum opening area for natural ventilation A _{nv} (m ²) - In case of Refrigerant charge=2.4 kg							
Release height (m)	Floor area of room A (m ²)						
	2.50	5.00	10.00	15.00	20.00	25.00	30.00
1.66	0.035	0.012	(*)	(*)	(*)	(*)	(*)
1.86	0.031	0.006	(*)	(*)	(*)	(*)	(*)
2.06	0.027	0.001	(*)	(*)	(*)	(*)	(*)
2.26	0.023	(*)	(*)	(*)	(*)	(*)	(*)
2.46	0.020	(*)	(*)	(*)	(*)	(*)	(*)
2.66	0.017	(*)	(*)	(*)	(*)	(*)	(*)
2.86	0.014	(*)	(*)	(*)	(*)	(*)	(*)
3.06	0.011	(*)	(*)	(*)	(*)	(*)	(*)

Minimum opening area for natural ventilation A _{nv} (m ²) - In case of Refrigerant charge=2.6 kg							
Release height (m)	Floor area of room A (m ²)						
	2.50	5.00	10.00	15.00	20.00	25.00	30.00
1.66	0.040	0.017	(*)	(*)	(*)	(*)	(*)
1.86	0.035	0.011	(*)	(*)	(*)	(*)	(*)
2.06	0.031	0.005	(*)	(*)	(*)	(*)	(*)
2.26	0.027	(*)	(*)	(*)	(*)	(*)	(*)
2.46	0.024	(*)	(*)	(*)	(*)	(*)	(*)
2.66	0.021	(*)	(*)	(*)	(*)	(*)	(*)
2.86	0.018	(*)	(*)	(*)	(*)	(*)	(*)
3.06	0.015	(*)	(*)	(*)	(*)	(*)	(*)

Minimum opening area for natural ventilation A _{nv} (m ²) - In case of Refrigerant charge=3.3 kg							
Release height (m)	Floor area of room A (m ²)						
	2.50	5.00	10.00	15.00	20.00	25.00	30.00
1.66	0.057	0.034	0.008	(*)	(*)	(*)	(*)
1.86	0.051	0.027	(*)	(*)	(*)	(*)	(*)
2.06	0.046	0.020	(*)	(*)	(*)	(*)	(*)
2.26	0.042	0.015	(*)	(*)	(*)	(*)	(*)
2.46	0.038	0.009	(*)	(*)	(*)	(*)	(*)
2.66	0.034	0.005	(*)	(*)	(*)	(*)	(*)
2.86	0.031	(*)	(*)	(*)	(*)	(*)	(*)
3.06	0.028	(*)	(*)	(*)	(*)	(*)	(*)

PATTERN 4

PATTERN 4 is only allowed for installations in technical rooms (i.e. room that is NEVER occupied by persons). For this pattern there are no requirements to the minimum floor area if you provide 2 openings (one at the bottom, one at the top) between the room and the outside to ensure natural ventilation. The room must be protected from frost.



A	Unoccupied room where the indoor unit is installed. Must be protected from frost.
a1	A_{nv}: Bottom opening for natural ventilation between the unoccupied room and the outside. - Must be a permanent opening that cannot be closed. - Must be above ground level. - Must be completely located between 0 and 300 mm from the floor of the unoccupied room. - Must be $\geq A_{nv-min}$ (minimum bottom opening area as specified in the table below). $\geq 50\%$ of the required opening area A_{nv-min} must be ≤ 200 mm from the floor of the unoccupied room. - The bottom of the opening must be ≤ 100 mm from the floor of the unoccupied room. - If the opening starts from the floor, the height of the opening must be ≥ 20 mm.
a2	Top opening for natural ventilation between room A and the outside. - Must be a permanent opening that cannot be closed. - Must be $\geq 50\%$ of A_{nv-min} (minimum bottom opening area as specified in the table below). - Must be ≥ 1.5 m from the floor of the unoccupied room.

 A_{nv-min} (minimum bottom opening area for natural ventilation)

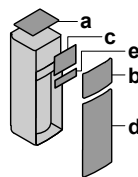
The minimum bottom opening area for natural ventilation between the unoccupied room and the outside depends on the total refrigerant in the system. For intermediate refrigerant charges, use the row with the higher value. **Example:** If the refrigerant charge is 4.3 kg, use the row of 4.4 kg.

Total refrigerant charge (kg)	A_{nv-min} (dm ²)
1.5 kg	6.2 dm ²
2 kg	7.1 dm ²
2.4 kg	7.8 dm ²
2.6 kg	8.1 dm ²
3 kg	8.8 dm ²
3.3 kg	9.2 dm ²

4.2 Opening and closing the unit

4.2.1 To open the indoor unit

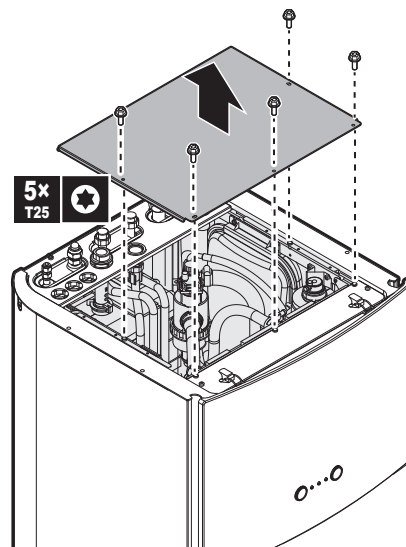
Overview



- a Top panel
- b User interface panel
- c Switch box cover
- d Front panel
- e High voltage switch box cover

Open

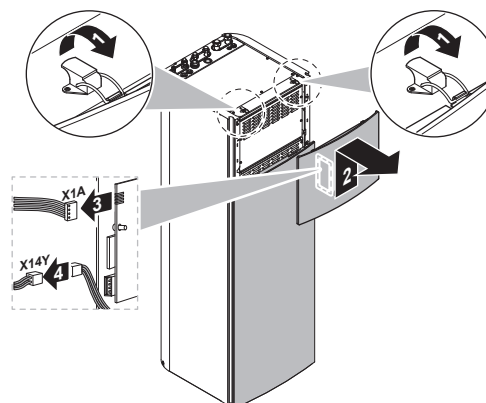
- 1 Remove the top panel.



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

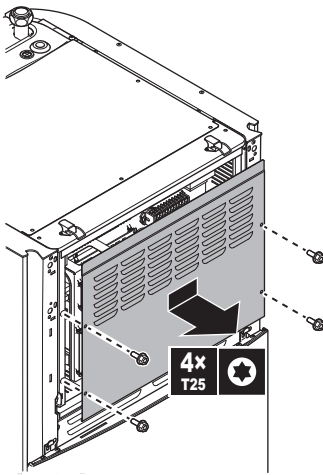
**NOTICE**

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



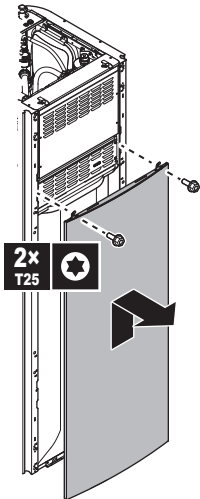
- 3 Remove the switch box cover.

4 Unit installation

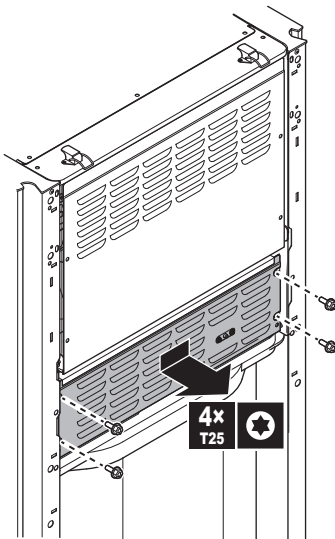


4 If necessary, remove the front plate. This is, for example, necessary in the following cases:

- "4.2.2 To lower the switch box" ▶ 12]
- "4.3.1 To connect the drain hose to the drain" ▶ 12]
- When you need access to the high voltage switch box



5 If you need access to the high voltage components, remove the high voltage switch box cover.

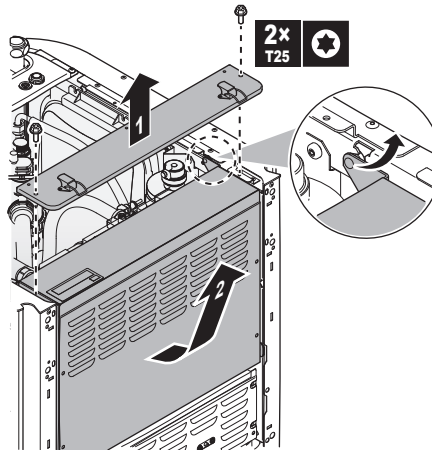


4.2.2 To lower the switch box

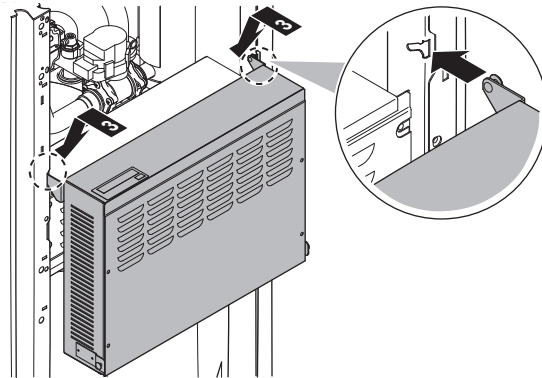
During the installation, you will need access to the inside of the indoor unit. To have easier front access, hang the switch box outside the unit, over the high voltage switch box cover.

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

- 1 Remove the fixing plate at the top of the unit.
- 2 Tilt the switch box to the front and lift it out of its hinges.



3 Hang the switch box in front of the high voltage switch box cover. Use the 2 hinges located lower on the unit.



NOTICE

When routing the power supply cable, consider extra cable length to allow lower position of the printed circuit board. Fix the cable in order to avoid contact with piping when the switch box is in normal/operating position.

4.2.3 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, make sure that the tightening torque does NOT exceed 4.1 N•m.

4.3 Mounting the indoor unit

4.3.1 To connect the drain hose to the drain

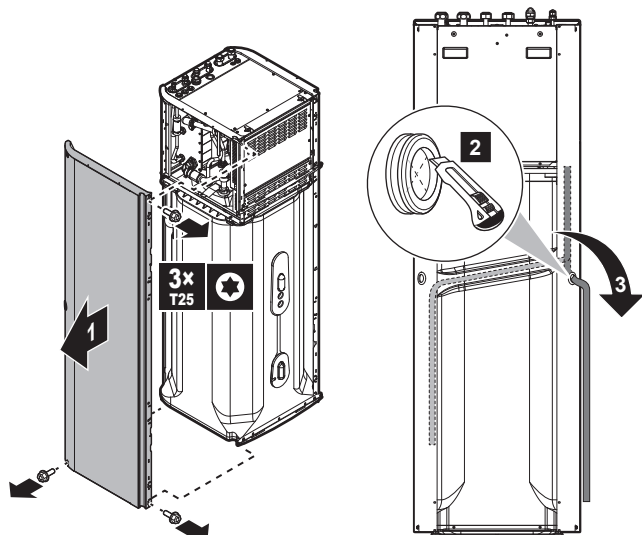
Water coming from the pressure relief valve is collected in the drain pan. The drain pan is connected to a drain hose inside the unit. Connect the drain hose to an appropriate drain according to the applicable legislation. You can route the drain hose through the left or right side panel.

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

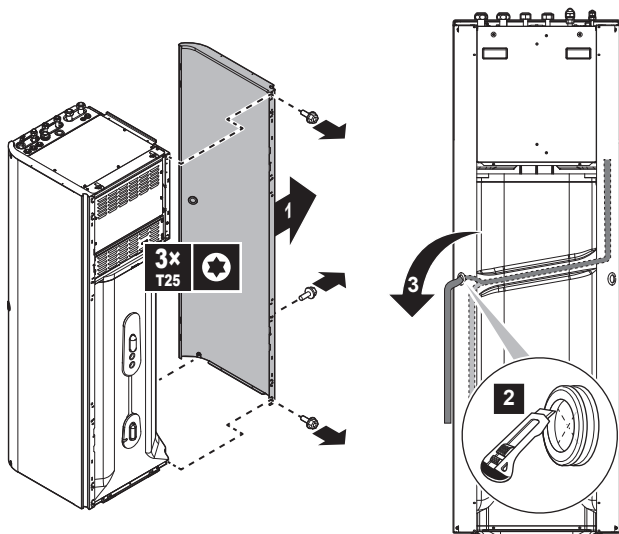
- 1 Remove one of the side panels.
- 2 Cut out the rubber grommet.
- 3 Pull the drain hose through the hole.
- 4 Reattach the side panel. Ensure the water can flow through the drain tube.

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

Option 1: Through the left side panel

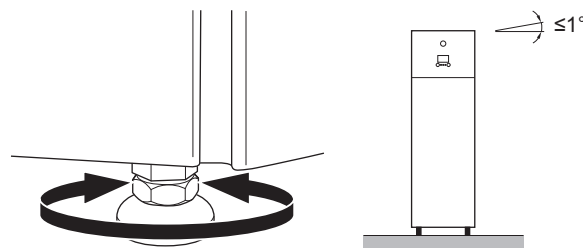


Option 2: Through the right side panel



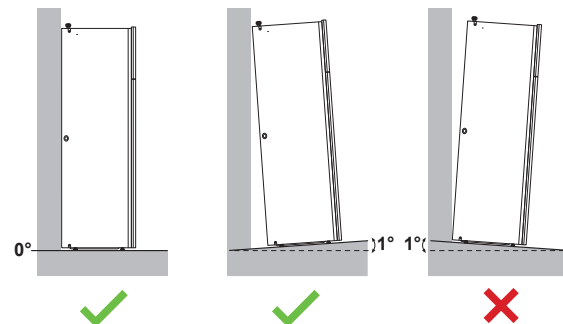
4.3.2 To install the indoor unit

- 1 Lift the indoor unit from the pallet and place it on the floor. Also see "3.1.2 To handle the indoor unit" [p 4].
- 2 Connect the drain hose to the drain. See "4.3.1 To connect the drain hose to the drain" [p 12].
- 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:



5 Piping installation

5.1 Preparing refrigerant piping

5.1.1 Refrigerant piping requirements

Also see "4.1.2 Special requirements for R32 units" [p 5] for additional requirements.

Piping length

See "4.1.1 Installation site requirements of the indoor unit" [p 5].

Piping material

Phosphoric acid deoxidised seamless copper

Piping connections

Only flare and brazed connections are allowed. The indoor and outdoor units have flare connections. Connect both ends without brazing. If brazing should be needed, take the guidelines in the installer reference guide into account.

Flare connections

Only use annealed material.

Piping diameter

Liquid piping	Gas piping
Ø6.35 mm (1/4")	Ø15.9 mm (5/8")

Piping temper grade and thickness

Outer diameter (Ø)	Temper grade	Thickness (t) ^(a)	
6.5 mm (1/4")	Annealed (O)	≥0.8 mm	
15.9 mm (5/8")	Annealed (O)	≥1.0 mm	

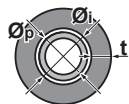
^(a) Depending on the applicable legislation and the maximum working pressure of the unit (see "PS High" on the unit name plate), larger piping thickness might be required.

5 Piping installation

5.1.2 Refrigerant piping insulation

- Use polyethylene foam as insulation material:
 - with a heat transfer rate between 0.041 and 0.052 W/mK (0.035 and 0.045 kcal/mh°C)
 - with a heat resistance of at least 120°C
- Insulation thickness:

Pipe outer diameter ($\varnothing_p$)	Insulation inner diameter ($\varnothing_i$)	Insulation thickness (t)
9.5 mm (3/8")	12~15 mm	≥13 mm
15.9 mm (5/8")	17~20 mm	≥13 mm



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.



INFORMATION

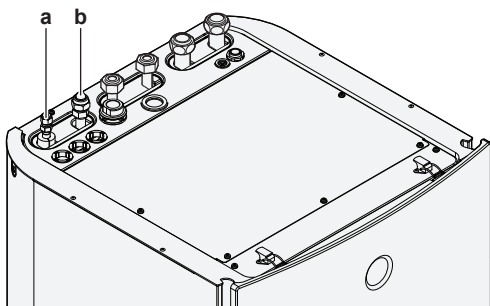
Refer to the installer reference guide of the outdoor unit for more information.

5.2 Connecting refrigerant piping

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

5.2.1 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.

5.3 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.



NOTICE

Water circuit requirements. Make sure to comply with the water pressure and water temperature requirements below. For additional water circuit requirements, see the installer reference guide.

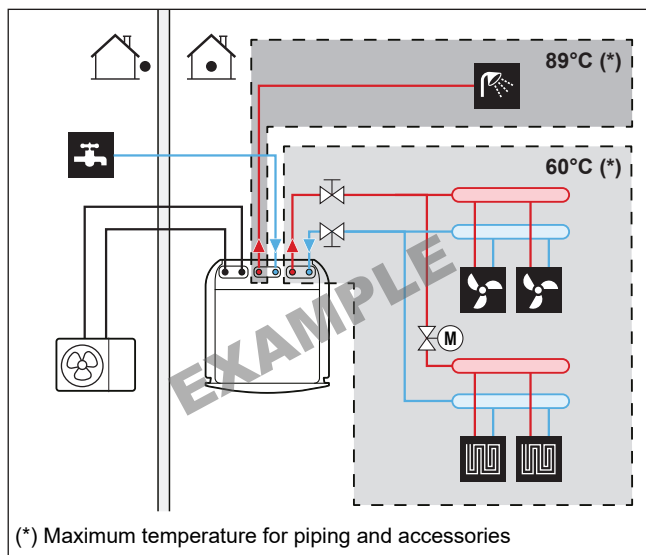
- Water pressure – Domestic hot water.** The maximum water pressure is 10 bar (=1.0 MPa), and must be in accordance with the applicable legislation. Provide adequate safeguards in the water circuit to ensure that the maximum pressure is NOT exceeded (see "5.4.1 To connect the water piping" [p 15]). The minimum water pressure to operate is 1 bar (=0.1 MPa).

- Water pressure – Space heating/cooling circuit.** The maximum water pressure is 3 bar (=0.3 MPa). Provide adequate safeguards in the water circuit to ensure that the maximum pressure is NOT exceeded. The minimum water pressure to operate is 1 bar (=0.1 MPa).
- Water temperature.** All installed piping and piping accessories (valve, connections,...) MUST withstand the following temperatures:



INFORMATION

The following figure is an example and may NOT completely match your system layout.



NOTICE

Make sure water quality complies with EU directive 2020/2184.

5.3.1 To check the water volume and flow rate

Minimum water volume

The installation needs to be made in such a way that a minimum water volume (see table below) is always available in the space heating/cooling loop of the unit, even when the available volume towards the unit is reduced because of closure of valves (heat emitters, thermostatic valves, etc.) in the space heating/cooling circuit. The internal water volume of the indoor unit is NOT considered for this minimum water volume.

If...	Then the minimum water volume is...
Cooling operation	10 l
Heating operation	10 l

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. For this purpose, use the differential pressure bypass valve delivered with the unit.

Minimum required flow rate

12 l/min



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.

See the recommended procedure as described in "8.2 Checklist during commissioning" [p 32].

5.4 Connecting water piping

5.4.1 To connect the water piping

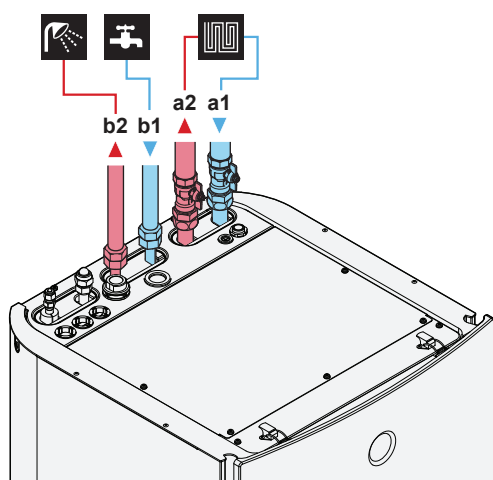


NOTICE

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

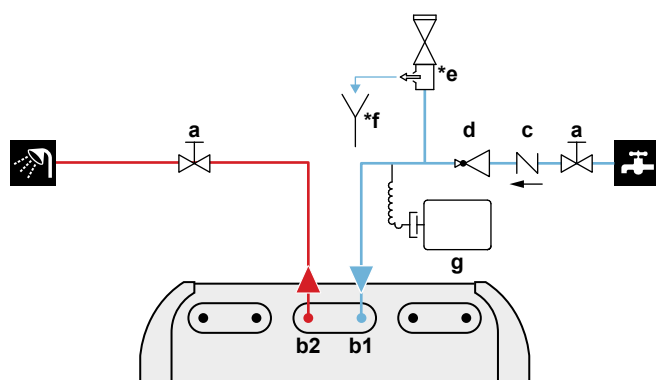
To facilitate service and maintenance, 2 shut-off valves and 1 differential pressure bypass valve are provided. Mount the shut-off valves on the space heating water inlet and space heating water outlet. To ensure the minimum flow rate (and prevent overpressure), install the differential pressure bypass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



- a1 Space heating/cooling – Water IN (screw connection, 1")
- a2 Space heating/cooling – Water OUT (screw connection, 1")
- b1 DHW – Cold water IN (screw connection, 3/4")
- b2 DHW – Hot water OUT (screw connection, 3/4")

- 4 Install the following components (field supply) on the cold water inlet of the DHW tank:



- a Shut-off valve (recommended)
- b1 DHW – Cold water IN (screw connection, 3/4")
- b2 DHW – Hot water OUT (screw connection, 3/4")
- c Non-return valve (recommended)
- d Pressure reducing valve (recommended)
- *e Pressure relief valve (max. 10 bar (=1.0 MPa))(mandatory)
- *f Tundish (mandatory)
- g Expansion vessel (recommended)



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.
- **However, make sure there is no valve between the pressure relief valve (field supply) and the DHW tank.**
- Select valves complying to EN 1487, EN 1488, EN 1489, EN 1490 and EN 1491.



NOTICE

A pressure relief valve (field supply) with an opening pressure of maximum 10 bar (=1 MPa) must be installed on the domestic cold water inlet connection in accordance with the applicable legislation.



NOTICE

- A drain device and pressure relief device must be installed on the cold water inlet connection of the domestic hot water cylinder.
- To avoid back siphonage, it is recommended to install a non-return valve on the water inlet of the domestic hot water tank in accordance with the applicable legislation. Make sure it is NOT between the pressure relief valve and the DHW tank.
- It is recommended to install a pressure reducing valve on the cold water inlet in accordance with the applicable legislation.
- It is recommended to install an expansion vessel on the cold water inlet in accordance with the applicable legislation.
- It is recommended to install the pressure relief valve on a higher position than the top of the domestic hot water tank. Heating of the domestic hot water tank causes water to expand and without pressure relief valve the water pressure inside the tank can rise above the tank design pressure. Also the field installation (piping, tapping points, etc.) connected to the tank is subjected to this high pressure. To prevent this, a pressure relief valve needs to be installed. The overpressure prevention depends on the correct operation of the field installed pressure relief valve. If this is NOT working correctly, overpressure will deform the tank and water leakage may occur. To confirm good operation, regular maintenance is required.



NOTICE



Differential pressure bypass valve (delivered as accessory). We recommend to install the differential pressure bypass valve in the space heating water circuit.

- Mind the minimum water volume when choosing the installation location of the differential pressure bypass valve (at the indoor unit, or at the collector). See ["5.3.1 To check the water volume and flow rate" \[p 14\]](#).
- Mind the minimum flow rate when adjusting the differential pressure bypass valve setting. See ["5.3.1 To check the water volume and flow rate" \[p 14\]](#) and ["8.2.1 To check the minimum flow rate" \[p 33\]](#).



NOTICE

Install air purge valves at all local high points.

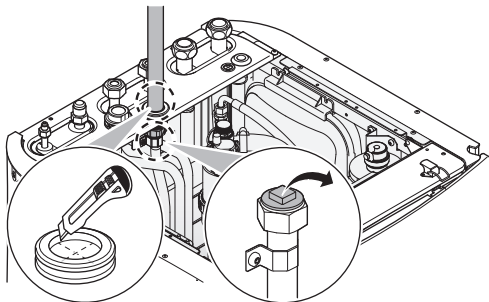
5.4.2 To connect the recirculation piping

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

- 1 Remove the top panel from the unit, see ["4.2.1 To open the indoor unit" \[p 11\]](#).
- 2 Cut out the rubber grommet on top of the unit, and remove the stop. The recirculation connector is placed below the hole.

6 Electrical installation

- 3 Route the recirculation piping through the grommet and connect it to the recirculation connector.



- 4 Reattach the top panel.

5.4.3 To fill the water circuit

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



NOTICE

Pump. To prevent blocking of the pump rotor, commission the unit as quickly as possible after filling the water circuit.



INFORMATION

Make sure both air purge valves (one on the magnetic filter and one on the backup heater) are open.



NOTICE

Make sure water quality complies with EU directive 2020/2184.

5.4.4 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.

5.4.5 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.

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.

6 Electrical installation



DANGER: RISK OF ELECTROCUTION



WARNING

ALWAYS use multicore cable for power supply cables.



WARNING

Do NOT extend the power supply or the interconnection cable by using wire connectors, wire connection clamps, taped wires, extension cords.

These can cause overheating, electric shock or fire.



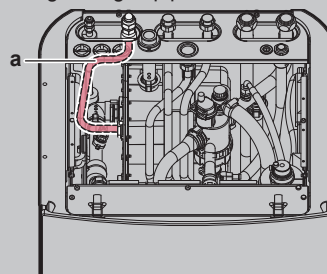
NOTICE

In the power supply line, ALWAYS install a residual current device (RCD) that complies with the national wiring regulation. This **MUST** be an RCD of 30 mA with an instantaneous action, unless otherwise defined by the national wiring regulation.



WARNING

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



a Refrigerant gas pipe



WARNING

Make sure that there is sufficient slack in the electrical wiring to ensure that the switch box can be lowered for installation.

Make sure while lowering the switch box, the electrical wiring does NOT come in contact with sharp edges or hot surfaces or any piping.

6.1 About electrical compliance

Only for the backup heater of the indoor unit

See "6.3.2 To connect the backup heater power supply" [p 19].

6.2 Guidelines when connecting the electrical wiring

Tightening torques

Indoor unit:

Item	Tightening torque (N·m)
X1M	2.45 ±10%
X2M	0.88 ±10%
X5M	0.88 ±10%
X6M	2.45 ±10%
X10M	0.88 ±10%
M4 (earth)	1.47 ±10%

6.3 Connections to the indoor unit

Item	Description
Power supply (main)	See "6.3.1 To connect the main power supply" [p 17].
Power supply (backup heater)	See "6.3.2 To connect the backup heater power supply" [p 19].
Shut-off valve	See "6.3.3 To connect the shut-off valve" [p 20].
Domestic hot water pump	See "6.3.4 To connect the domestic hot water pump" [p 21].
Alarm output	See "6.3.5 To connect the alarm output" [p 21].
Space cooling/heating operation control	See "6.3.6 To connect the space cooling/heating ON/OFF output" [p 22].
Safety thermostat	See "6.3.7 To connect the safety thermostat" [p 22].

Item	Description
Secondary pump	See "6.3.8 To connect the secondary pump" ▶ 23].
Room thermostat (wired or wireless)	See below table.
	Wires: 0.75 mm ² Maximum running current: 100 mA
	For the main zone: ▪ [2.9] Control ▪ [2.A] Ext thermostat type
Heat pump convector	There are different controllers and setups possible for the heat pump convectors. Depending on the setup, you also need to implement a relay (field supply, see addendum book for optional equipment). For more information, see: ▪ Installation manual of the heat pump convectors ▪ Installation manual of the heat pump convector options ▪ Addendum book for optional equipment
	Wires: 0.75 mm ² Maximum running current: 100 mA
	For the main zone: ▪ [2.9] Control ▪ [2.A] Ext thermostat type
	See: ▪ Installation manual of the remote outdoor sensor ▪ Addendum book for optional equipment
	Wires: 2×0.75 mm ² [9.B.1]=1 (External sensor = Outdoor) [9.B.2] Ext. amb. sensor offset [9.B.3] Averaging time
Remote indoor sensor	See: ▪ Installation manual of the remote indoor sensor ▪ Addendum book for optional equipment
	Wires: 2×0.75 mm ²
	[9.B.1]=2 (External sensor = Room) [1.7] Room sensor offset
	See: ▪ Installation and operation manual of the Human Comfort Interface ▪ Addendum book for optional equipment
Human Comfort Interface	Wires: 2×(0.75~1.25 mm ²) Maximum length: 500 m
	[2.9] Control
	[1.6] Room sensor offset

Item	Description
LAN adapter	See: ▪ Installation manual of the LAN adapter ▪ Addendum book for optional equipment
	Wires: 2×(0.75~1.25 mm ²). Must be sheathed. Maximum length: 200 m
	See installation manual of the LAN adapter
	—
WLAN cartridge	See: ▪ Installation manual of the WLAN cartridge ▪ Installer reference guide
	—
	[D] Wireless gateway
WLAN module	See: ▪ Installation manual of the WLAN module ▪ Addendum book for optional equipment ▪ Installer reference guide
	Use the cable delivered with the WLAN module.
	[D] Wireless gateway
	See: ▪ Installation manual of the bizone kit ▪ Addendum book for optional equipment
Bizone kit (only for space cooling with underfloor heating)	Use the cable delivered with the bizone kit.
	[9.P] Bizone kit



for room thermostat (wired or wireless):

In case of...	See...
Wireless room thermostat	▪ Installation manual of the wireless room thermostat ▪ Addendum book for optional equipment
Wired room thermostat without multi-zoning base unit	▪ Installation manual of the wired room thermostat ▪ Addendum book for optional equipment

6.3.1 To connect the main power supply



NOTICE

The pump is equipped with an anti-blockage safety routine. This means that the pump operates for a short period of time every 24 hours during long periods of inactivity to ensure it does not get stuck. To enable this function, the unit must be connected to the power supply all year round.

1 Open the following (see "4.2.1 To open the indoor unit" ▶ 11):

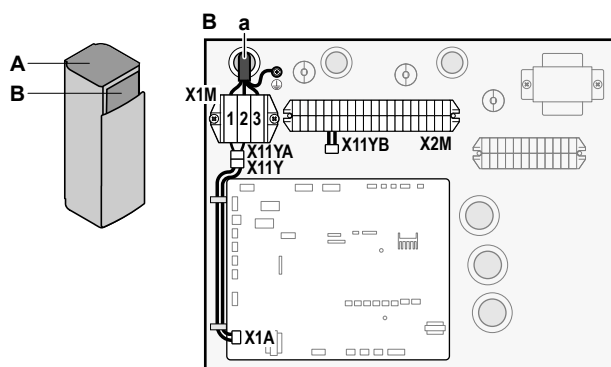
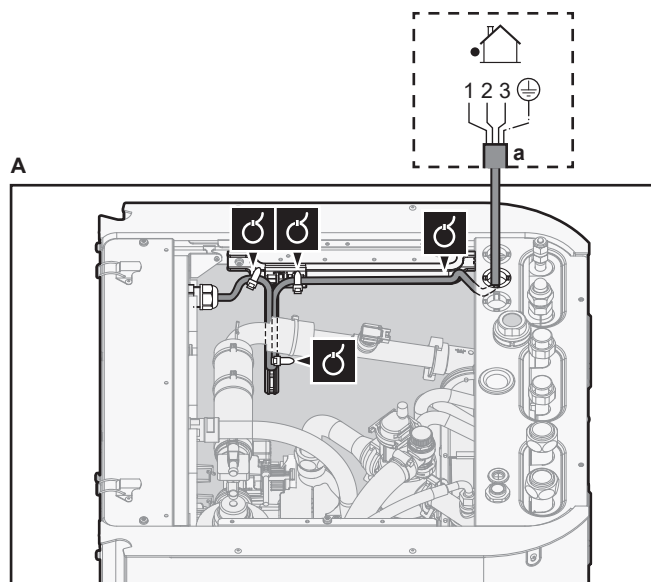
1 Top panel	
2 User interface panel	
3 Upper switch box cover	

2 Connect the main power supply.

6 Electrical installation

In case of normal kWh rate power supply

	Interconnection cable (= main power supply)	Wires: - Only use harmonised wire providing double insulation and suitable for applicable voltage. 4-core cable (3+GND). - Minimum 1.5 mm² based on the current.
	—	

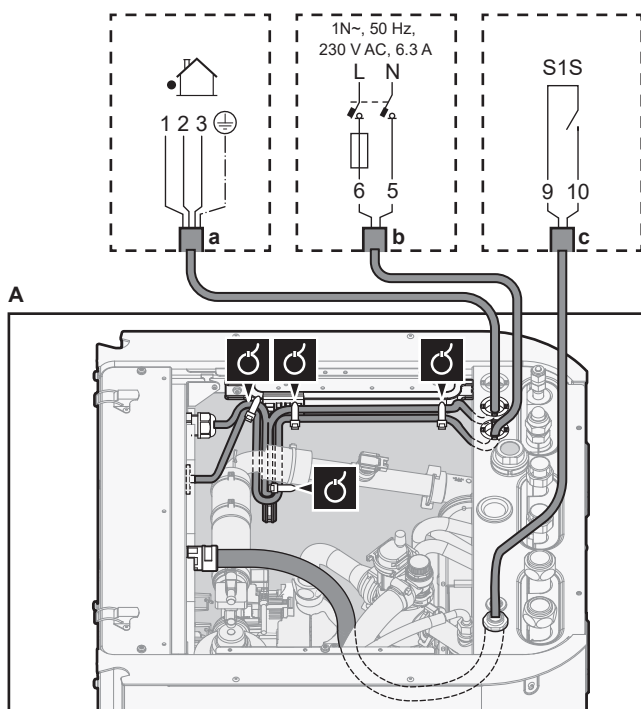


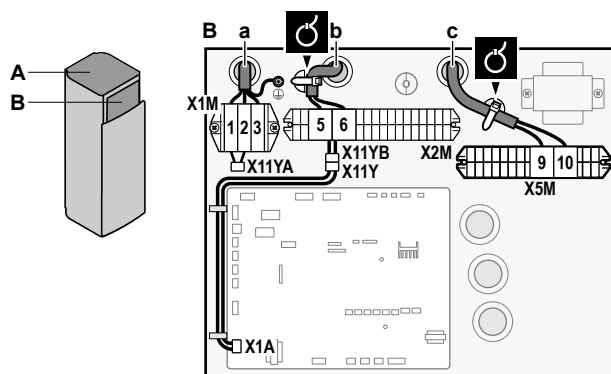
a Interconnection cable (=main power supply)

In case of preferential kWh rate power supply

	Interconnection cable (= main power supply)	Wires: - Only use harmonised wire providing double insulation and suitable for applicable voltage. 4-core cable (3+GND). - Minimum 1.5 mm² based on the current.
	Normal kWh rate power supply	Wires: - MUST comply with national wiring regulation. - Only use harmonised wire providing double insulation and suitable for applicable voltage. 3-core cable (2+GND). - Minimum 1.5 mm² based on the current. Maximum running current: 6.3 A
	Preferential kWh rate power supply contact	Wires: - MUST comply with national wiring regulation. - Only use harmonised wire providing double insulation and suitable for applicable voltage. 2-core cable. - Minimum 0.75 mm² based on the current. Maximum length: 50 m. Preferential kWh rate power supply contact: 16 V DC detection (voltage supplied by PCB). The voltage-free contact shall ensure the minimum applicable load of 15 V DC, 10 mA.
	[9.8] Benefit kWh power supply	

Connect X11Y to X11YB.





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

3 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.

6.3.2 To connect the backup heater power supply



Specification of wiring components, see table below.



[9.3] Backup heater

Power Supply of the product			
Component	Backup heater power supply model		
	4V3	4T1	9WN
Voltage	220-240 V	220-240 V	390-410 V
Power	4.5 kW	4.5 kW	9 kW
Rated current	19.6 A	11.3 A	13.0 A
Phase	1N~	3~	3N~
Frequency	50 Hz	50 Hz	50 Hz

Wiring / circuit breaker (field supplied)			
Component	Backup heater power supply		
	4V3	4T1	9WN
Power supply cable	Must comply with national wiring regulation.		
	3-core cable	4-core cable	5-core cable
	2+GND	3+GND	4+GND
Wire size based on the rated current, but not less than 2.5 mm ² .			
Recommended circuit breaker	4 pole 20 A		
Earth leakage circuit breaker / residual current device	A Type B residual current breaker, compliant with the national wiring regulation must be installed in the supply line		



WARNING

The backup heater MUST have a dedicated power supply and MUST be protected by the safety devices required by the national wiring regulation.



CAUTION

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

The backup heater capacity can vary, depending on the indoor unit model. 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}
*4V	4.5 kW	1N~ 230 V ^(a)	19.6 A ^{(b)(c)}	0.22 Ω
	4.5 kW	3~ 230 V ^(d)	11.3 A	—
*9W	3 kW	3N~ 400 V	4 A	—
	6 kW	3N~ 400 V	9 A	—
	9 kW	3N~ 400 V	13 A	—

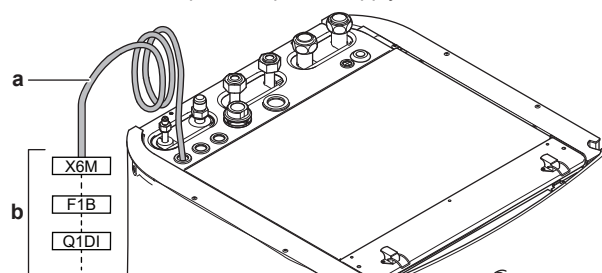
^(a) 4V3

^(b) Electrical equipment complying with EN/IEC 61000-3-12 (European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤75 A per phase).

^(c) This equipment complies with EN/IEC 61000-3-11 (European/International Technical Standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current ≤75 A) provided that the system impedance Z_{sys} is less than or equal to Z_{max} at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a system impedance Z_{sys} less than or equal to Z_{max}.

^(d) 4T1

Connect the backup heater power supply as follows:



- a Factory-mounted cable connected to the contactor of the backup heater, inside the switch box (K5M)
- b Field wiring (see table below)

6 Electrical installation

Model (power supply)	Connections to backup heater power supply
*4V (4V3: 1N~ 230 V)	1N~ 50 Hz 230 V AC
*4V (4T1: 3~ 230 V)	3~, 50 Hz 230 V AC
*9W (3N~ 400 V)	3N~ 50 Hz 400 V AC

F1B Overcurrent fuse (field supply). Recommended fuse: 4-pole; 20 A; curve 400 V; tripping class C.

K5M Safety contactor (in the lower switch box)
Q1DI Earth leakage circuit breaker (field supply)
SWB Switch box
X6M Terminal (field supply)



NOTICE

If the supplied cable is too short, replace it with a correctly sized field-supplied cable or extend it using suitable approved connectors. Ensure compliance with all applicable national electrical regulations.



NOTICE

Do NOT cut or remove the backup heater power supply cable.

6.3.3 To connect the shut-off valve



INFORMATION

Shut-off valve usage example. In case of one LWT zone, and a combination of underfloor heating and heat pump convectors, install a shut-off valve before the underfloor heating to prevent condensation on the floor during cooling operation.



Wires:

- MUST comply with national wiring regulation.
- Only use harmonised wire providing double insulation and suitable for applicable voltage.
- 2-core cable.
- Minimum 1.0 mm² based on the current.

Maximum running current: 100 mA

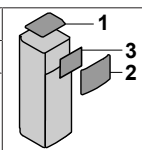
230 V AC supplied by PCB



[2.D] Shut off valve

- Open the following (see "4.2.1 To open the indoor unit" [p 11]):

1	Top panel
2	User interface panel
3	Upper switch box cover

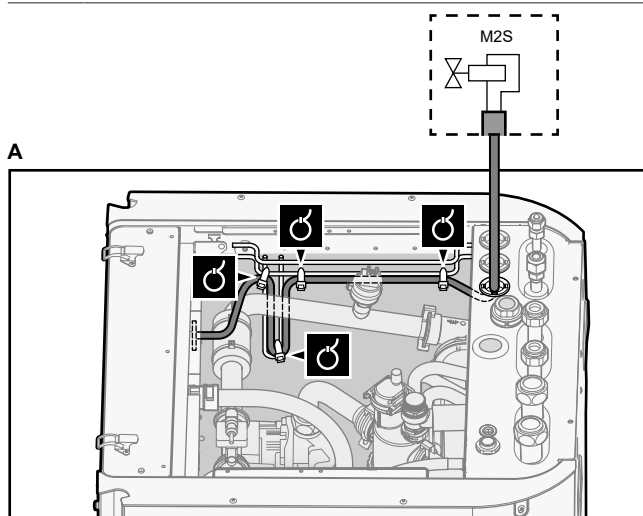


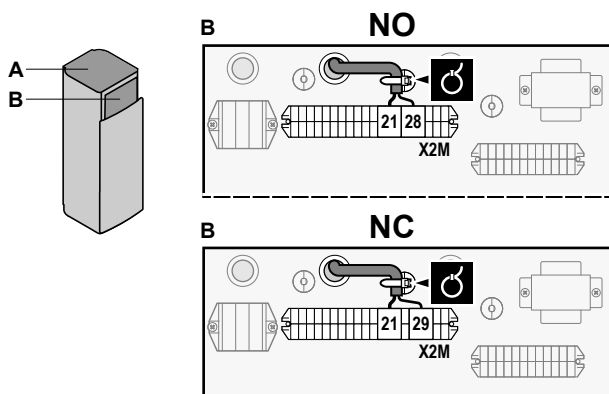
- Connect the valve control cable to the appropriate terminals as shown in the illustration below.



NOTICE

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





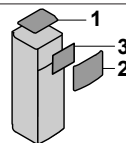
3 Fix the cable with cable ties to the cable tie mountings.

6.3.4 To connect the domestic hot water pump

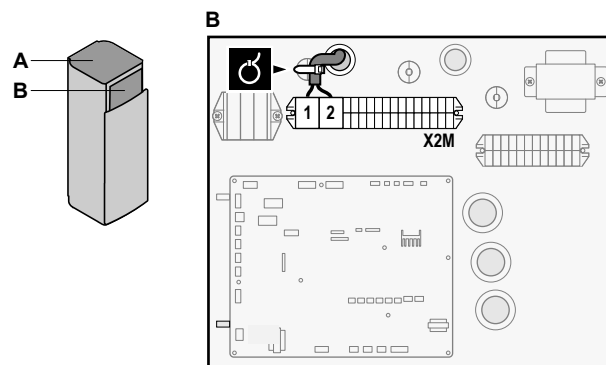
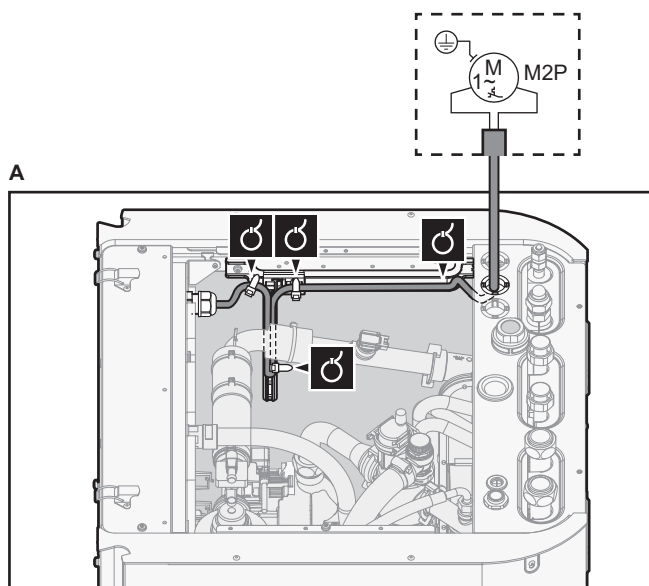
	Wires: - MUST comply with national wiring regulation. - Only use harmonised wire providing double insulation and suitable for applicable voltage. 3-core cable. - Minimum 1.0 mm² based on the current.
	DHW pump output. Maximum load: 2 A (inrush), 230 V AC, 1 A (continuous)
	[9.2.2] DHW pump [9.2.3] DHW pump schedule

1 Open the following (see "4.2.1 To open the indoor unit" ▶ 11):

1	Top panel
2	User interface panel
3	Upper switch box cover



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



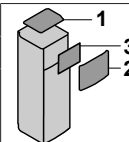
3 Fix the cable with cable ties to the cable tie mountings.

6.3.5 To connect the alarm output

	Wires: - Only use harmonised wire providing double insulation and suitable for applicable voltage. - Wires: (2+1)×0.75 mm²
	Maximum load: 0.3 A, 250 V AC
	[9.D] Alarm output

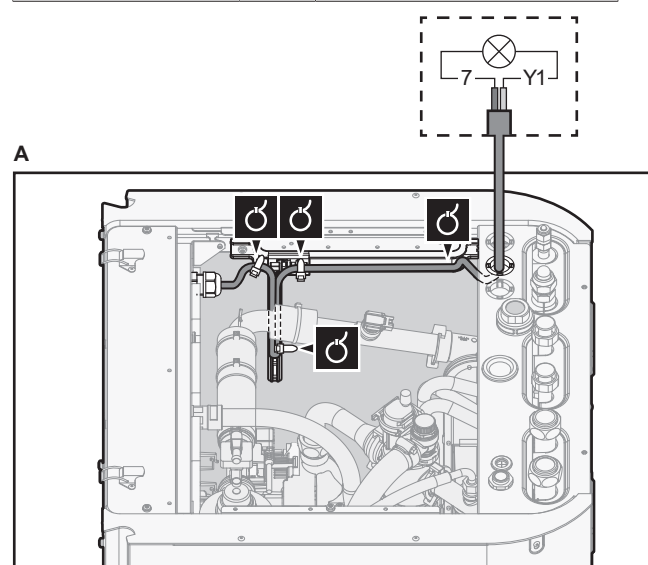
1 Open the following (see "4.2.1 To open the indoor unit" ▶ 11):

1	Top panel
2	User interface panel
3	Upper switch box cover

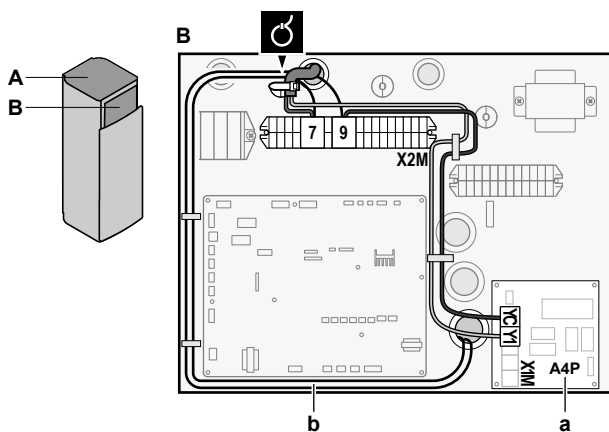


2 Connect the alarm output cable to the appropriate terminals as shown in the illustration below.

	1+2 Wires connected to the alarm output
	3 Wire between X2M and A4P
	A4P Installation of EKRP1HBAA is required.



6 Electrical installation



- a Installation of EKR1HBAA is required.
- b Prewiring between X2M/7+9 and Q1L (= thermal protector backup heater). Do NOT change.

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

6.3.6 To connect the space cooling/heating ON/OFF output



INFORMATION

DX indoor units have two operation modes: heating and cooling.

In case of floorstanding indoor units:

- Cooling is only allowed with underfloor heating + bizon kit.
- In cooling mode, you cannot set the underfloor heating loop to a setpoint lower than 18°C.
- Cooling with fan coil unit or radiators is not allowed.



Wires:

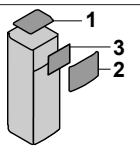
- Only use harmonised wire providing double insulation and suitable for applicable voltage.
- Wires: (2+1)×0.75 mm²

Maximum load: 0.3 A, 250 V AC

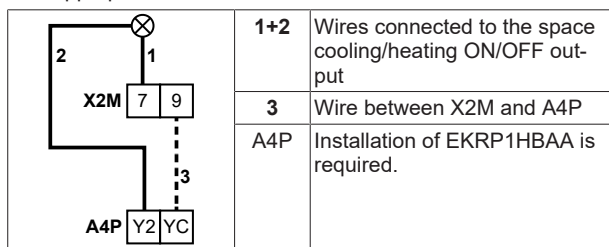


1 Open the following (see "4.2.1 To open the indoor unit" ▶ 11):

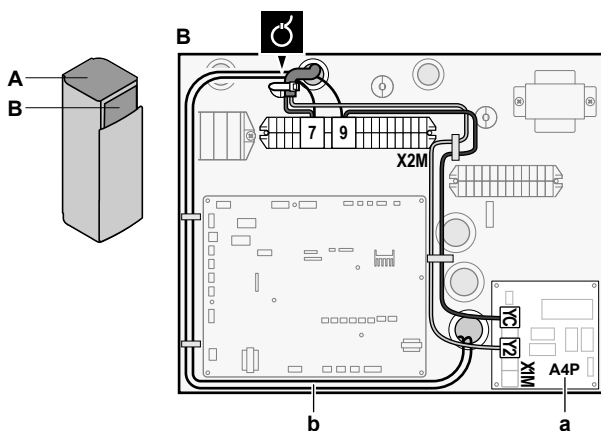
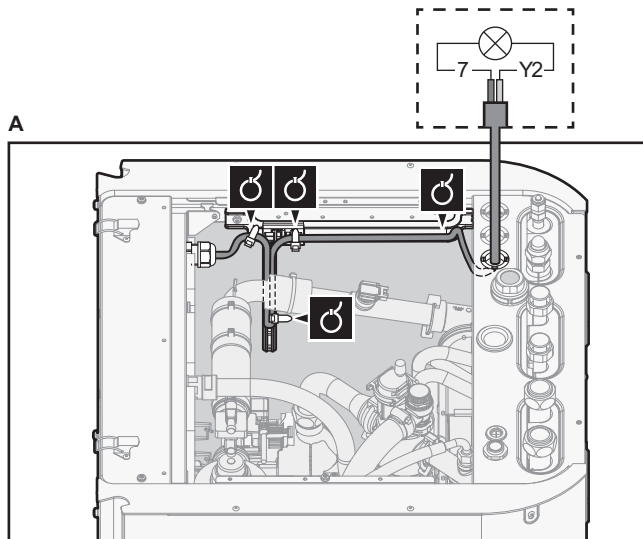
1	Top panel
2	User interface panel
3	Upper switch box cover



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



- 1+2 Wires connected to the space cooling/heating ON/OFF output
- 3 Wire between X2M and A4P
- A4P Installation of EKR1HBAA is required.



- a Installation of EKR1HBAA is required.
- b Prewiring between X2M/7+9 and Q1L (= thermal protector backup heater). Do NOT change.

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

6.3.7 To connect the safety thermostat

Note: Safety thermostat = normally closed contact.



Wires:

- MUST comply with national wiring regulation.
- Only use harmonised wire providing double insulation and suitable for applicable voltage.
- 2-core cable.
- Minimum 0.75 mm² based on the current.

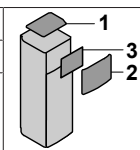
Maximum length: 50 m

Safety thermostat contact: 16 V DC detection (voltage supplied by PCB). The voltage-free contact shall ensure the minimum applicable load of 15 V DC, 10 mA.



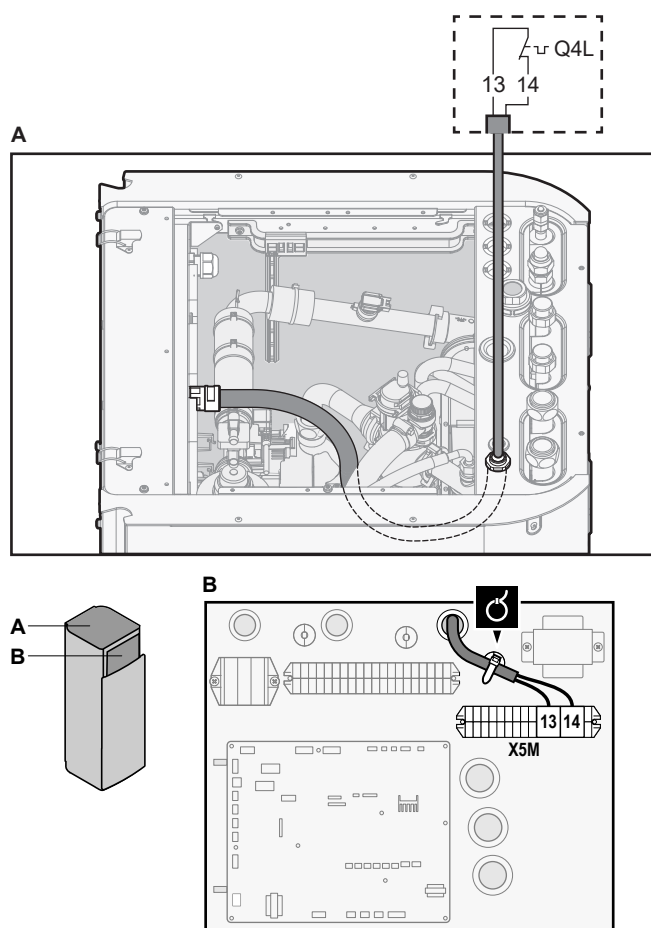
1 Open the following (see "4.2.1 To open the indoor unit" ▶ 11):

1	Top panel
2	User interface panel
3	Upper switch box cover



2 Connect the safety thermostat (normally closed) cable to the appropriate terminals as shown in the illustration below.

Note: The jumper wire (factory-mounted) must be removed from the respective terminals.



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



NOTICE

Make sure to select and install the safety thermostat according to the national wiring regulation.

In any case, to prevent unnecessary tripping of the safety thermostat, we recommend the following:

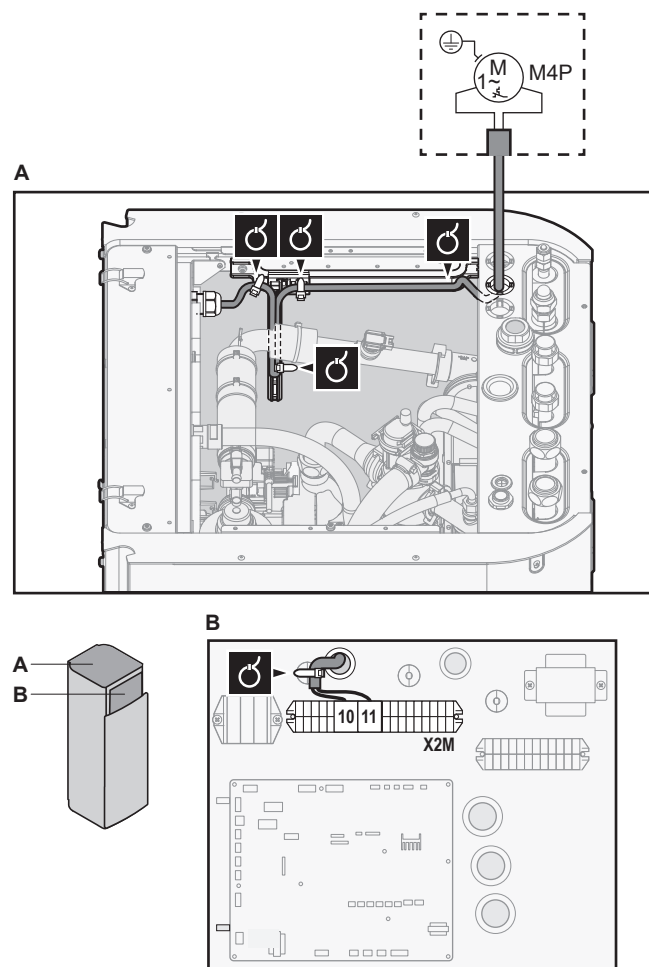
- The safety thermostat is automatically resettable.
- The safety thermostat has a maximum temperature variation rate of 2°C/min.
- There is a minimum distance of 2 m between the safety thermostat and the 3-way valve.



NOTICE

Error. If you remove the jumper (open circuit) but do NOT connect the safety thermostat, stop error 8H-03 will occur.

6.3.8 To connect the secondary pump



Wires:

- MUST comply with national wiring regulation.
- Only use harmonised wire providing double insulation and suitable for applicable voltage.
- 3-core cable.
- Minimum 1.0 mm² based on the current.

Secondary pump output. Maximum load: 0.3 A, 230 V AC

K3R Secondary pump



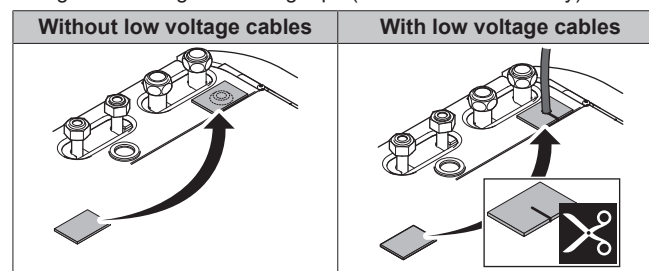
[9.S] Secondary pump

or field setting [2-07] Secondary pump present = 1

For more information, see the application guidelines in the installer reference guide.

6.4 After connecting the electrical wiring to the indoor unit

To prevent water ingress to the switch box, seal the low voltage wiring intake using the sealing tape (delivered as accessory).



7 Configuration



INFORMATION

DX indoor units have two operation modes: heating and cooling.

In case of floorstanding indoor units:

- Cooling is only allowed with underfloor heating + bizonal kit.
- In cooling mode, you cannot set the underfloor heating loop to a setpoint lower than 18°C.
- Cooling with fan coil unit or radiators is not allowed.

7.1 Overview: Configuration

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



NOTICE

This chapter explains only the basic configuration. 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 unit), the configuration wizard starts to help you configure the system.
- **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 ["7.1.1 To access the most used commands" ▶ 24](#).
- **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 home menu screen or the menu structure . To enable breadcrumbs, press the ? button in the home screen.	# For example: [2.9]
Accessing settings via the code in the overview field settings .	Code For example: [C-07]

See also:

- ["To access the installer settings" ▶ 24](#)
- ["7.5 Menu structure: Overview installer settings" ▶ 31](#)

7.1.1 To access the most used commands

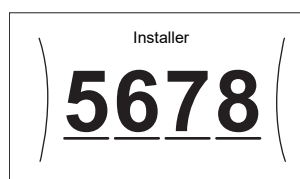
To change the user permission level

You can change the user permission level as follows:

1	Go to [B]: User profile.	
2	Enter the applicable pin code for the user permission level.	—
	▪ Browse through the list of digits and change the selected digit.	○...○
	▪ Confirm the digit to proceed to the next digit.	○...○ or ○...○
	▪ OR, move the cursor from left to right.	○...○
	▪ Confirm the pin code and proceed.	○...○

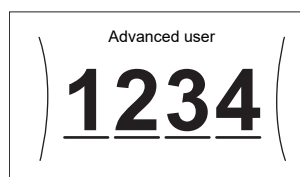
Installer pin code

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



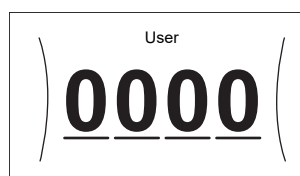
Advanced user pin code

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.

Most settings can be configured via 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" ▶ 24 .	—
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.																					
	<table><tr><td rowspan="5">)</td><td>00</td><td>05</td><td>0A</td></tr><tr><td>0</td><td>01</td><td>06</td><td>0B</td></tr><tr><td>1</td><td>02</td><td>07</td><td>0C</td></tr><tr><td>2</td><td>03</td><td>08</td><td>0D</td></tr><tr><td>3</td><td>04</td><td>09</td><td>0E</td></tr></table>	)	00	05	0A	0	01	06	0B	1	02	07	0C	2	03	08	0D	3	04	09	0E	
)	00		05	0A																		
	0		01	06	0B																	
	1		02	07	0C																	
	2		03	08	0D																	
	3	04	09	0E																		
4	Turn the left dial to select the second part of the setting																					
	<table><tr><td rowspan="5">)</td><td>00</td><td>05</td><td>0A</td></tr><tr><td>01</td><td>15</td><td>06</td><td>0B</td></tr><tr><td>02</td><td>07</td><td>0C</td></tr><tr><td>03</td><td>08</td><td>0D</td></tr><tr><td>04</td><td>09</td><td>0E</td></tr></table>	)	00	05	0A	01	15	06	0B	02	07	0C	03	08	0D	04	09	0E				
)	00		05	0A																		
	01		15	06	0B																	
	02		07	0C																		
	03		08	0D																		
	04	09	0E																			
5	Turn the right dial to modify the value from 15 to 20.																					
	<table><tr><td rowspan="5">)</td><td>00</td><td>05</td><td>0A</td></tr><tr><td>01</td><td>20</td><td>06</td><td>0B</td></tr><tr><td>02</td><td>07</td><td>0C</td></tr><tr><td>03</td><td>08</td><td>0D</td></tr><tr><td>04</td><td>09</td><td>0E</td></tr></table>	)	00	05	0A	01	20	06	0B	02	07	0C	03	08	0D	04	09	0E				
)	00		05	0A																		
	01		20	06	0B																	
	02		07	0C																		
	03		08	0D																		
	04	09	0E																			
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.

7.2 Configuration wizard

After first power ON of the system, the user interface starts a configuration wizard. Use this wizard to set the most important initial settings for the unit to run properly. If required, you can afterwards configure more settings. You can change all these settings via the menu structure.

Protective functions

The unit is equipped with the following protective functions:

- Room antifrost [2-06]
- Tank disinfection [2-01]

The unit automatically runs the protective functions when necessary. During installation or service, this behaviour is undesired. Therefore, the protective functions can be disabled. For more information, see the Installer reference guide, chapter Configuration.

7.2.1 Configuration wizard: Language

#	Code	Description
[7.1]	N/A	Language

7.2.2 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. These settings can be changed during initial configuration or via the menu structure [7.2]: User settings > Time/date.

7.2.3 Configuration wizard: System

Backup heater type

The backup heater is adapted to be connected to most common European electricity grids. The type of backup heater can be viewed but not changed.

#	Code	Description
[9.3.1]	[E-03]	3: 4.5V 4: 9W

Domestic hot water

The tank type is displayed, but cannot be adjusted.

Emergency

When the heat pump fails to operate, the backup heater can serve as an emergency heater. It then takes over the heat load either automatically or by manual interaction.

- When Emergency is set to Automatic and a heat pump failure occurs, the backup heater automatically takes over the domestic hot water production and space heating.
- When Emergency is set to Manual and a heat pump failure occurs, the domestic hot water heating and space heating stops. To manually recover it via the user interface, go to the Malfunctioning main menu screen and confirm whether the backup heater can take over the heat load or not.
- Alternatively, when Emergency is set to:
 - auto SH reduced/DHW on, space heating is reduced but domestic hot water is still available.
 - auto SH reduced/DHW off, space heating is reduced and domestic hot water is NOT available.
 - auto SH normal/DHW off, space heating operates as normally but domestic hot water is NOT available.

Similarly as in Manual mode, the unit can take the full load with the backup heater if the user activates this via the Malfunctioning main menu screen.

When the heat pump fails to operate, the backup heater can serve as an emergency heater. It then takes over the heat load either automatically or by manual interaction.

- When Emergency is set to Automatic and a heat pump failure occurs, the backup heater automatically takes over the domestic hot water production and space heating.
- When Emergency is set to Manual and a heat pump failure occurs, the domestic hot water heating and space heating stops. To manually recover it via the user interface, go to the Malfunctioning main menu screen and confirm whether the backup heater can take over the heat load or not.
- Alternatively, when Emergency is set to:
 - auto SH reduced/DHW on, space heating is reduced but domestic hot water is still available.
 - auto SH reduced/DHW off, space heating is reduced and domestic hot water is NOT available.
 - auto SH normal/DHW off, space heating operates as normally but domestic hot water is NOT available.

Similarly as in Manual mode, the unit can take the full load with the backup heater if the user activates this via the Malfunctioning main menu screen.

To keep energy consumption low, we recommend to set Emergency to auto SH reduced/DHW off if the house is unattended for longer periods.

#	Code	Description
[9.5.1]	[4-06]	0: Manual 1: Automatic 2: auto SH reduced/DHW on 3: auto SH reduced/DHW off 4: auto SH normal/DHW off

**INFORMATION**

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

7 Configuration

INFORMATION

If a heat pump failure occurs and Emergency is not set to Automatic (setting 1), the following functions will remain active even if the user does NOT confirm emergency operation:

- Room frost protection
- Underfloor heating screed dryout

However, the disinfection function will be activated ONLY if the user confirms emergency operation via the user interface.

Number of zones

Although a mixing kit is required for space cooling application, only a single zone is possible.

NOTICE

A differential pressure bypass valve can be integrated in the system. Keep in mind that this valve might not be shown on the illustrations.

7.2.4 Configuration wizard: Backup heater

The backup heater is adapted to be connected to most common European electricity grids. 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.

Backup heater type

The backup heater is adapted to be connected to most common European electricity grids. The type of backup heater can be viewed but not changed.

#	Code	Description
[9.3.1]	[E-03]	3: 4.5V 4: 9W

Voltage

- For 4.5V model, this can be set to:
 - 230V, 1ph
 - 230V, 3ph
- For a 9W model, this is fixed to 400V, 3ph.

#	Code	Description
[9.3.2]	[5-0D]	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]	0: Relay 1 1: Relay 1 / Relay 1+2 2: Relay 1 / Relay 2 3: Relay 1 / Relay 2 Emergency Relay 1+2

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, e.g. when [4-0A]=1, 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 second step of the backup heater at nominal voltage is equal to [6-03]+[6-04].

INFORMATION

Only for systems with integrated domestic hot water tank: If the storage temperature setpoint 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]	The capacity of the first element (Relay 1) of the backup heater at nominal voltage.

Additional capacity step 2

#	Code	Description
[9.3.5]	[6-04]	The capacity of the second element (Relay 2) of the backup heater at nominal voltage.

7.2.5 Configuration wizard: Main zone

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

Emitter type

Heating up or cooling down the main zone can take longer. This depends on:

- The water volume of the system
- The heater emitter type of the main zone

The setting Emitter type can compensate for a slow or a quick heating/cooling system during the heat up/cool down cycle. In room thermostat control, Emitter type influences the maximum modulation of the desired leaving water temperature, and the possibility for usage of the automatic cooling/heating changeover based on the indoor ambient temperature.

It is important to set Emitter type correctly and in accordance with your system layout. The target delta T for the main zone depends on it.

#	Code	Description
[2.7]	[2-0C]	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:

NOTICE

Average emitter temperature = Leaving water temperature – (Delta T)/2

This means that for a same leaving water temperature setpoint, the average emitter temperature of radiators is lower than that of underfloor heating because of a bigger delta T.

Example radiators: $40 - 8/2 = 36^{\circ}\text{C}$

Example underfloor heating: $40 - 5/2 = 37.5^{\circ}\text{C}$

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

Define how the operation of the unit is controlled.

Control	In this control...
Leaving water	Unit operation is decided based on the leaving water temperature regardless the actual room temperature and/or heating or cooling demand of the room.
External room thermostat	Unit operation is decided by the external thermostat or equivalent (e.g. heat pump convector).
Room thermostat	Unit operation is decided based on the ambient temperature of the dedicated Human Comfort Interface (BRC1HHDA used as room thermostat).

#	Code	Description
[2.9]	[C-07]	0: Leaving water 1: External room thermostat 2: Room thermostat

Setpoint mode

Define the setpoint mode:

- Fixed: the desired leaving water temperature does not depend on the outdoor ambient temperature.
- In WD heating, fixed cooling mode, the desired leaving water temperature:
 - depends on the outdoor ambient temperature for heating
 - does NOT depend on the outdoor ambient temperature for cooling
- In Weather dependent mode, the desired leaving water temperature depends on the outdoor ambient temperature.

#	Code	Description
[2.4]	N/A	Setpoint mode: - Fixed - WD heating, fixed cooling - 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 can 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	0: No 1: Yes

7.2.6 Configuration wizard: Tank



INFORMATION

To make tank defrost possible, we recommend a minimum tank temperature of 35°C.

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: 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.

Settings for Reheat only mode

During Reheat only mode, the tank setpoint can be set on the user interface. The maximum allowed temperature is determined by the following setting:

#	Code	Description
[5.8]	[6-0E]	Maximum: 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. The maximum temperature is NOT applicable during disinfection function. See disinfection function.

To set the heat pump ON hysteresis:

#	Code	Description
[5.9]	[6-00]	Heat pump ON hysteresis 2°C~40°C

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: 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: 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.

7 Configuration

#	Code	Description
[5.4]	[6-0C]	Reheat setpoint: ▪ $30^{\circ}\text{C} \sim \min(50, [6-0E])^{\circ}\text{C}$

Hysteresis (reheat hysteresis)

Applicable when domestic hot water preparation is scheduled+reheat. When the tank temperature drops below the reheat temperature minus the reheat hysteresis temperature, the tank heats up to the reheat temperature.

#	Code	Description
[5.A]	[6-08]	Reheat hysteresis ▪ $2^{\circ}\text{C} \sim 20^{\circ}\text{C}$

7.3 Weather-dependent curve

7.3.1 What is a weather-dependent curve?

Weather-dependent operation

The unit operates 'weather-dependent' if the desired leaving water or tank temperature is determined automatically by the outdoor temperature. It therefore is connected to a temperature sensor on the north wall of the building. If the outdoor temperature drops or rises, the unit compensates instantly. Thus, the unit does not have to wait for feedback by the thermostat to increase or decrease the temperature of the leaving water or tank. Because it reacts more quickly, it prevents high rises and drops of the indoor temperature and water temperature at tap points.

Advantage

Weather-dependent operation reduces energy consumption.

Weather-dependent curve

To be able to compensate for differences in temperature, the unit relies on its weather-dependent curve. This curve defines how much the temperature of the tank or leaving water must be at different outdoor temperatures. Because the slope of the curve depends on local circumstances such as climate and the insulation of the building, the curve can be adjusted by an installer or user.

Types of weather-dependent curve

There are two types of weather-dependent curves:

- 2-points curve
- Slope-offset curve

Which type of curve you use to make adjustments, depends on your personal preference. See ["7.3.4 Using weather-dependent curves"](#) [p 29].

Availability

The weather-dependent curve is available for:

- Main zone - Heating
- Main zone - Cooling
- Tank (only available to installers)



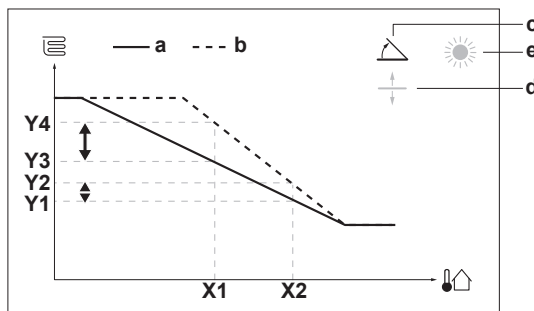
INFORMATION

To operate weather-dependent, correctly configure the setpoint of the main zone or tank. See ["7.3.4 Using weather-dependent curves"](#) [p 29].

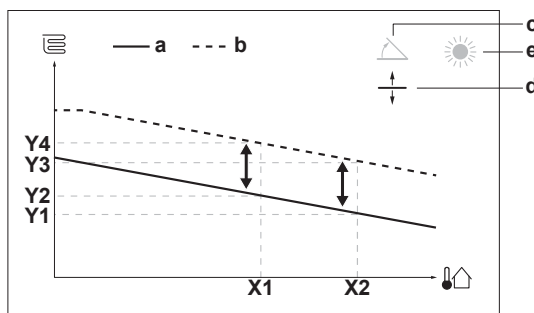
a bit too cold at different ambient temperatures, shift the offset up to equally increase the leaving water temperature for all ambient temperatures.

Examples

Weather-dependent curve when slope is selected:



Weather-dependent curve when offset is selected:



Item	Description
a	WD curve before changes.
b	WD curve after changes (as example): ▪ When slope is changed, the new preferred temperature at X1 is unequally higher than the preferred temperature at X2. ▪ When offset is changed, the new preferred temperature at X1 is equally higher as the preferred temperature at X2.
c	Slope
d	Offset
e	Selected weather-dependent zone: ▪ ☀: Main zone heating ▪ ❄: Main zone cooling ▪ 🚿: Domestic hot water
X1, X2	Examples of outdoor ambient temperature
Y1, Y2, Y3, Y4	Examples of desired tank temperature or leaving water temperature. The icon corresponds to the heat emitter for that zone: ▪ 🏠: Underfloor heating ▪ 🌀: Fan coil unit ▪ 📺: Radiator ▪ 🚿: Domestic hot water tank

7.3.2 Slope-offset curve

Slope and offset

Define the weather-dependent curve by its slope and offset:

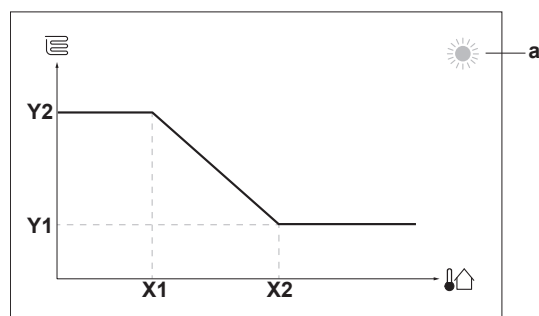
- Change the **slope** to differently increase or decrease the temperature of the leaving water for different ambient temperatures. For example, if leaving water temperature is in general fine but at low ambient temperatures too cold, raise the slope so that leaving water temperature is heated increasingly more at decreasingly lower ambient temperatures.
- Change the **offset** to equally increase or decrease the temperature of the leaving water for different ambient temperatures. For example, if leaving water temperature is always

Possible actions on this screen	
⚙️	Select slope or offset.
⬅️ ➡️	Increase or decrease the slope/offset.
⬅️ ➡️ 🏠	When slope is selected: set slope and go to offset. When offset is selected: set offset.
🏠	Confirm changes and return to the submenu.

7.3.3 2-points curve

Define the weather-dependent curve with these two setpoints:

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

Example

Item	Description
a	Selected weather-dependent zone: ☀: Main zone heating ❄: Main zone cooling 🏠: Domestic hot water
X1, X2	Examples of outdoor ambient temperature
Y1, Y2	Examples of desired tank temperature or leaving water temperature. The icon corresponds to the heat emitter for that zone: 🏠: Underfloor heating 📺: Fan coil unit 🔥: Radiator 🛀: Domestic hot water tank

Possible actions on this screen	
🔍⋯⋯○	Go through the temperatures.
○⋯⋯🔍	Change the temperature.
○⋯⋯➡	Go to the next temperature.
👉⋯⋯○	Confirm changes and proceed.

7.3.4 Using weather-dependent curves

Configure weather-dependent curves as following:

To define the setpoint mode

To use the weather-dependent curve, you need to define the correct setpoint mode:

Go to setpoint mode ...	Set the setpoint mode to ...
Main zone – Heating	
[2.4] Main zone > Setpoint mode	WD heating, fixed cooling OR Weather dependent
Main zone – Cooling	
[2.4] Main zone > Setpoint mode	Weather dependent
Tank	
[5.B] Tank > Setpoint mode	Restriction: Only available to installers. Weather dependent

To change the type of weather-dependent curve

To change the type for the main zone and for the tank, go to [2.E] Main zone > WD curve type.

Viewing which type is selected is also possible via:

- [5.E] Tank > WD curve type

Restriction: Only available to installers.

To change the weather-dependent curve

Zone	Go to ...
Main zone – Heating	[2.5] Main zone > Heating WD curve
Main zone – Cooling	[2.6] Main zone > Cooling WD curve
Tank	Restriction: Only available to installers. [5.C] Tank > WD curve

**INFORMATION****Maximum and minimum setpoints**

You cannot configure the curve with temperatures that are higher or lower than the set maximum and minimum setpoints for the zone or for the tank. When the maximum or minimum setpoint is reached, the curve flattens out.

To fine-tune the weather-dependent curve: slope-offset curve

The following table describes how to fine-tune the weather-dependent curve of the zone or tank:

You feel ...		Fine-tune with slope and offset:	
At regular outdoor temperatures ...	At cold outdoor temperatures ...	Slope	Offset
OK	Cold	↑	—
OK	Hot	↓	—
Cold	OK	↓	↑
Cold	Cold	—	↑
Cold	Hot	↓	↑
Hot	OK	↑	↓
Hot	Cold	↑	↓
Hot	Hot	—	↓

See "7.3.2 Slope-offset curve" [p 28].

To fine-tune the weather-dependent curve: 2-points curve

The following table describes how to fine-tune the weather-dependent curve of the zone or tank:

You feel ...		Fine-tune with set-points:			
At regular outdoor temperatures ...	At cold outdoor temperatures ...	Y2 ^(a)	Y1 ^(a)	X1 ^(a)	X2 ^(a)
OK	Cold	↑	—	↑	—
OK	Hot	↓	—	↓	—
Cold	OK	—	↑	—	↑
Cold	Cold	↑	↑	↑	↑
Cold	Hot	↓	↑	↓	↑
Hot	OK	—	↓	—	↓
Hot	Cold	↑	↓	↑	↓
Hot	Hot	↓	↓	↓	↓

^(a) See "7.3.3 2-points curve" [p 28].

7.4 Settings menu

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

7.4.1 Main zone**Ext thermostat type**

Only applicable in external room thermostat control.

7 Configuration



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 [C.2] Space heating/cooling=On.

#	Code	Description
[2.A]	[C-05]	External room thermostat type for the main zone: ▪ 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.

7.4.2 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.

7.5 Menu structure: Overview installer settings

[9] Installer settings	[9.2] Domestic hot water
Configuration wizard	Domestic hot water
Domestic hot water	DHW pump
Backup heater	DHW pump schedule
Emergency	Solar
Balancing	
Water pipe freeze prevention	
Power consumption control	
Energy metering	
Sensors	
Alarm output	
Auto restart	
Power saving function	
Disable protections	
Overview field settings	
Export MMI settings	
Bizone kit	

(*) Only applicable in Swedish language.

(**) To activate space cooling once the bizone kit is connected, first set [E-0B] to 2, [E-0C] to 1, [3-0D] to 1, and then change [E-02] to 0.



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.

8 Commissioning

8 Commissioning



NOTICE

General commissioning checklist. Next to the commissioning instructions in this chapter, a general commissioning checklist is also available on the Daikin Business Portal (authentication required).

The general commissioning checklist is complementary to the instructions in this chapter and can be used as a guideline and reporting template during commissioning and hand-over to the user.



NOTICE

ALWAYS operate the unit with thermistors and/or pressure sensors/switches. If NOT, burning of the compressor might be the result.

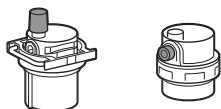


NOTICE

The pump is equipped with an anti-blockage safety routine. This means that the pump operates for a short period of time every 24 hours during long periods of inactivity to ensure it does not get stuck. To enable this function, the unit must be connected to the power supply all year round.



NOTICE



Make sure both air purge valves within the indoor unit (one on the magnetic filter and one on the backup heater) are open.

All automatic air purge valves MUST remain open after commissioning.



NOTICE

Pump. To prevent blocking of the pump rotor, commission the unit as quickly as possible after filling the water circuit.



INFORMATION

Protective functions – "Installer-on-site mode". The software is equipped with protective functions, such as Legionella disinfection function. The unit automatically runs this function according to its scheduled time.

During installation or service this behaviour is undesired. Therefore, the protective functions can be disabled:

- **At first power-on:** The protective functions are disabled by default. After 12 hours they will be automatically enabled.
- **Afterwards:** An installer can manually disable the protective functions by setting [9.G]: Disable protections = Yes. After his work is done, he can enable the protective functions by stating [9.G]: Disable protections = No.

Also see "Protective functions" [p 25].

8.1 Checklist before commissioning

- 1 After the installation of the unit, check the items listed below.
- 2 Close the unit.
- 3 Power up the unit.

☐	You read the complete installation instructions, as described in the installer reference guide .
☐	The indoor unit is properly mounted.
☐	The outdoor unit is properly mounted.

☐	The following field wiring has been carried out according to this document and the applicable legislation: ▪ 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)
☐	The system is properly earthed and the earth terminals are tightened.
☐	The fuses, circuit breakers, or locally installed protection devices are of the size and type specified in this document, and have NOT been bypassed.
☐	The power supply voltage matches the voltage on the identification label of the unit.
☐	There are NO loose connections or damaged electrical components in the switch box.
☐	There are NO damaged components or squeezed pipes on the inside of the indoor and outdoor units.
☐	Backup heater circuit breaker F1B (field supply) is turned ON.
☐	There are NO refrigerant leaks .
☐	The refrigerant pipes (gas and liquid) are thermally insulated.
☐	The correct pipe size is installed and the pipes are properly insulated.
☐	There is NO water leak inside the indoor unit.
☐	The shut-off valves are properly installed and fully open.
☐	The stop valves (gas and liquid) on the outdoor unit are fully open.
☐	The air purge valve is open (at least 2 turns).
☐	The following field piping on the cold water inlet of the DHW tank has been carried out according to this document and the applicable legislation: ▪ Non-return valve ▪ Pressure reducing valve ▪ Pressure relief valve (and it purges clean water when opened) ▪ Tundish ▪ Expansion vessel
☐	The pressure relief valve (space heating circuit) purges water when opened. Clean water MUST come out.
☐	The minimum water volume is guaranteed in all conditions. See "To check the water volume and flow rate" in "5.3 Preparing water piping" [p 14].
☐	The domestic hot water tank is filled completely.

8.2 Checklist during commissioning

☐	To perform an air purge .
☐	To check that the minimum flow rate ⁽¹⁾ during backup heater/defrost operation is guaranteed in all conditions. See "To check the water volume and flow rate" in "5.3 Preparing water piping" [p 14].
☐	To perform an actuator test run .
☐	To perform a test run .

⁽¹⁾ If the air purge is done correctly, this flow rate should be reached.

8.2.1 To check the minimum flow rate

1	Check the hydraulic configuration to find out which space heating loops can be closed by mechanical, electronic, or other valves.	—
2	Close all space heating loops that can be closed.	—
3	Start the pump test run (see "8.2.3 To perform an actuator test run" [p 33]).	—
4	Read out the flow rate ^(a) and modify the bypass valve setting to reach the minimum required flow rate + 2 l/min.	—

^(a) During pump test run, the unit can operate below the minimum required flow rate.

Minimum required flow rate	
12 l/min	

8.2.2 To perform an air purge

Conditions: Make sure all operation is disabled. Go to [C]: Operation and turn off Space heating/cooling and Tank operation.

8.2.3 To perform an actuator test run

Purpose

Perform an actuator test run to confirm the operation of the different actuators. For example, when you select Pump, a test run of the pump will start.

Conditions: Make sure all operation is disabled. Go to [C]: Operation and turn off Space heating/cooling and Tank operation.

1	Set the user permission level to Installer. See "To change the user permission level" [p 24].	—
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 ready (±30 min).		
To stop the test run manually:		—
1	In the menu, go to Stop test run.	🔍
2	Select OK to confirm.	🔍

Possible actuator test runs

- Backup heater 1 test
- Backup heater 2 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.

- Shut off valve test
- Diverter valve test (3-way valve for switching between space heating and tank heating)
- C/H signal test
- DHW pump test

8.2.4 To perform an operation test run

Conditions: Make sure all operation is disabled. Go to [C]: Operation and turn off Space heating/cooling and Tank operation.

1	Set the user permission level to Installer. See "To change the user permission level" [p 24].	—
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 ready (±30 min).		
To stop the test run manually:		—
1	In the menu, go to Stop test run.	🔍
2	Select OK to confirm.	🔍



INFORMATION

If the outdoor temperature is outside the range of operation, the unit may NOT operate or may NOT deliver the required capacity.

To monitor leaving water and tank temperatures

During test run, 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 temperatures:

1	In the menu, go to Sensors.	🔍
2	Select the temperature information.	🔍

8.2.5 To perform an underfloor heating screed dryout

Conditions: Make sure all operation is disabled. Go to [C]: Operation and turn off Space heating/cooling and Tank operation.



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 12 hours after the first power-on.

To perform an underfloor heating screed dryout, DX indoor units needs to be disabled.

If the screed dryout still needs to be performed after the first 12 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.

9 Hand-over to the user

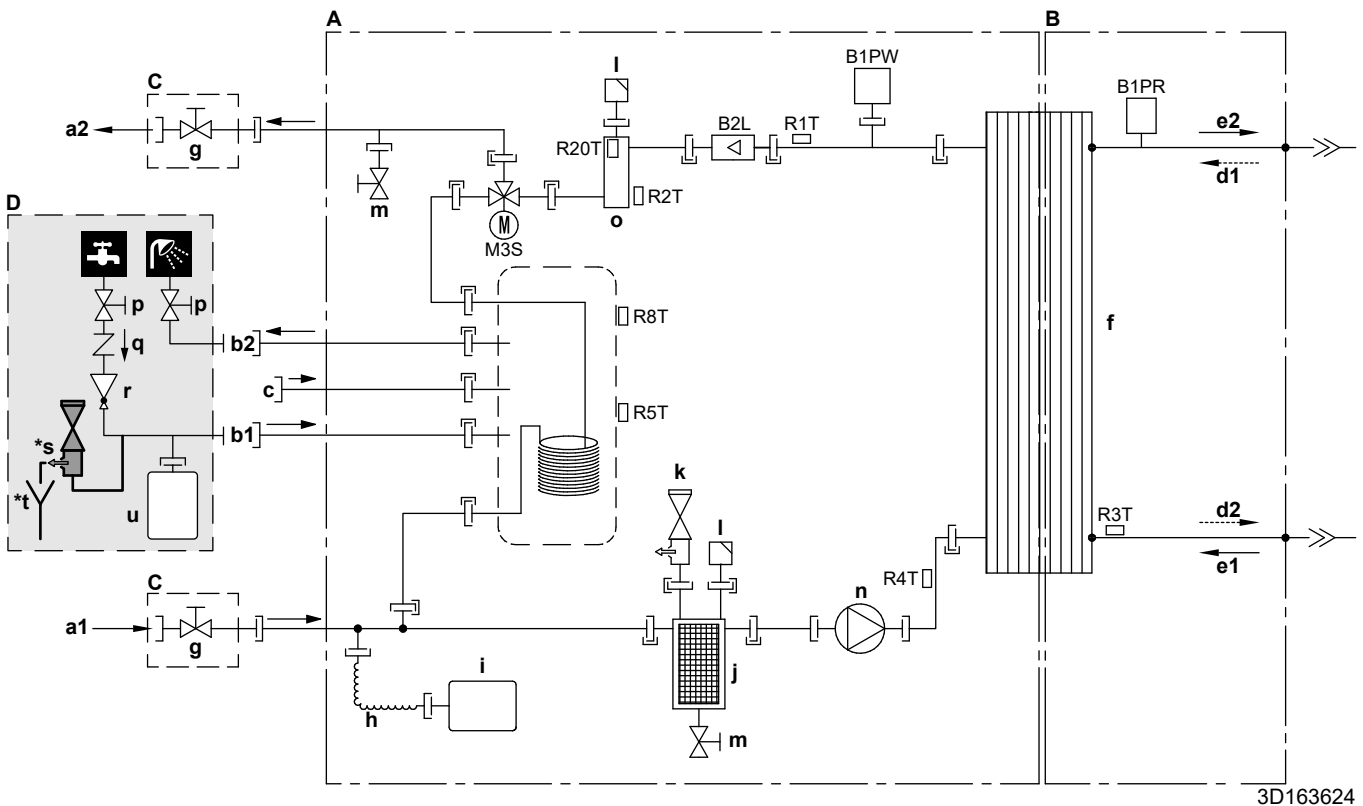
Once the test run is finished and the unit operates properly, make sure the following is clear for the user:

- 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/she can find the complete documentation at the URL mentioned earlier in this manual.
- Explain to 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 about energy saving tips to the user as described in the operation manual.

10 Technical data

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

10.1 Piping diagram: Indoor unit



- A** Water side
- B** Refrigerant side
- C** Field installed (delivered with the unit)
- D** Field supplied
- a1** Space heating/cooling – Water IN (screw connection, 1")
- a2** Space heating/cooling – Water OUT (screw connection, 1")
- b1** DHW – Cold water IN (screw connection, 3/4")
- b2** DHW – Hot water OUT (screw connection, 3/4")
- c** Recirculation connection
- d1** Gas refrigerant IN (heating mode; condenser)
- d2** Liquid refrigerant OUT (heating mode; condenser)
- e1** Liquid refrigerant IN (cooling mode; evaporator)
- e2** Gas refrigerant OUT (cooling mode; evaporator)
- f** Plate heat exchanger
- g** Shut-off valve for service
- h** Flexible pipe
- i** Expansion vessel
- j** Magnetic filter/dirt separator
- k** Safety valve
- l** Automatic air purge
- m** Drain valve
- n** Pump
- o** Backup heater
- p** Shut-off valve (recommended)

- q** Non-return valve (recommended)
- r** Pressure reducing valve (recommended)
- *s** Pressure relief valve (max. 10 bar (=1.0 MPa))(mandatory)
- *t** Tundish (mandatory)
- u** Expansion vessel (recommended)
- B2L** Flow sensor
- B1PR** Refrigerant pressure sensor
- B1PW** Space heating water pressure sensor
- M3S** 3-way valve (space heating/domestic hot water)
- Thermistors:**
- R1T** Outlet water heat exchanger
- R2T** Outlet water backup heater
- R3T** Heat exchanger, liquid pipe
- R4T** Inlet water
- R5T, R8T** Tank
- R20T** Backup heater top

- Connections:**
- Screw connection
 - Flare connection
 - Quick coupling
 - Brazed connection

10.2 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 outdoor unit
X2M	Field terminal AC indoor unit
X5M	Field terminal DC indoor unit
X6M	Field terminal backup heater power supply
-----	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 BUH should be foreseen outside the unit.	Note 1: Connection point of the power supply for the backup heater should be foreseen outside the unit.
Backup heater power supply	Backup heater power supply
☐ 4T1 (3~, 230 V, 4.5 kW)	☐ 4T1 (3~, 230 V, 4.5 kW)
☐ 4V3 (1N~, 230 V, 4.5 kW)	☐ 4V3 (1N~, 230 V, 4.5 kW)
☐ 9WN (3N~, 400 V, 9 kW)	☐ 9WN (3N~, 400 V, 9 kW)
User installed options	User installed options
☐ Remote user interface	☐ Dedicated Human Comfort Interface (BRC1HHDA used as room thermostat)
☐ Ext. indoor thermistor	☐ External indoor thermistor
☐ Ext outdoor thermistor	☐ External outdoor thermistor
☐ Safety thermostat	☐ Safety thermostat
☐ WLAN cartridge	☐ WLAN cartridge
☐ Bizone mixing kit	☐ Bizone mixing kit
Main LWT	Main leaving water temperature
☐ On/OFF thermostat (wired)	☐ ON/OFF thermostat (wired)
☐ On/OFF thermostat (wireless)	☐ ON/OFF thermostat (wireless)
☐ Ext. thermistor	☐ External thermistor
☐ Heat pump convector	☐ Heat pump convector

Position in switch box

English	Translation
Position in switch box	Position in switch box

Legend

A1P	Hydro PCB
A2P	* ON/OFF thermostat (PC=power circuit)
A3P	* Heat pump convector
A4P	* Digital I/O PCB
A11P	Main PCB of the MMI (= user interface of the indoor unit)
A14P	* Remote user interface (Human Comfort Interface)
A15P	* Receiver PCB (wireless ON/OFF thermostat)
A20P	* WLAN module
A30P	* Bizone mixing kit PCB
CN* (A4P)	Connector
E1H	Backup heater element (1 kW)

E2H	Backup heater element (1.5 kW)
E3H	Backup heater element (2 kW)
F1B	# Overcurrent fuse backup heater
F2B	# Overcurrent fuse Main
F1T	Thermal fuse backup heater
F1U, F2U (A4P)	* Fuse T 5 A 250 V for digital I/O PCB
J* (A20P)	Connector
K1M, K2M	Contactors backup heater
K5M	Safety contactor backup heater
K*R (A*P)	Relay on PCB
M2P	# Domestic hot water pump
M4P	# Secondary pump
M2S	# Shut-Off valve Main
P* (A*P)	Connector
PC (A15P)	* Power circuit
PHC1 (A4P)	* Optocoupler input circuit
Q*DI	# Earth leakage circuit breaker
Q4L	# Safety thermostat
R1H (A2P)	* Humidity sensor
R1T (A2P)	* Ambient sensor ON/OFF thermostat
R1T (A14P)	* Ambient sensor user interface
R2T (A2P)	* External sensor (floor or ambient)
R6T	* External indoor or outdoor ambient thermistor
S1S	# Preferential kWh rate power supply contact
SS1 (A4P)	* Selector switch
ST* (A30P)	Connector
X*, Y* (A4P)	Connector
X*A, X*Y, X*Y*, X*	Connector
X*H, X*HA	Connector
X*M	Terminal strip

* Optional
Field supply

Translation of text on wiring diagram

English	Translation
(1) Main power connection	(1) Main power connection
Indoor unit supplied from outdoor (standard)	Indoor unit supplied from outdoor unit (Standard)
Indoor unit supplied separately	Indoor unit supplied separately
Outdoor unit	Outdoor unit
Normal kWh rate power supply	Normal kWh rate power supply
2-pole fuse	2-Pole Fuse
(2) Backup heater power supply	(2) Backup heater power supply
4-pole fuse	4-pole fuse
Max.	Maximum
SWB	Switch box
Only for *	Only for *
(3) Ext. thermistor	(3) External thermistor
External ambient sensor option (indoor or outdoor)	External ambient sensor option (Indoor or Outdoor)
Voltage	Voltage
SWB	Switch box
(4) External On/OFF thermostats and heat pump convector	(4) External ON/OFF thermostats and heat pump convector

10 Technical data

English	Translation
Main LWT zone	Main leaving water temperature zone
For wired On/Off thermostat	For wired On/Off thermostat
For heat pump convector	For heat pump convector
For wireless ON/OFF thermostat EKRTTB	For wireless ON/OFF thermostat EKRTTB
Max. load	Maximum load
SWB	Switch box
(5) Field supplied options	(5) Field supplied options
Preferential kWh rate power supply contact	Preferential kWh rate power supply contact
Standard wiring	Standard wiring
For safety thermostat	For Safety Thermostat
Shut-off valve NC	Shut-off valve normally closed
Shut-off valve NO	Shut-off valve normally open
DHW pump	Domestic hot water pump
Secondary pump	Secondary pump
Contact rating	Contact rating
Max. load	Maximum load
DHW pump output	Domestic hot water pump output
Inrush	Inrush current
Continuous	Continuous current
SWB	Switch box
(6) User interface	(6) User interface
Remote user interface	Remote user interface (Human Comfort Interface)
SWB	Switch box
Voltage	Voltage
SD card	Card slot for WLAN cartridge
WLAN cartridge	WLAN cartridge
WLAN adapter module option	WLAN adapter module option
WLAN UART interface	WLAN UART interface
Debug UART interface	Debug UART interface
Bizone mixing kit	Bizone mixing kit
(7) Option PCBs	(7) Option PCBs
For digital I/O PCB option	For digital I/O PCB option
Alarm output	Alarm output
Space cooling/heating On/OFF output	Space cooling/heating ON/OFF output
Max. load	Maximum load
ON	ON
OFF	OFF

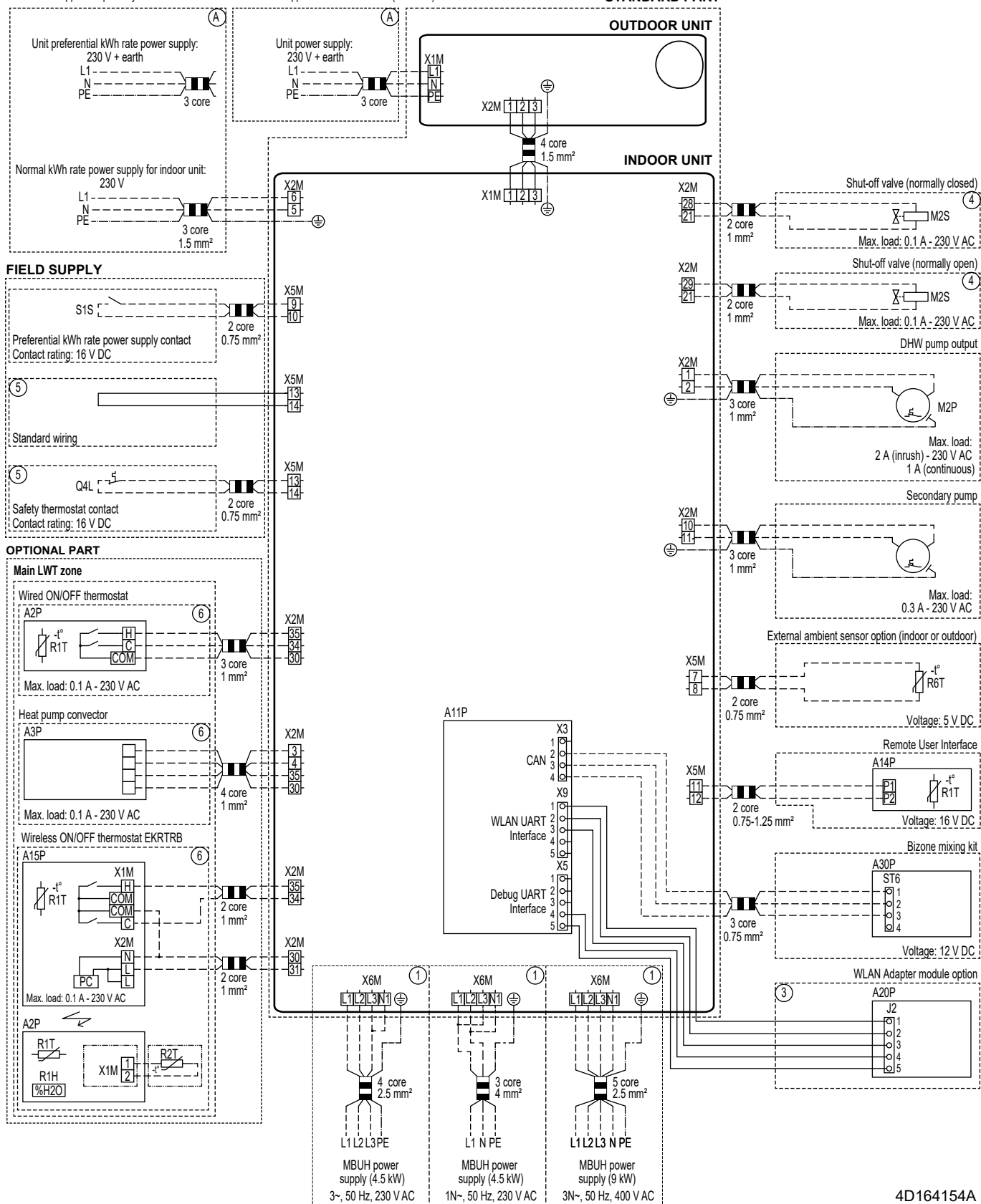
Electrical connection diagram

For more details, please check the unit wiring.

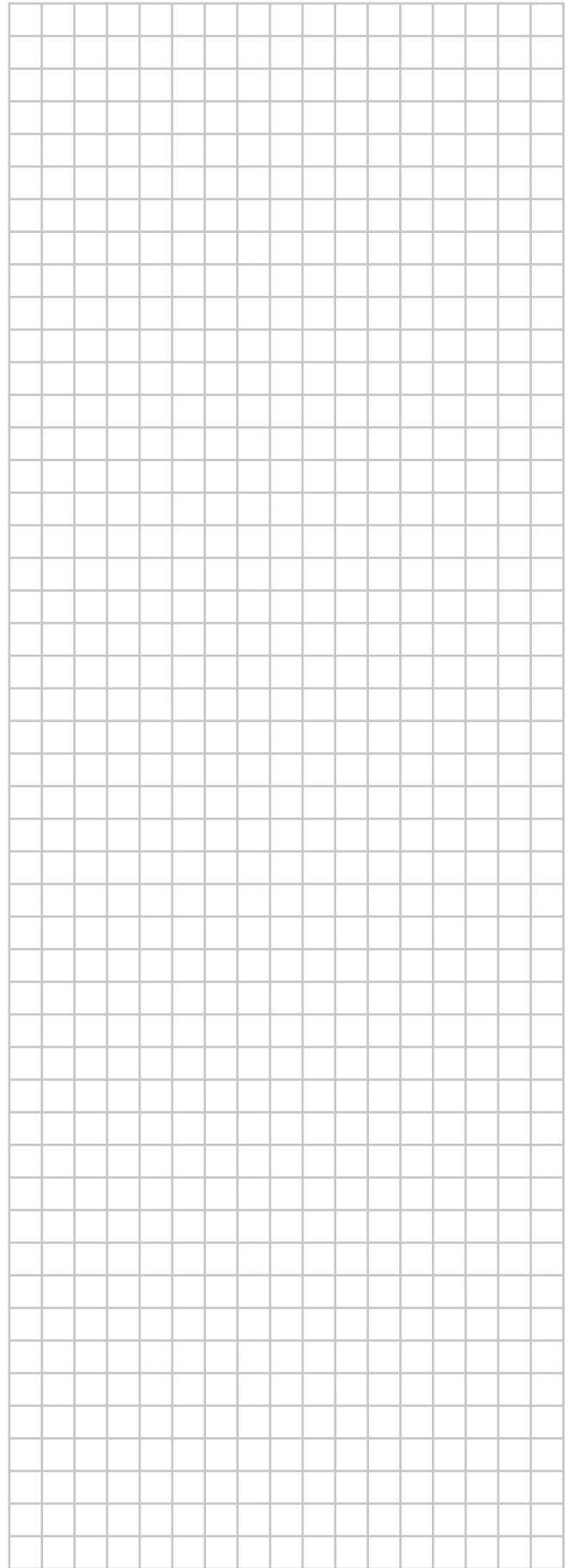
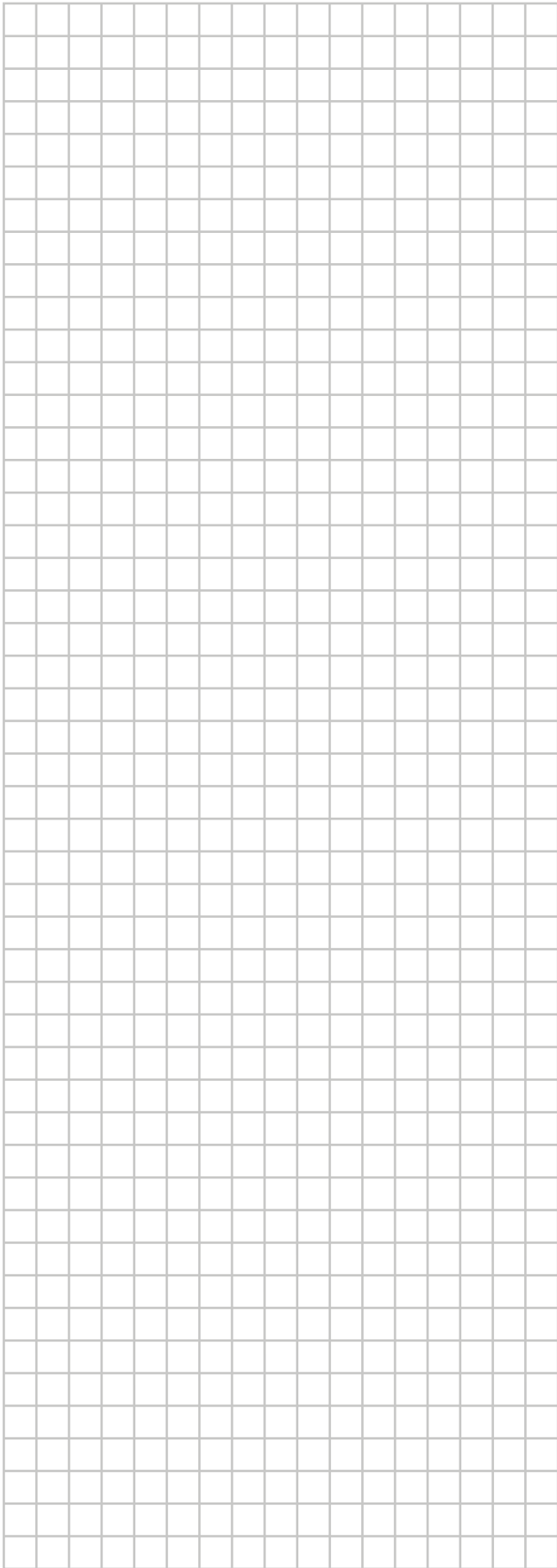
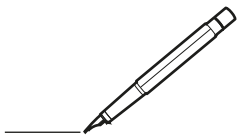
Note: In case of signal cable: keep minimum distance to power cables >5 cm**POWER SUPPLY**

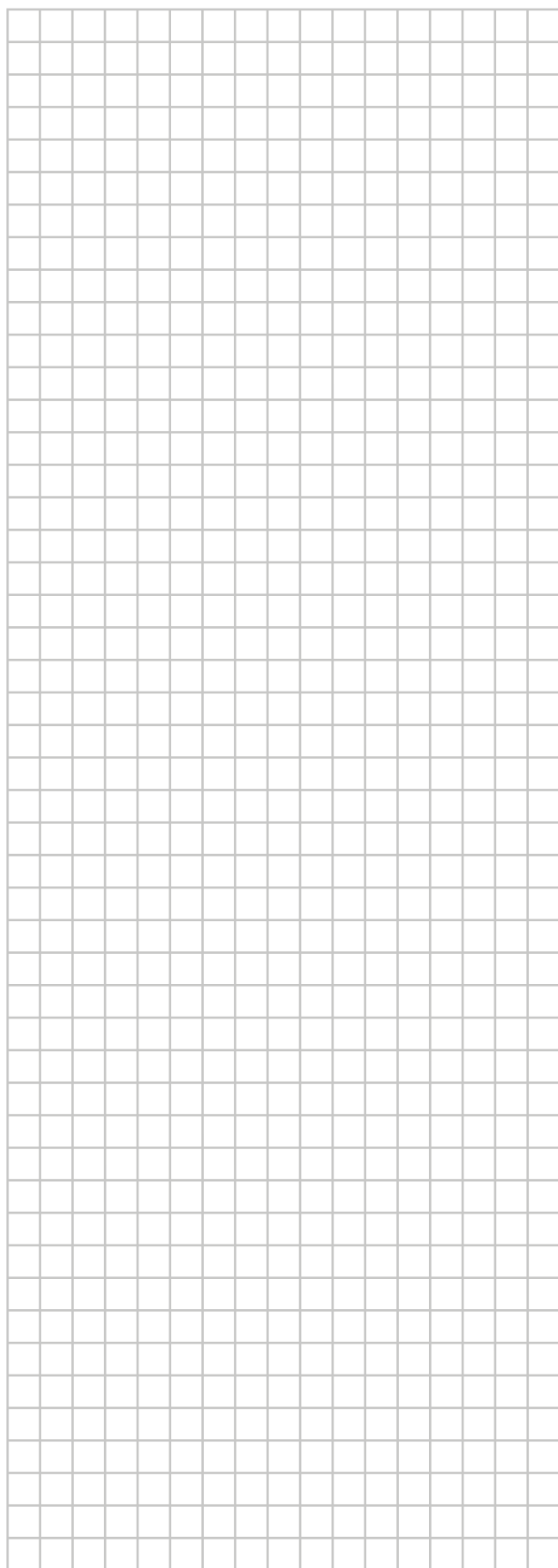
Indoor unit supplied separately

Indoor unit supplied from outdoor unit (standard)

STANDARD PART

4D164154A





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