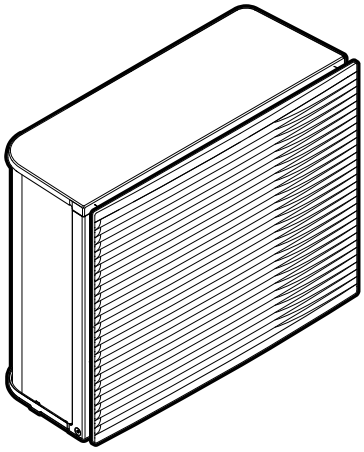
Installation manual

Daikin Altherma 3 H MT



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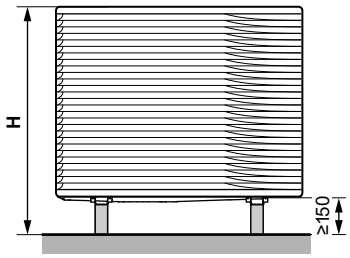
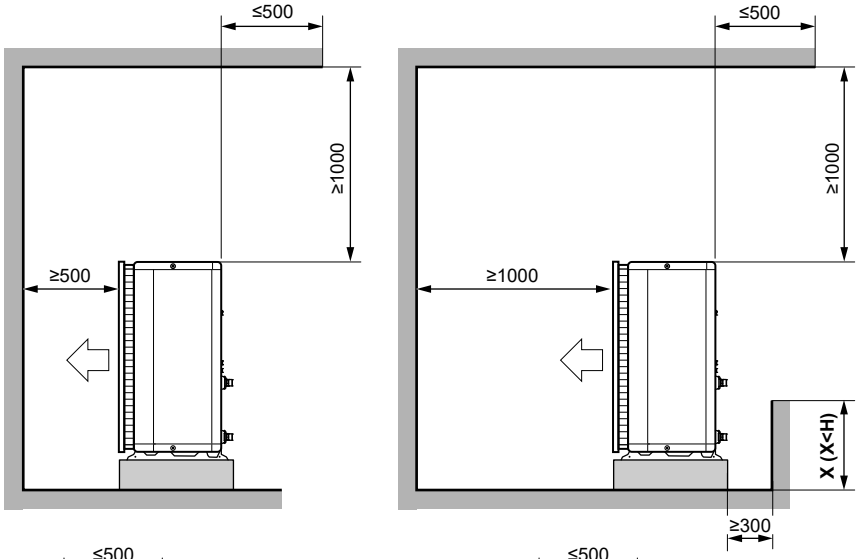
EPRA12EAW1

Installation manual
Daikin Altherma 3 H MT

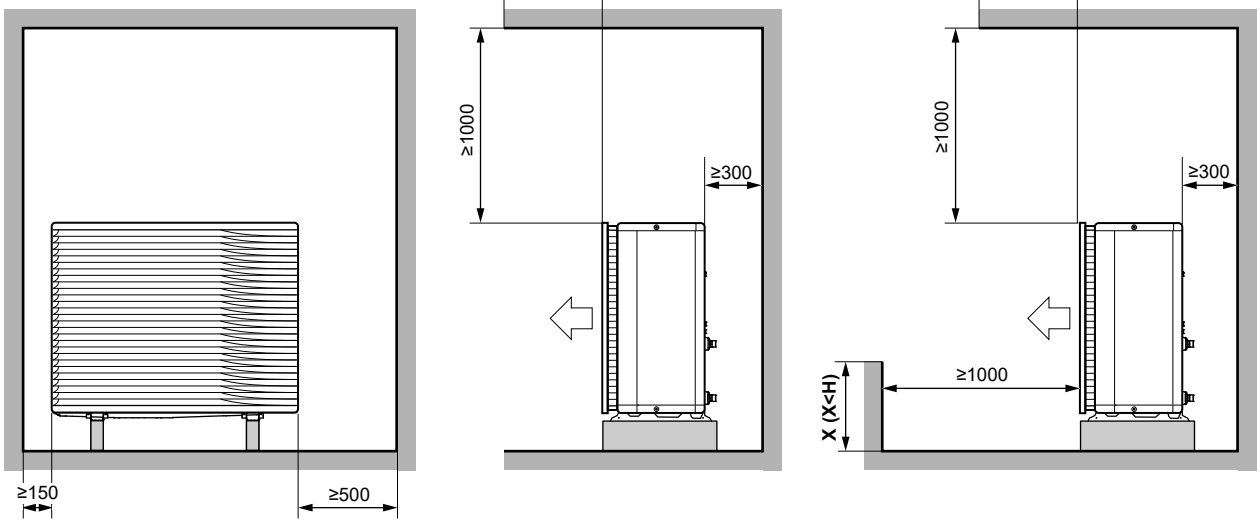
English

General





Top-side obstacle



No top-side obstacle

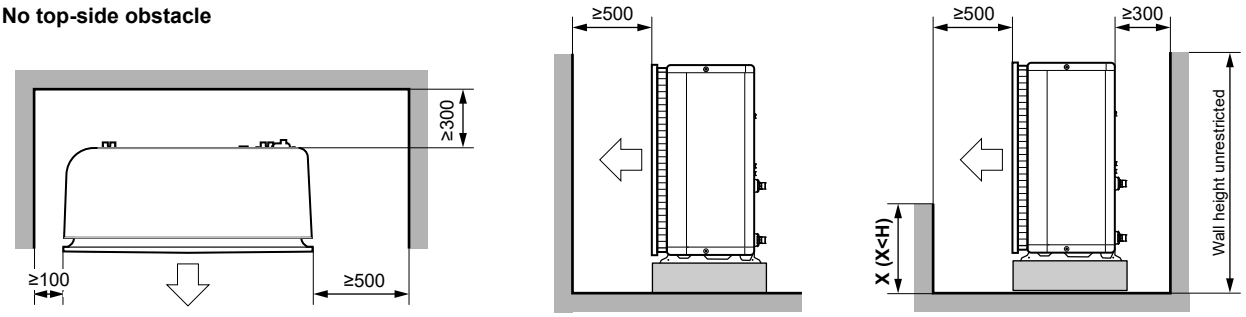


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Table of contents

1 About the documentation

1.1 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://daikintechnicaldatahub.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.

2 Specific installer safety instructions

Installation site (see "4.1 Preparing the installation site" [▸ 5])

WARNING

Follow the service space dimensions in this manual to install the unit correctly. See "4.1.1 Installation site requirements of the outdoor unit" [▸ 5].

Special requirements for R32 (see "4.1.1 Installation site requirements of the outdoor unit" [▸ 5])

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

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.

Mounting the outdoor unit (see "4.2 Mounting the outdoor unit" [▸ 6])

CAUTION

To avoid injury, do NOT touch the air inlet or aluminium fins of the unit.

WARNING

Fixing method of the outdoor unit MUST be in accordance with the instructions from this manual. See "4.2 Mounting the outdoor unit" [▸ 6].

Opening and closing the units (see "4.2 Mounting the outdoor unit" [▸ 6])

DANGER: RISK OF ELECTROCUTION

Do NOT leave the unit unattended when the service cover is removed.

DANGER: RISK OF ELECTROCUTION

DANGER: RISK OF BURNING/SCALDING

Piping installation (see "5 Piping installation" [▸ 8])

WARNING

Field piping MUST be in accordance with the instructions from this manual. See "5 Piping installation" [▸ 8].

In case of freeze protection by glycol:

WARNING

Ethylene glycol is toxic. If you add glycol to the water, do NOT install freeze protection valves. The valves release the toxic glycol when they are activated. **Possible consequence:**

- Heart, kidney or liver damage in case of glycol swallowing or skin contact with glycol.
- Nausea, sickness and diarrhea in case of glycol inhalation.

WARNING

Ethylene glycol is toxic.

WARNING

Due to the presence of glycol, the system can corrode. Uninhibited glycol becomes acidic under the influence of oxygen. High temperatures and the presence of copper accelerate this process. The acidic uninhibited glycol attacks metal surfaces and forms galvanic corrosion cells that cause severe damage to the system. It is therefore important to respect the following:

- A qualified water specialist has treated the water.
- Select glycol with corrosion inhibitors to prevent glycol oxidation and subsequent acid formation.
- Do NOT use automotive glycol because these contain corrosion inhibitors with only a limited lifetime. On top of that, they also contain silicates that can foul or plug the system.
- Do NOT use galvanised pipes in glycol systems because they provoke certain components in the glycol's corrosion inhibitor to precipitate.

Electrical installation (see "6 Electrical installation" [▸ 10])

DANGER: RISK OF ELECTROCUTION

WARNING

Electrical wiring MUST be in accordance with the instructions from:

- This manual. See "6 Electrical installation" [▸ 10].
- The wiring diagram, which is delivered with the unit, located at the inside of the service cover. For a translation of its legend, see "9.2 Wiring diagram: Outdoor unit" [▸ 17].

WARNING

ALWAYS use multicore cable for power supply cables.

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.

WARNING

- If the power supply has a missing or wrong N-phase, equipment might break down.
- Establish proper earthing. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earthing may cause electrical shocks.
- Install the required fuses or circuit breakers. See "6.2 Specifications of standard wiring components" [▸ 10].
- Secure the electrical wiring with cable ties so that the cables do NOT come in contact with sharp edges or piping, particularly on the high-pressure side.
- Do NOT use taped wires, extension cords, or connections from a star system. They can cause overheating, electrical shocks or fire.
- Do NOT install a phase advancing capacitor, because this unit is equipped with an inverter. A phase advancing capacitor will reduce performance and may cause accidents.

WARNING

Rotating fan. Before powering ON or servicing the outdoor unit, make sure that the discharge grille covers the fan as protection against a rotating fan. See:

- "7.2 To install the discharge grille" [▶ 14]
- "7.3 To remove the discharge grille, and put the grille in safety position" [▶ 15]

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.

CAUTION

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

INFORMATION

For details on the fuse ratings, the fuse types and the circuit breaker ratings, see "6 Electrical installation" [▶ 10].

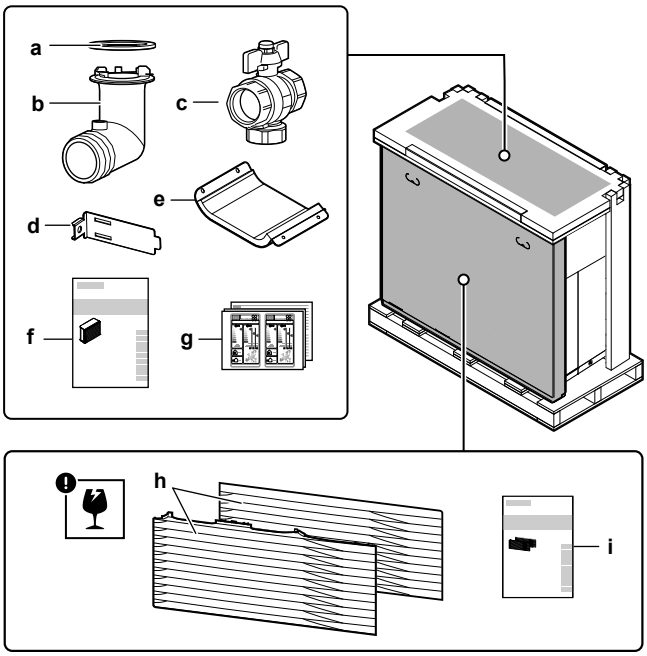
3 About the box

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 Outdoor unit

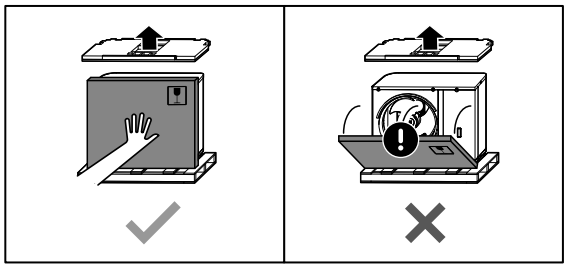
3.1.1 To remove the accessories from the outdoor unit



a O-ring for drain socket
b Drain socket
c Shut-off valve (with integrated filter)
d Thermistor fixture (for installations in areas with low ambient temperatures)
e Compressor cover piece
f Installation manual – Outdoor unit
g Energy label
h Discharge grille (upper + lower part)
i Installation manual – Discharge grille

NOTICE

Unpacking. When you remove the top packaging/ accessories, hold the box containing the discharge grille to prevent it from falling.



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).

4.1.1 Installation site requirements of the outdoor unit

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

Translation of text on figure 1:

English	Translation
General	General
No top-side obstacle	No top-side obstacle
Top-side obstacle	Top-side obstacle
Wall height unrestricted	Wall height unrestricted

The outdoor unit is designed for outdoor installation only, and for the following ambient temperatures:

Cooling mode	10~43°C
Heating mode	–28~25°C

Special requirements for R32

The outdoor unit contains an internal refrigerant circuit (R32), but you do NOT have to do any refrigerant field piping, or refrigerant charging.

Mind the following requirements and precautions:

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

WARNING

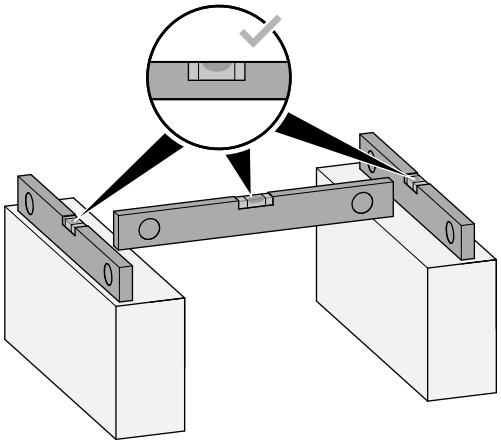
Make sure installation, servicing, maintenance and repair comply with instructions from Daikin and with applicable legislation (for example national gas regulation) and are executed ONLY by authorised persons.

4.2 Mounting the outdoor unit

4.2.1 To provide the installation structure

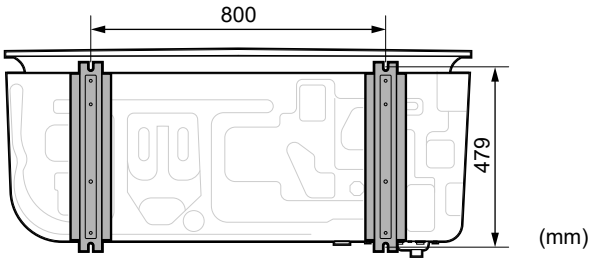
NOTICE

Level. Make sure the unit is leveled in all directions. Recommended:



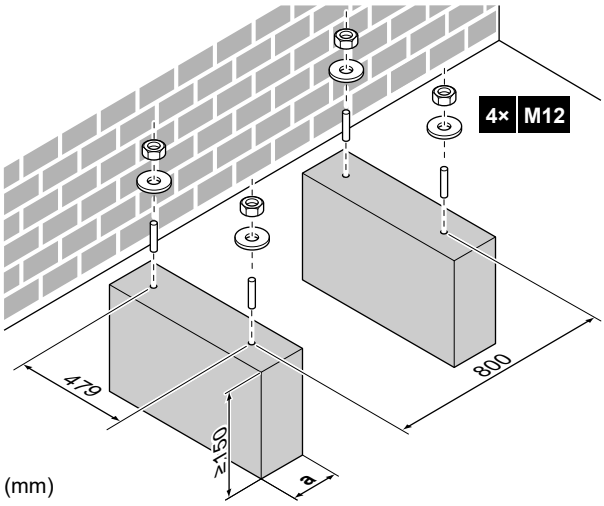
Use 4 sets of M12 anchor bolts, nuts and washers. Provide at least 150 mm of free space below the unit. Additionally, make sure the unit is positioned at least 100 mm above the maximum expected level of snow.

Anchor points



Pedestal

When installing on a pedestal, make sure that the discharge grille still can be put in its safety position. See "7.3 To remove the discharge grille, and put the grille in safety position" [▸ 15].



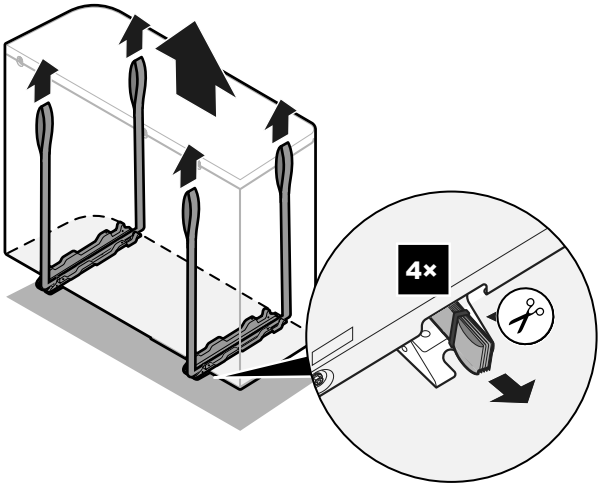
a Make sure not to cover the drain hole in the bottom plate of the unit.

4.2.2 To install the outdoor unit

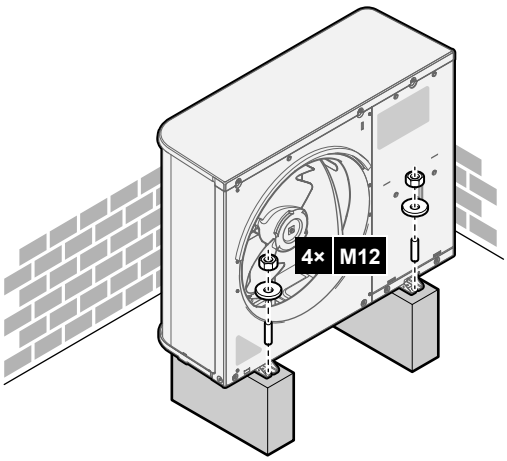
CAUTION

To avoid injury, do NOT touch the air inlet or aluminium fins of the unit.

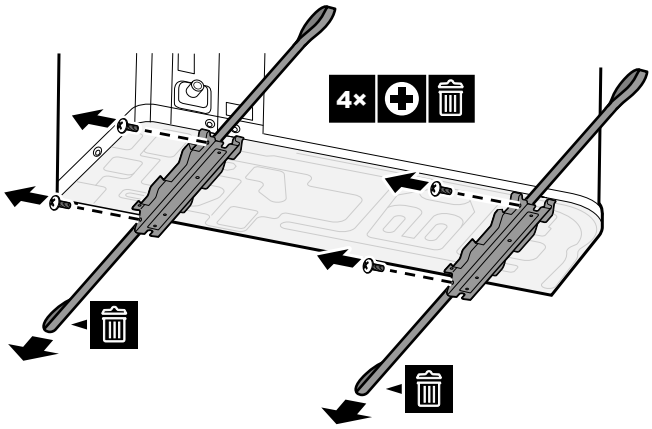
1 Carry the unit by its slings, and put it onto the installation structure.



2 Fix the unit to the installation structure.



3 Remove the slings (and screws), and dispose of them.



4.2.3 To provide drainage

Make sure that condensation water can be evacuated properly.

NOTICE

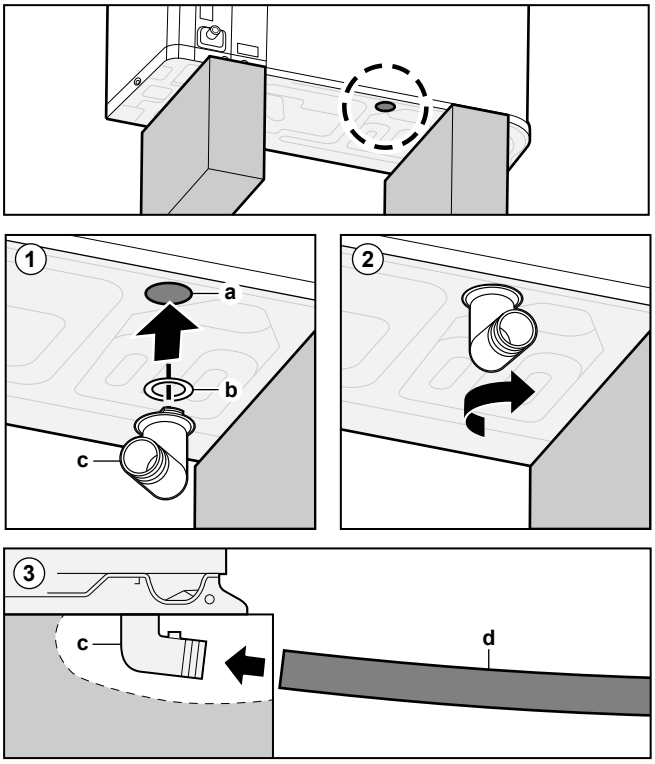
If the unit is installed in a cold climate, take adequate measures so that the evacuated condensate CANNOT freeze. We recommend to do the following:

- Insulate the drain hose.
- Install a drain tube heater (field supply). To connect the drain tube heater, see "6.4 To connect the electrical wiring to the outdoor unit" [▸ 10].

NOTICE

Provide at least 150 mm of free space below the unit. Additionally, make sure the unit is positioned at least 100 mm above the expected level of snow.

Use the drain plug (with O-ring) and a hose for drainage.



a Drain hole
b O-ring (delivered as accessory)
c Drain plug (delivered as accessory)
d Hose (field supply)

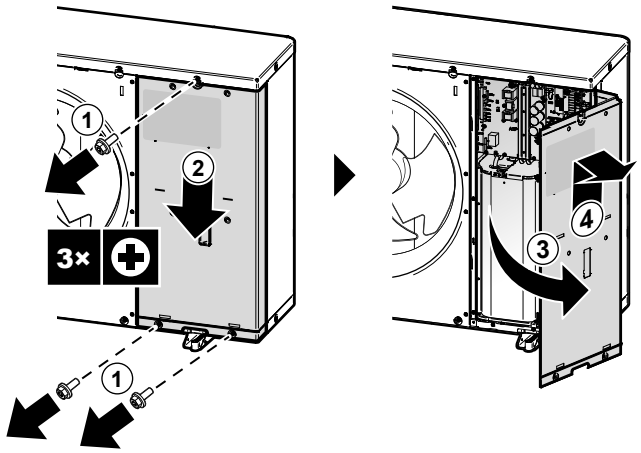
NOTICE

O-ring. Make sure the O-ring is installed correctly to prevent leakage.

4.3 To open the outdoor unit

DANGER: RISK OF ELECTROCUTION

DANGER: RISK OF BURNING/SCALDING

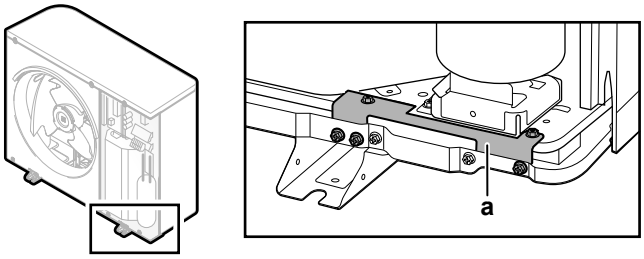


4.4 To remove the transportation stay

NOTICE

If the unit is operated with the transportation stay attached, abnormal vibration or noise may be generated.

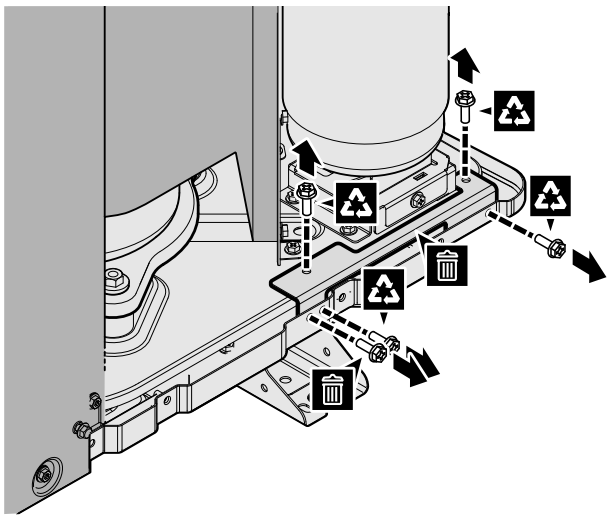
The transportation stay protects the unit during transport. During installation it must be removed.



a Transportation stay

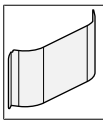
1 Open the switch box cover. See "4.3 To open the outdoor unit" [▸ 7].

2 Remove the screws (5×) from the transportation stay. Remove the transportation stay and dispose of it. Keep 4 screws to attach the compressor cover piece (see "4.5 To attach the compressor cover piece" [▸ 7]).

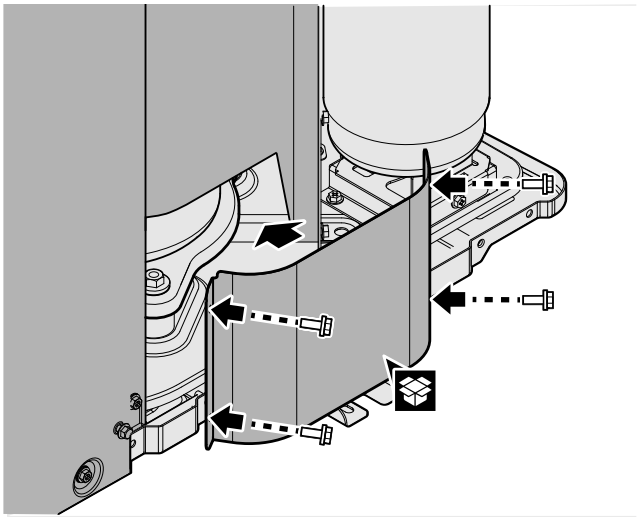


4.5 To attach the compressor cover piece

Required accessory (delivered with the unit):

	Compressor cover piece

1 Put the compressor cover piece on its place. Use the screws (4x) of the transportation stay to fix it (see "4.4 To remove the transportation stay" [▶ 7]).



5 Piping installation

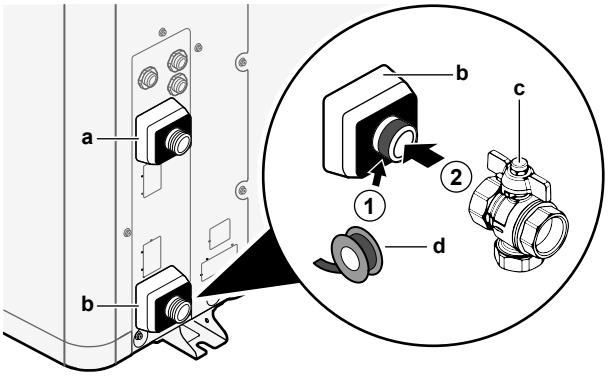
5.1 Connecting water piping

5.1.1 To connect the water piping

NOTICE

Do NOT use excessive force when connecting the field piping and make sure the piping is aligned properly. Deformed pipes can cause the unit to malfunction.

1 Connect the shut-off valve (with integrated filter) to the outdoor unit water inlet, using thread sealant.



a Water OUT (screw connection, male, 1")
b Water IN (screw connection, male, 1")
c Shut-off valve with integrated filter (delivered as accessory)(2× screw connection, female, 1")
d Thread sealant

2 Connect the field piping to the shut-off valve.

3 Connect the field piping to the outdoor unit water outlet.

NOTICE

About the shut-off valve with integrated filter (delivered as accessory):

- The installation of the valve at the water inlet is mandatory.
- Mind the flow direction of the valve.

NOTICE

Install air purge valves at all local high points.

5.1.2 To fill the water circuit

See the installation manual of the indoor unit, or the installer reference guide.

5.1.3 To protect the water circuit against freezing

About freeze protection

Frost can damage the system. To prevent the hydraulic components from freezing, the software is equipped with special frost protection functions such as water pipe freeze prevention and drain prevention (see the installer reference guide) that include the activation of a pump in case of low temperatures.

However, in case of a power failure, these functions cannot guarantee protection.

Do one of the following to protect the water circuit against freezing:

- Add glycol to the water. Glycol lowers the freezing point of the water.
- Install freeze protection valves. Freeze protection valves drain the water from the system before it can freeze. Insulate the freeze protection valves in a similar way as the water piping, but do NOT insulate the inlet and outlet (release) of these valves.

WARNING

Ethylene glycol is toxic. If you add glycol to the water, do NOT install freeze protection valves. The valves release the toxic glycol when they are activated. **Possible consequence:**

- Heart, kidney or liver damage in case of glycol swallowing or skin contact with glycol.
- Nausea, sickness and diarrhea in case of glycol inhalation.

Freeze protection by glycol

About freeze protection by glycol

Adding glycol to the water lowers the freezing point of water.

WARNING

Ethylene glycol is toxic.

WARNING

Due to the presence of glycol, the system can corrode. Uninhibited glycol becomes acidic under the influence of oxygen. High temperatures and the presence of copper accelerate this process. The acidic uninhibited glycol attacks metal surfaces and forms galvanic corrosion cells that cause severe damage to the system. It is therefore important to respect the following:

- A qualified water specialist has treated the water.
- Select glycol with corrosion inhibitors to prevent glycol oxidation and subsequent acid formation.
- Do NOT use automotive glycol because these contain corrosion inhibitors with only a limited lifetime. On top of that, they also contain silicates that can foul or plug the system.
- Do NOT use galvanised pipes in glycol systems because they provoke certain components in the glycol's corrosion inhibitor to precipitate.

NOTICE

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

Types of glycol

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

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

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

Required concentration of glycol

The required concentration of glycol depends on the lowest expected outdoor temperature, and on whether you want to protect the system from bursting or from freezing. To prevent the system from freezing, more glycol is required.

Add glycol according to the table below.

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

INFORMATION

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

NOTICE

- The required concentration might differ depending on the type of glycol. ALWAYS compare the requirements from the table above with the specifications provided by the glycol manufacturer. If necessary, meet the requirements set by the glycol manufacturer.
- The added concentration of glycol should NEVER exceed 35%.
- If the liquid in the system is frozen, the pump will NOT be able to start. Mind that if you only prevent the system from bursting, the liquid inside might still freeze.
- When water is at standstill inside the system, the system is very likely to freeze and get damaged.

Glycol and the maximum allowed water volume

Adding glycol to the water circuit reduces the maximum allowed water volume of the system. For more information, see the installer reference guide (topic "To check the water volume and flow rate").

Glycol setting

NOTICE

If glycol is present in the system, setting [E-0D] must be set to 1. If the glycol setting is NOT set correctly, the liquid inside the piping can freeze.

Freeze protection by freeze protection valves

About freeze protection valves

When no glycol is added to the water, you can use freeze protection valves to drain the water from the system before it can freeze.

- Install freeze protection valves (field supply) at all lowest points of the field piping.
- Normally closed valves (located indoors near the piping entry/exit points) can prevent that all water from indoor piping is drained when the freeze protection valves open.

NOTICE

When freeze protection valves are installed, set the minimum cooling setpoint (default=7°C) at least 2°C higher than the maximum opening temperature of the freeze protection valve. If lower, freeze protection valves can open during cooling operation.

For more information, see the installer reference guide.

5.1.4 To insulate the water piping

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

Outdoor water piping insulation

NOTICE

Outside piping. Make sure the outside piping is insulated as instructed to protect against hazards.

For piping in free air, it is recommended to use the insulation thickness as shown in below table as a minimum (with λ=0.039 W/(mK)).

Piping length (m)	Minimum insulation thickness (mm)
<20	19
20~30	32
30~40	40
40~50	50

For other cases the minimum insulation thickness can be determined using the Hydronic Piping Calculation tool.

The Hydronic Piping Calculation tool also calculates the maximum hydronic piping length from the indoor unit to the outdoor unit based on the emitter pressure drop or the other way around.

The Hydronic Piping Calculation tool is part of the Heating Solutions Navigator which can be reached via https://professional.standbyme.daikin.eu.

Please contact your dealer if you have no access to Heating Solutions Navigator.

This recommendation ensures good operation of the unit, however, local regulations may differ and shall be followed.

6 Electrical installation

DANGER: RISK OF ELECTROCUTION

WARNING

Rotating fan. Before powering ON or servicing the outdoor unit, make sure that the discharge grille covers the fan as protection against a rotating fan. See:

- "7.2 To install the discharge grille" [▶ 14]
- "7.3 To remove the discharge grille, and put the grille in safety position" [▶ 15]

WARNING

ALWAYS use multicore cable for power supply cables.

CAUTION

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

NOTICE

The distance between the high voltage and low voltage cables should be at least 50 mm.

6.1 About electrical compliance

Only for EPRA08~12E▲V3▼

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.).

6.2 Specifications of standard wiring components

NOTICE

We recommend using solid (single-core) wires. If stranded wires are used, slightly twist the strands to consolidate the end of the conductor for either direct use in the terminal clamp or insertion in a round crimp-style terminal. Details are described in "Guidelines when connecting the electrical wiring" in the installer reference guide.

Component		V3	W1
Power supply cable	MCA[(a)]	29.5 A	9.8 A
	Voltage	220-240 V	380-415 V
	Phase	1~	3N~
	Frequency	50 Hz	
	Wire size	MUST comply with national wiring regulation. 3 or 5-core cable Wire size based on the current, but not less than 2.5 mm²	
Interconnection cable (indoor ↔ outdoor)	Voltage	220-240 V	
	Wire size	Only use harmonised wire providing double insulation and suitable for applicable voltage. 4-core cable Minimum 1.5 mm²	
Recommended field fuse		32 A, C curve	16 A or 20 A, C curve
Earth leakage circuit breaker / residual current device		30 mA – MUST comply with national wiring regulation	

[(a)] MCA=Minimum circuit ampacity. Stated values are maximum values (see electrical data of combination with indoor units for exact values).

6.3 Guidelines when connecting the electrical wiring

Tightening torques

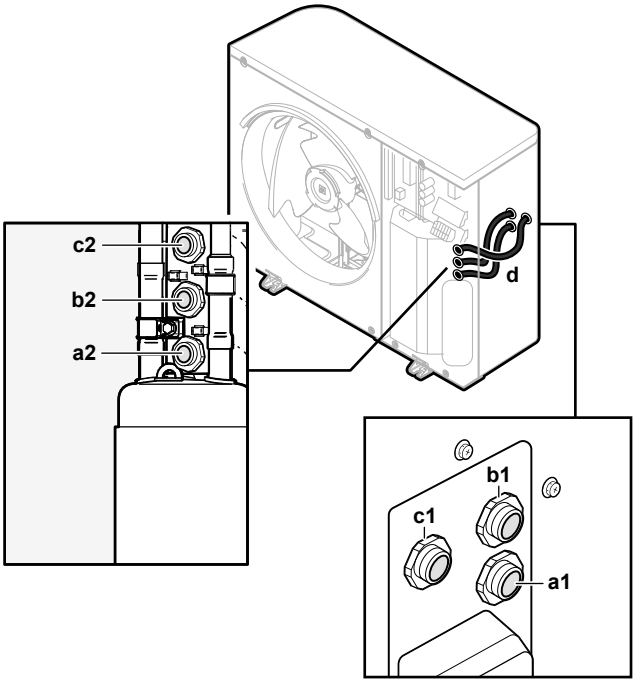
Outdoor unit:

Item	Tightening torque (N•m)
X1M	1.47 ±10%
X2M	
M4 (earth)	

6.4 To connect the electrical wiring to the outdoor unit

1 Open the switch box cover. See "4.3 To open the outdoor unit" [▶ 7].

2 Insert the cables at the back of the unit, and route them through the factory-mounted cable sleeves into the switch box.



a1+a2 Power supply cable (field supply)
b1+b2 Interconnection cable (field supply)
c1+c2 (optional) Drain tube heater cable (field supply)
d Cable sleeves (factory-mounted)

3 Inside the switch box, connect the wires to the appropriate terminals, and fix the cables with cable ties. See:

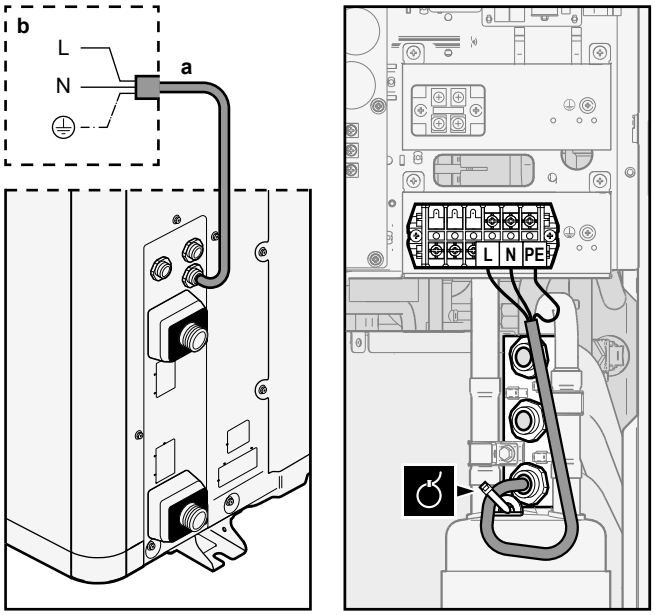
- "6.4.1 In case of V3 models" [▶ 11]
- "6.4.2 In case of W1 models" [▶ 12]

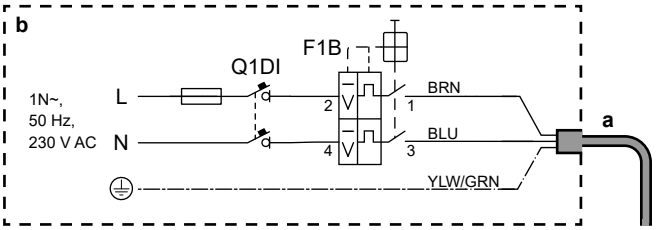
6.4.1 In case of V3 models

1 Power supply cable:

- Route the cable through the frame.
- Connect the wires to the terminal block.
- Fix the cable with a cable tie.

	Wires: 1N+GND Maximum running current: Refer to name plate on unit.
	—



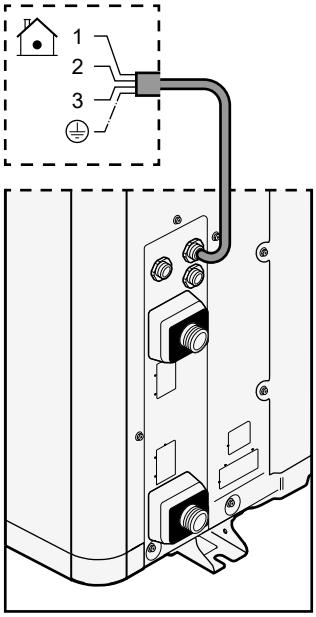


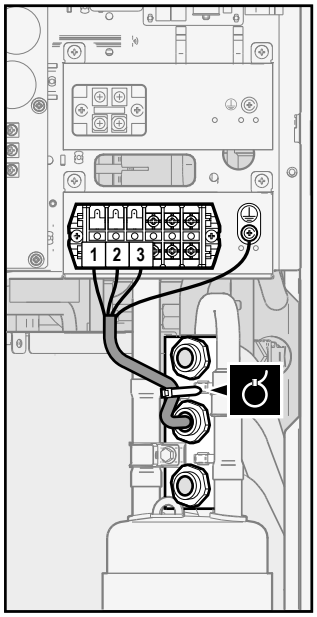
a Power supply cable (field supply)
b Field wiring
F1B Overcurrent fuse (field supply). Recommended fuse: 2 pole, 32 A fuse, C curve.
Q1DI Earth leakage circuit breaker (30 mA)(field supply)

2 Interconnection cable (indoor↔outdoor):

- Route the cable through the frame.
- Connect the wires to the terminal block (make sure the numbers match with the numbers on the indoor unit) and the earth screw.
- Fix the cable with a cable tie.

	Wires: (3+GND)×1.5 mm²
	—

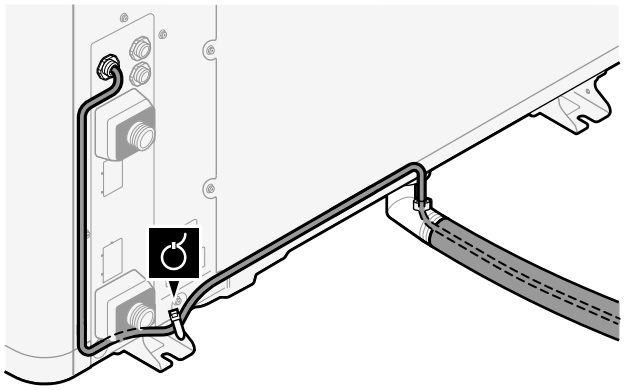


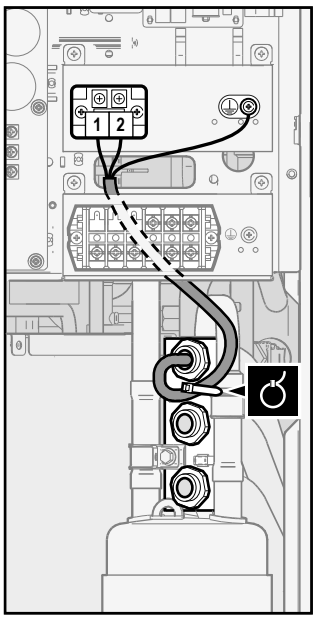


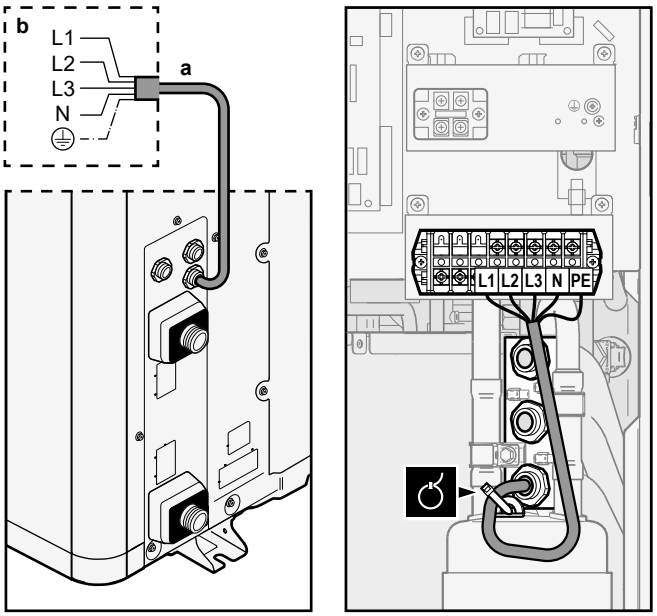
3 (Optional) **Drain tube heater cable**:

- Make sure the heating element of the drain tube heater is completely inside the drain tube.
- Route the cable through the frame.
- Connect the wires to the terminal block and the earth screw.
- Fix the cable with cable ties.

	Wires: (2+GND)×0.75 mm². Wiring must be double insulated. Maximum power allowed for drain tube heater = 115 W (0.5 A)
	—

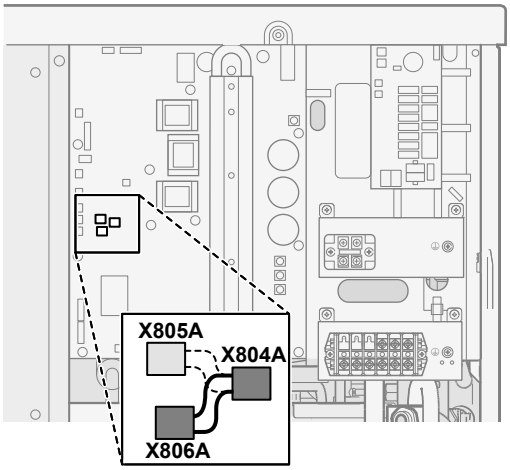






4 (Optional) **Power saving function**: If you want to use the power saving function:

- Disconnect X804A from X805A.
- Connect X804A to X806A.



INFORMATION

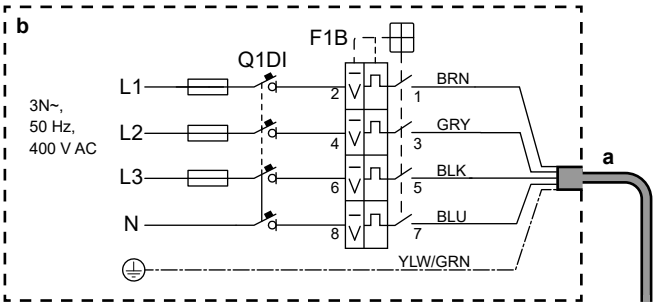
Power saving function. The power saving function is only applicable for V3 models. For more information about the power saving function ([9.F] or overview field setting [E-08]), see the installer reference guide.

6.4.2 In case of W1 models

1 Power supply cable:

- Route the cable through the frame.
- Connect the wires to the terminal block.
- Fix the cable with a cable tie.

	Wires: 3N+GND Maximum running current: Refer to name plate on unit.
	—

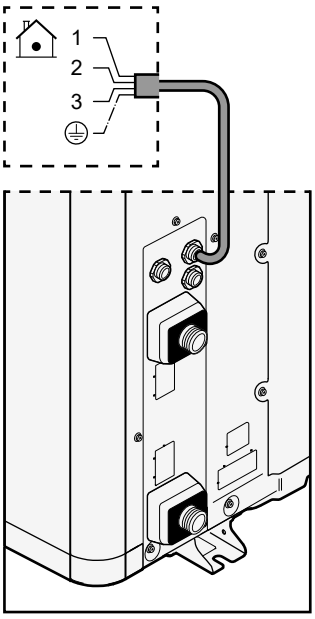


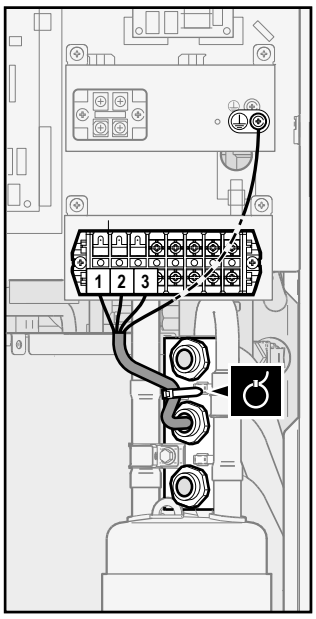
a Power supply cable (field supply)
b Field wiring
F1B Overcurrent fuse (field supply). Recommended fuse: 4 pole, 16 A or 20 A fuse, C curve.
Q1DI Earth leakage circuit breaker (30 mA)(field supply)

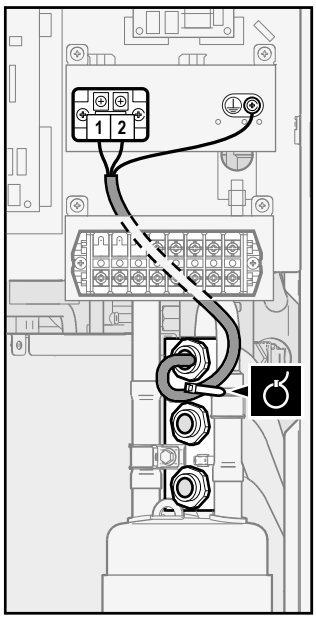
2 Interconnection cable (indoor↔outdoor):

- Route the cable through the frame.
- Connect the wires to the terminal block (make sure the numbers match with the numbers on the indoor unit) and the earth screw.
- Fix the cable with a cable tie.

	Wires: (3+GND)×1.5 mm²
	—



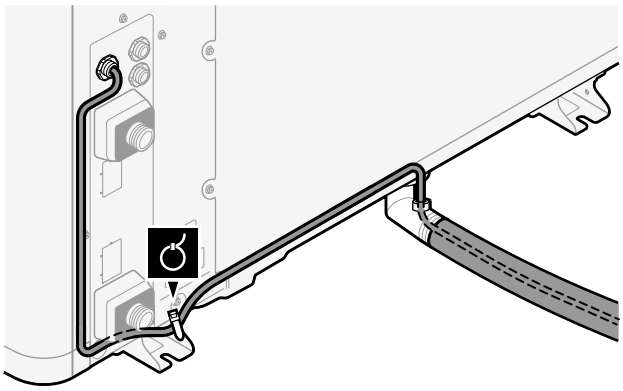




3 (Optional) **Drain tube heater cable**:

- Make sure the heating element of the drain tube heater is completely inside the drain tube.
- Route the cable through the frame.
- Connect the wires to the terminal block and the earth screw.
- Fix the cable with cable ties.

	Wires: (2+GND)×0.75 mm². Wiring must be double insulated. Maximum power allowed for drain tube heater = 115 W (0.5 A)
	—

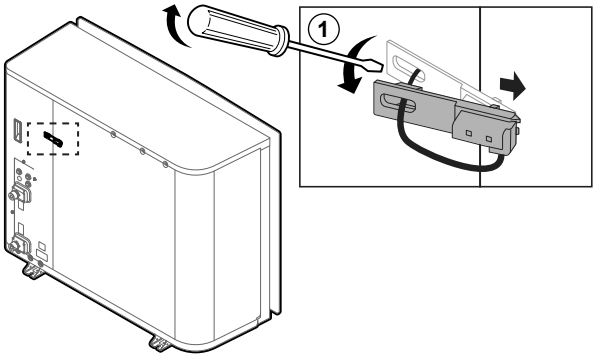


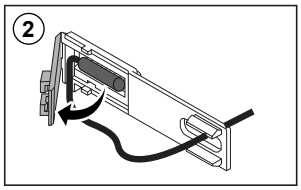
6.5 To reposition the air thermistor on the outdoor unit

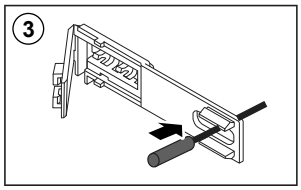
This procedure is only necessary in areas with low ambient temperatures.

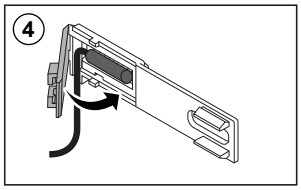
Required accessory (delivered with the unit):

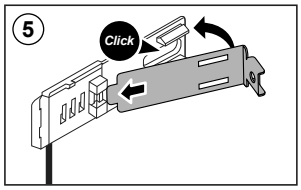
	Thermistor fixture.

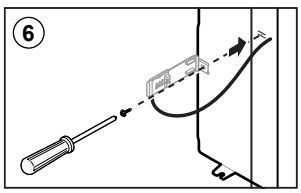


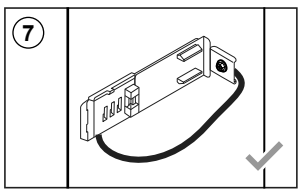










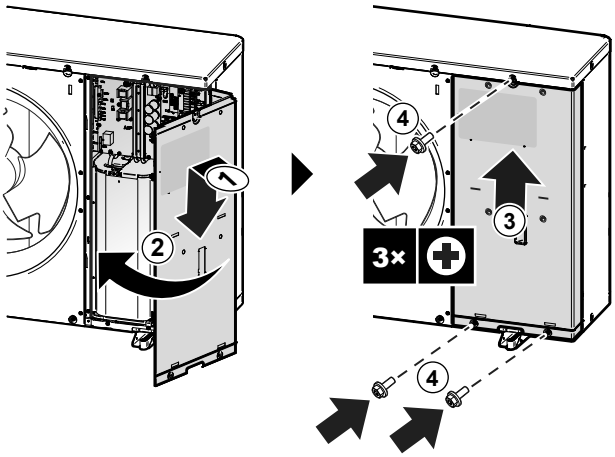


7 Finishing the outdoor unit installation

7.1 To close the outdoor unit

NOTICE

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

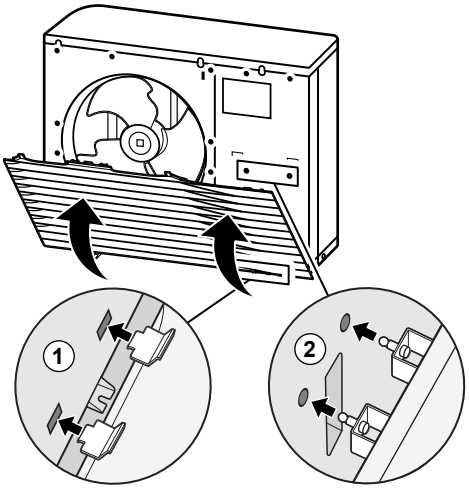


7.2 To install the discharge grille

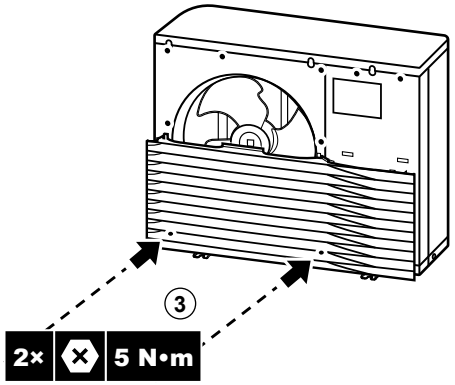
Install the lower part of the discharge grille

1 Insert the hooks.

2 Insert the ball studs.



3 Fix the 2 lower screws.



Install the upper part of the discharge grille

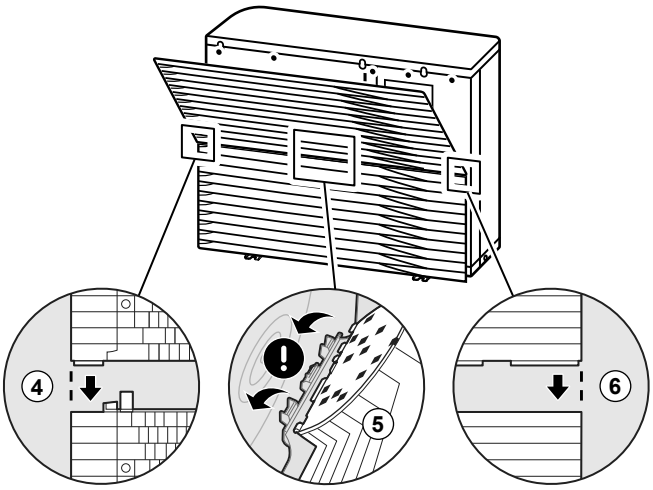
NOTICE

Vibrations. Make sure the upper part of the discharge grille is attached seamlessly to the lower part to prevent vibrations.

4 Align and attach the left side.

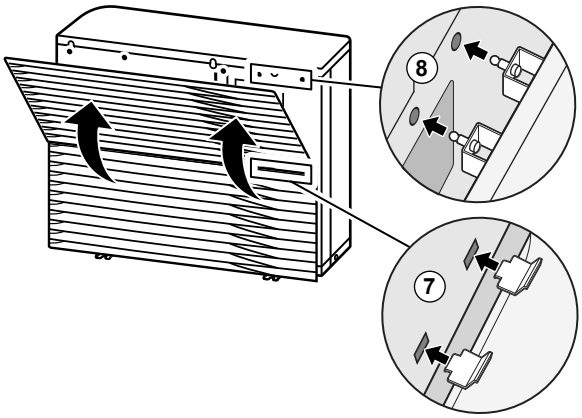
5 Align and attach the middle part.

6 Align and attach the right side.

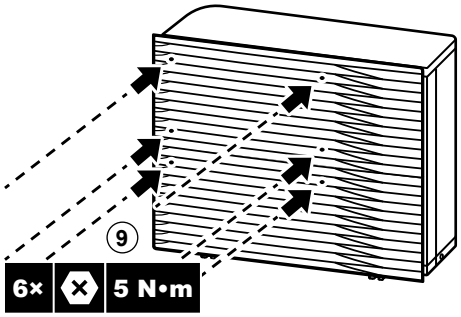


7 Insert the hooks.

8 Insert the ball studs.



9 Fix the 6 remaining screws.



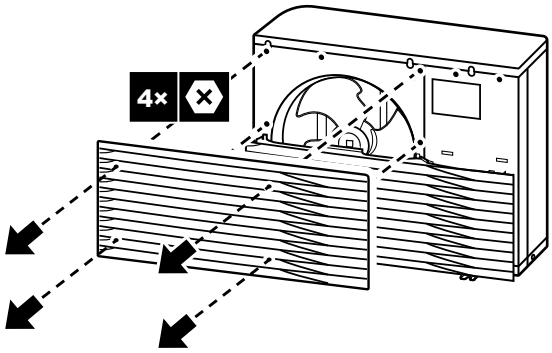
7.3 To remove the discharge grille, and put the grille in safety position

WARNING

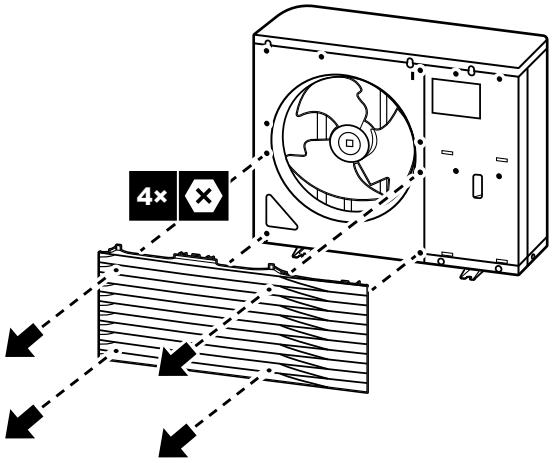
Rotating fan. Before powering ON or servicing the outdoor unit, make sure that the discharge grille covers the fan as protection against a rotating fan. See:

- "7.2 To install the discharge grille" [▸ 14]
- "7.3 To remove the discharge grille, and put the grille in safety position" [▸ 15]

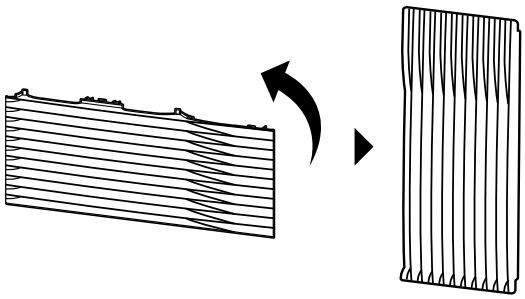
1 Remove the upper part of the discharge grille.



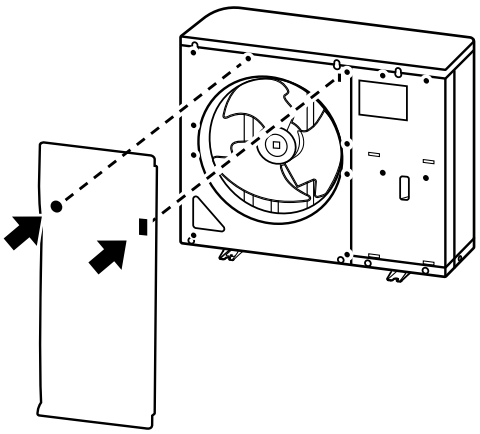
2 Remove the lower part of the discharge grille.



3 Rotate the lower part of the discharge grille.

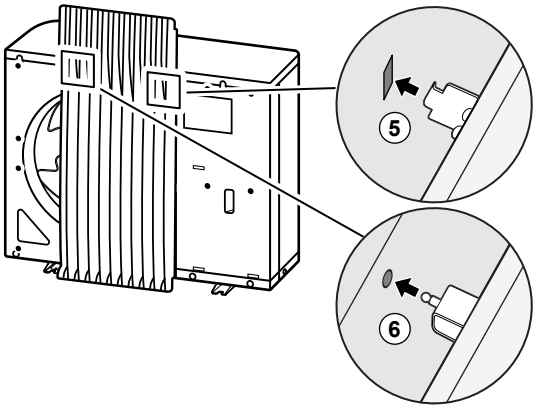


4 Align the ball stud and hook on the grille with their counterparts on the unit.



5 Insert the hook.

6 Insert the ball stud.



8 Starting up the outdoor unit

See the indoor unit installation manual for configuration and commissioning of the system.

WARNING

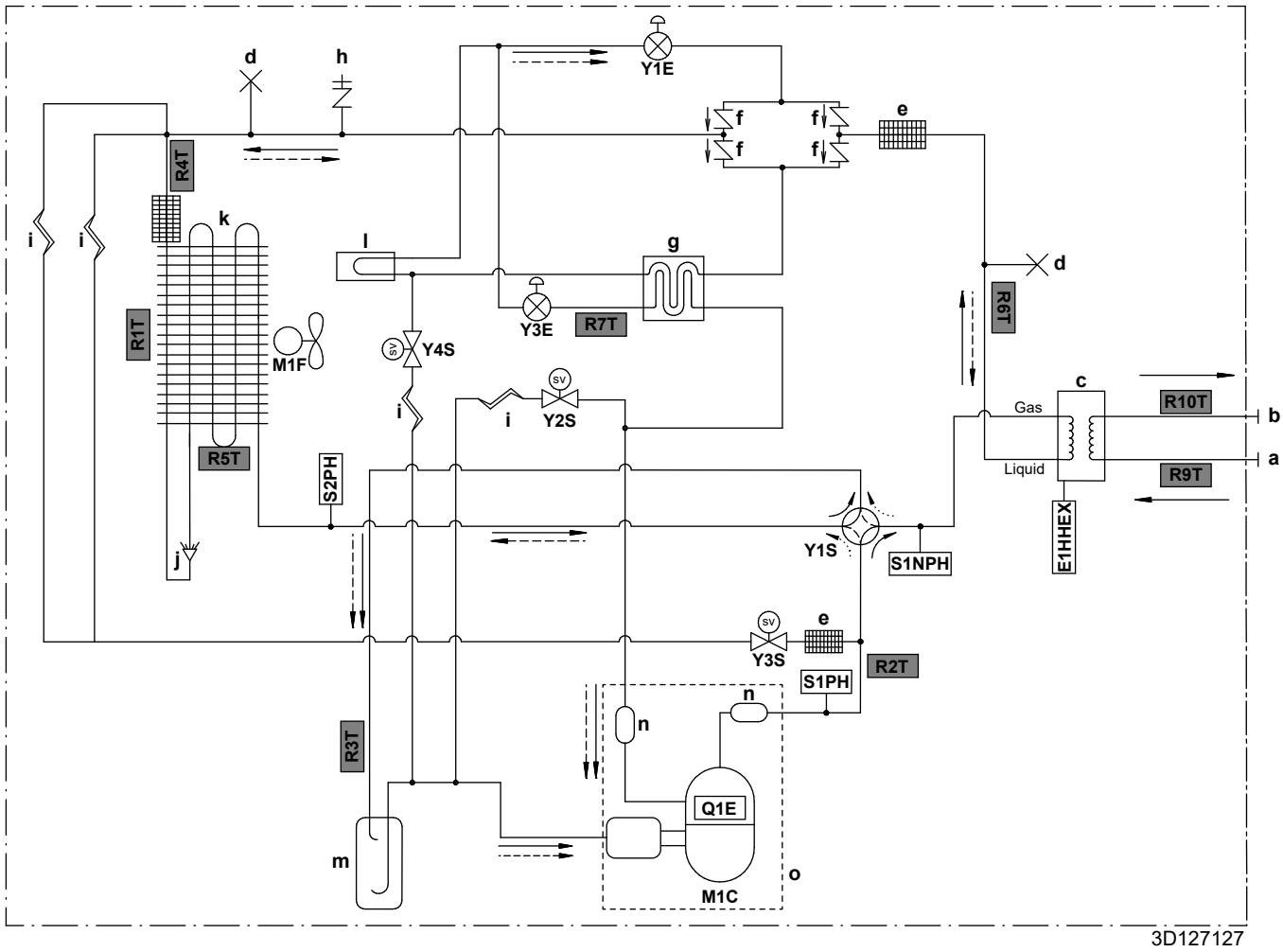
Rotating fan. Before powering ON or servicing the outdoor unit, make sure that the discharge grille covers the fan as protection against a rotating fan. See:

- "7.2 To install the discharge grille" [▸ 14]
- "7.3 To remove the discharge grille, and put the grille in safety position" [▸ 15]

9 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).

9.1 Piping diagram: Outdoor unit



Gas Gas
Liquid Liquid
a Water IN (screw connection, male, 1")
b Water OUT (screw connection, male, 1")
c Plate heat exchanger
d Pinched pipe
e Refrigerant filter
f One-way valve
g Economiser heat exchanger
h Service port 5/16" flare
i Capillary tube
j Distributor
k Air heat exchanger
l PCB cooling
m Accumulator
n Muffler
o Casing
E1HHEX Plate heat exchanger heater
M1C Compressor
M1F Fan motor
S1PH High pressure switch (4.6 MPa)
S2PH High pressure switch (4.17 MPa)
S1NPH High pressure sensor
Y1E Electronic expansion valve (main)
Y3E Electronic expansion valve (injection)
Y1S Solenoid valve (4-way valve)
Y2S Solenoid valve (low pressure bypass)
Y3S Solenoid valve (hot gas bypass)
Y4S Solenoid valve (liquid injection)
Q1E Overload

Thermistors:
R1T Thermistor - outdoor air
R2T Thermistor - compressor discharge
R3T Thermistor - compressor suction
R4T Thermistor - air heat exchanger, distributor
R5T Thermistor - air heat exchanger, middle
R6T Thermistor - refrigerant liquid
R7T Thermistor - injection
R9T Thermistor - entering water
R10T Thermistor - leaving water

Refrigerant flow:
Heating
Cooling

9.2 Wiring diagram: Outdoor unit

The wiring diagram is delivered with the unit, located at the inside of the switch box covers.

English	Translation
Electronic component assembly	Electronic component assembly
Front side view	Front side view
Indoor	Indoor
OFF	OFF
ON	ON
Outdoor	Outdoor
Position of compressor terminal	Position of compressor terminal
Position of elements	Position of elements
Rear side view	Rear side view[a]
Right side view	Right side view
See note ***	See note ***

[a] Only for *W1 models.

Notes:

1	Symbols:	
	L	Live
	N	Neutral
	⏚	Protective earth
	⏚	Noiseless earth
		Field wiring
		Option
		Terminal strip
		Terminal
		Connector
		Connection
2	Colours:	
	BLK	Black
	RED	Red
	BLU	Blue
	WHT	White
	GRN	Green
	YLW	Yellow
	PNK	Pink
	ORG	Orange
	GRY	Grey
	BRN	Brown
3	This wiring diagram applies only to the outdoor unit.	
4	When operating, do not short-circuit protective devices Q1, S1PH and S2PH.	
5	Refer to the combination table and the option manual for how to connect the wiring to X5A[a], X77A[a], X41A and X2M.	
6	The factory setting of all switches is OFF, do not change the setting of the selector switch (DS1).	

[a] Only for *W1 models.

Legend in case of W1 models:

A1P	Printed circuit board (main)
A2P	Printed circuit board (noise filter)
A4P	Printed circuit board (ACS)
BS1~BS3 (A1P)	Push button switch
C1~C619 (A1P)	Capacitor
DS1 (A1P)	DIP switch
E1H	Drain tube heater (field supply)
E1HHEX	Plate heat exchanger heaters
F1U	Field fuse (field supply)
F1U, F3U (A2P)	Fuse (T 6.3 A / 250 V)
F4U, F5U (A2P)	Fuse (T 30 A / 500 V)
F7U (A1P)	Fuse (T 5.0 A / 250 V)
H1P~H7P (A1P)	Light-emitting diode (service monitor is orange)
HAP (A1P)	Light-emitting diode (service monitor is green)
K1R (A1P)	Magnetic relay (Y1S)
K1R (A4P)	Magnetic relay (E1HHEX)
K2R (A1P)	Magnetic relay (Y2S)
K2R (A4P)	Magnetic relay (E1H)
K3R (A1P)	Magnetic relay (Y3S)
K10R~K84R (A1P)	Magnetic relay
K1M~K2M (A1P)	Magnetic contactor
L2R~L9R (A1P)	Reactor
M1C	Compressor motor
M1F	Fan motor
PS (A1P)	Switching power supply
Q1DI	Earth leakage circuit breaker (30 mA) (field supply)
Q1	Thermal overcurrent protector
R2~R807 (A1P)	Resistor
R1T	Thermistor (outdoor air)
R2T	Thermistor (compressor discharge)
R3T	Thermistor (compressor suction)
R4T	Thermistor (air heat exchanger, liquid pipe)
R5T	Thermistor (air heat exchanger, middle)
R6T	Thermistor (refrigerant liquid)
R7T	Thermistor (injection)
R9T	Thermistor (entering water)
R10T	Thermistor (leaving water)
R11T	Thermistor (fin)
RC (A1P)	Signal receiver circuit
S1NPH	High pressure sensor
S1PH, S2PH	High pressure switch
SEG* (A1P)	7-segment display
TC (A1P)	Signal transmission circuit
V1D~V3D (A1P)	Diode
V1R~V2R (A1P)	Diode module
V3R~V5R (A1P)	Insulated Gate Bipolar Transistor (IGBT) power module
X1M, X2M	Terminal strip
Y1E	Electronic expansion valve (main)
Y3E	Electronic expansion valve (injection)
Y1S	Solenoid valve (4-way valve)
Y2S	Solenoid valve (low pressure bypass)
Y3S	Solenoid valve (hot gas bypass)
Y4S	Solenoid valve (liquid injection)
Z1C~Z10C	Noise filter (ferrite core)
Z1F~Z5F (A1P, A2P)	Noise filter

Legend in case of V3 models:

A1P	Printed circuit board (main)
A2P	Printed circuit board (noise filter)
A4P	Printed circuit board (ACS)
A5P	Printed circuit board (flash)
BS1~BS4 (A1P)	Push button switch
C1~C806 (A1P, A2P)	Capacitor
DS1 (A1P)	DIP switch
E1H	Drain tube heater (field supply)
E1HHEX~E3HHEX	Plate heat exchanger heaters
F1U	Field fuse (field supply)
F1U~F4U (A2P)	Fuse (T 6.3 A / 250 V)
F6U (A1P)	Fuse (T 5.0 A / 250 V)
H1P~H7P (A1P)	Light-emitting diode (service monitor is orange)
HAP (A1P)	Light-emitting diode (service monitor is green)
K1R (A1P)	Magnetic relay (Y1S)
K1R (A4P)	Magnetic relay (E1HHEX)
K2R (A1P)	Magnetic relay (Y2S)
K2R (A4P)	Magnetic relay (E1H)
K3R (A1P)	Magnetic relay (Y3S)
K10R (A1P)	Magnetic relay
K11M (A1P)	Magnetic contactor
K13R~K15R (A1P, A2P)	Magnetic relay
L1R~L3R (A1P)	Reactor
M1C	Compressor motor
M1F	Fan motor
PS (A1P)	Switching power supply
Q1	Thermal overcurrent protector
Q1DI	Earth leakage circuit breaker (30 mA) (field supply)
R533~R807 (A1P, A2P)	Resistor
R1T	Thermistor (outdoor air)
R2T	Thermistor (compressor discharge)
R3T	Thermistor (compressor suction)
R4T	Thermistor (air heat exchanger, liquid pipe)
R5T	Thermistor (air heat exchanger, middle)
R6T	Thermistor (refrigerant liquid)
R7T	Thermistor (injection)
R9T	Thermistor (entering water)
R10T	Thermistor (leaving water)
R11T	Thermistor (fin)
RC (A2P)	Signal receiver circuit
S1NPH	High pressure sensor
S1PH, S2PH	High pressure switch
TC (A2P)	Signal transmission circuit
V1D~V4D (A1P)	Diode
V1R (A1P)	IGBT power module
V2R (A1P)	Diode module
V1T~V3T (A1P)	Insulated Gate Bipolar Transistor (IGBT)
X1M, X2M	Terminal strip
Y1E	Electronic expansion valve (main)
Y3E	Electronic expansion valve (injection)
Y1S	Solenoid valve (4-way valve)
Y2S	Solenoid valve (low pressure bypass)
Y3S	Solenoid valve (hot gas bypass)
Y4S	Solenoid valve (liquid injection)
Z1C~Z11C	Noise filter (ferrite core)
Z1F~Z6F (A1P, A2P)	Noise filter

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