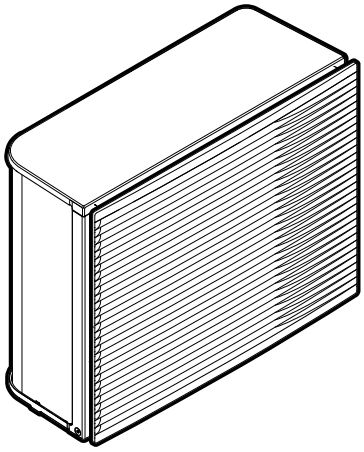
altherma

Installation manual

Daikin Altherma 3 R MT



https://daikintechnicaldatahub.eu

ERRA08E▲V3▼
ERRA10E▲V3▼
ERRA12E▲V3▼

ERRA08E▲W1▼
ERRA10E▲W1▼
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▲= 1, 2, 3, …, 9, A, B, C, …, Z
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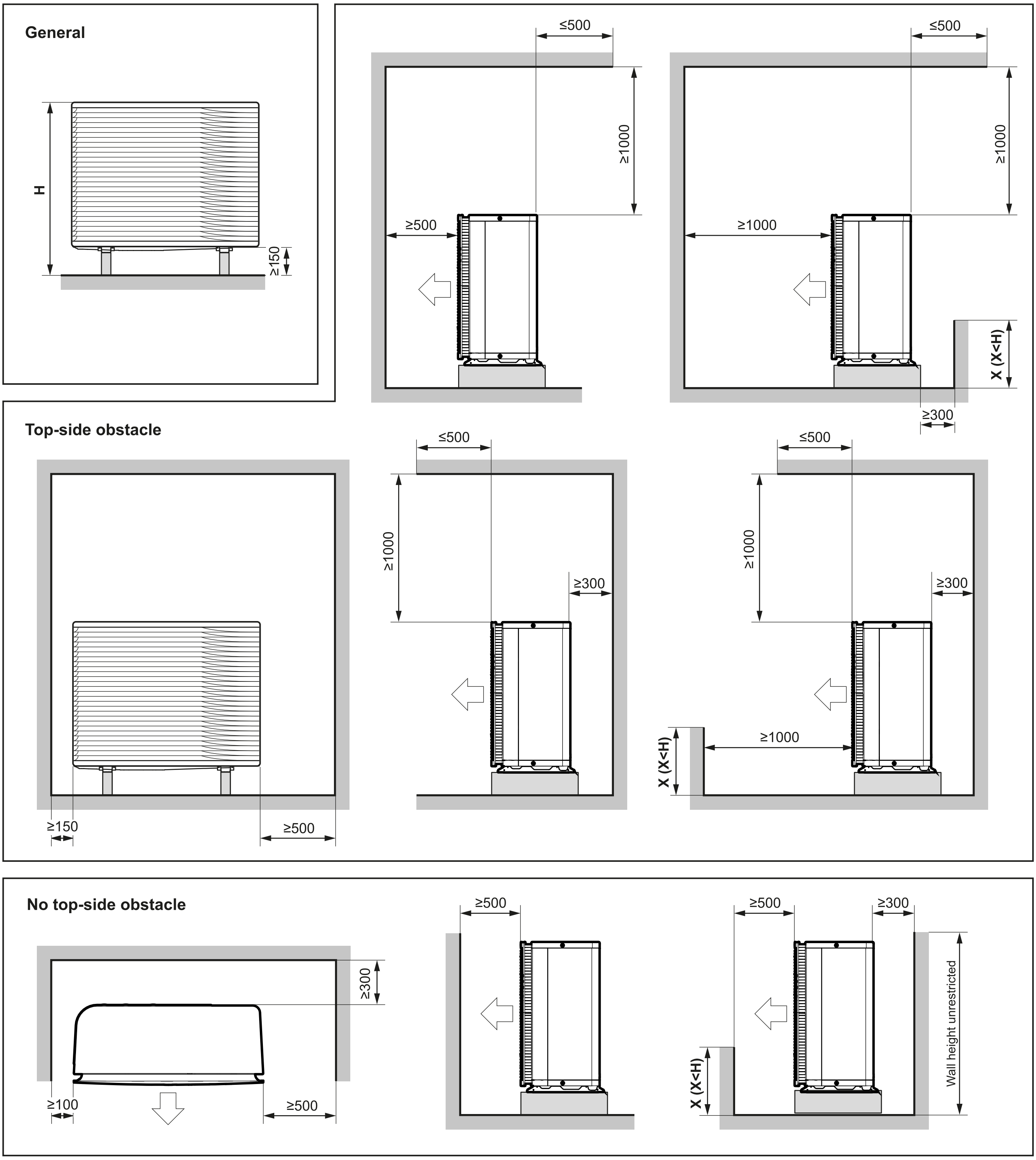

General
H
≥150
≤500
≥1000
≥500
≤500
≥1000
≥1000
X (X<H)
≥300
Top-side obstacle
≤500
≥1000
≥300
≤500
≥1000
≥300
≥1000
X (X<H)
≥150
≥500
No top-side obstacle
≥300
≥100
≥500
≥500
≥500
≥300
X (X<H)
Wall height unrestricted

(mm)

1

Table of contents

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" [▶ 5])

WARNING

Fixing method of the outdoor unit MUST be in accordance with the instructions from this manual. See "4.2 Mounting the outdoor unit" [▶ 5].

Opening and closing the units (see "4.2 Mounting the outdoor unit" [▶ 5])

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].

DANGER: RISK OF BURNING/SCALDING

WARNING

Provide adequate measures to prevent that the unit can be used as a shelter by small animals. Small animals that make contact with electrical parts can cause malfunctions, smoke or fire.

WARNING

- Only use R32 as refrigerant. Other substances may cause explosions and accidents.
- R32 contains fluorinated greenhouse gases. Its global warming potential (GWP) value is 675. Do NOT vent these gases into the atmosphere.
- When charging refrigerant, ALWAYS use protective gloves and safety glasses.

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

- 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

ALWAYS use multicore cable for power supply cables.

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:

- "7.3 To install the discharge grille" [▶ 13]
- "7.4 To remove the discharge grille, and put the grille in safety position" [▶ 14]

CAUTION

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

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.

INFORMATION

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

Finishing the installation (see "7 Finishing the outdoor unit installation" [▶ 13])

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:

- "7.3 To install the discharge grille" [▶ 13]
- "7.4 To remove the discharge grille, and put the grille in safety position" [▶ 14]

Starting up (see "8 Starting up the outdoor unit" [▶ 15])

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:

- "7.3 To install the discharge grille" [▶ 13]
- "7.4 To remove the discharge grille, and put the grille in safety position" [▶ 14]

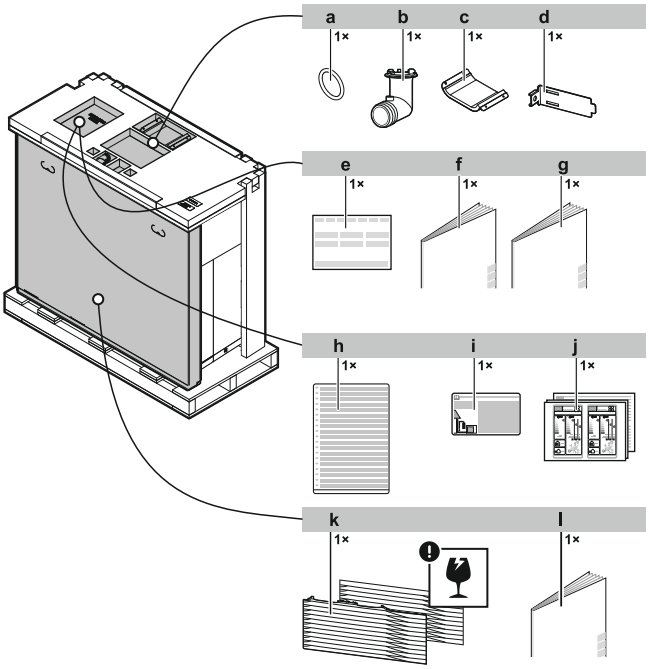
3 About the box

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

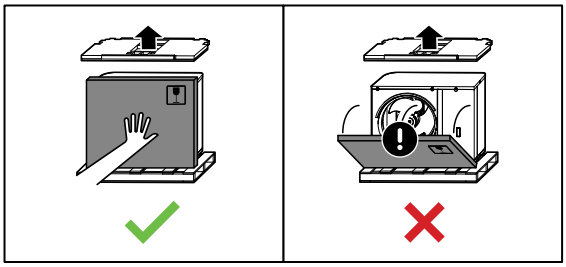
3.1.1 To remove the accessories from the outdoor unit



a O-ring for drain socket
b Drain socket
c Compressor cover piece
d Thermistor fixture (for installations in areas with low ambient temperatures)
e Declaration of conformity
f Installation manual – Outdoor unit
g Disposal manual – Recovering refrigerant
h Multilingual fluorinated greenhouse gases label
i Fluorinated greenhouse gases label
j Energy label
k Discharge grille (upper + lower part)
l 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

WARNING

Installation shall be done by an installer, the choice of materials and installation shall comply with the applicable legislation. In Europe, EN378 is the applicable standard.

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:

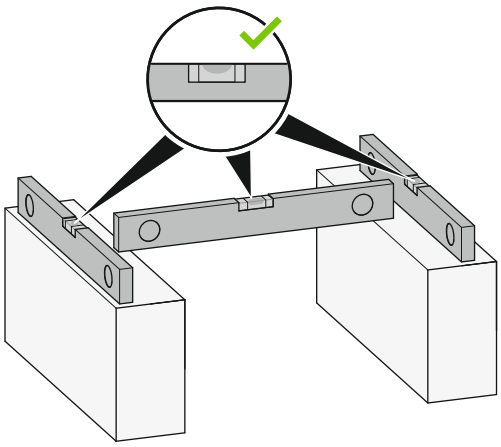
Cooling mode	10~43°C
Heating mode	–25~25°C

4.2 Mounting the outdoor unit

4.2.1 To provide the installation structure

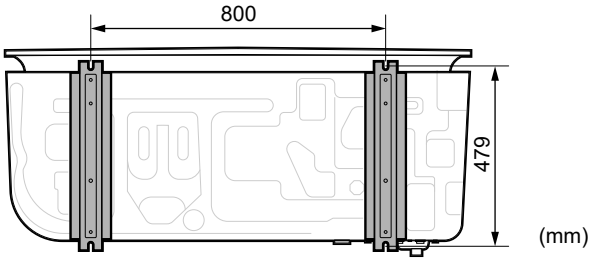
NOTICE

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



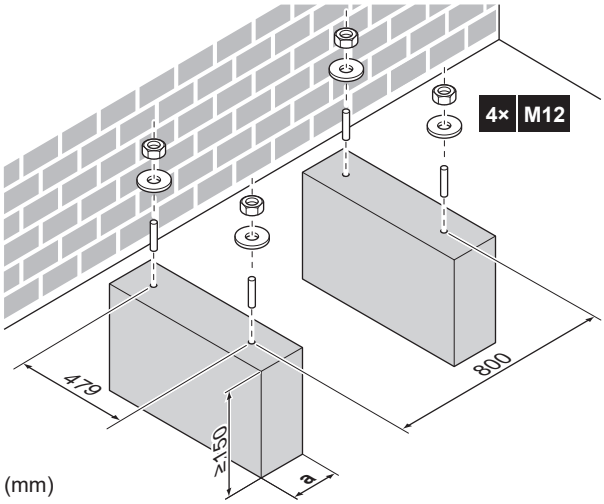
Use 4 sets of M12 anchor bolts, nuts and washers. Provide at least 150 mm of free space below the unit. Additionally, make sure the unit is positioned at least 100 mm above the maximum expected level of snow.

Anchor points



Pedestal

When installing on a pedestal, make sure that the discharge grille still can be put in its safety position. See "7.4 To remove the discharge grille, and put the grille in safety position" [▸ 14].



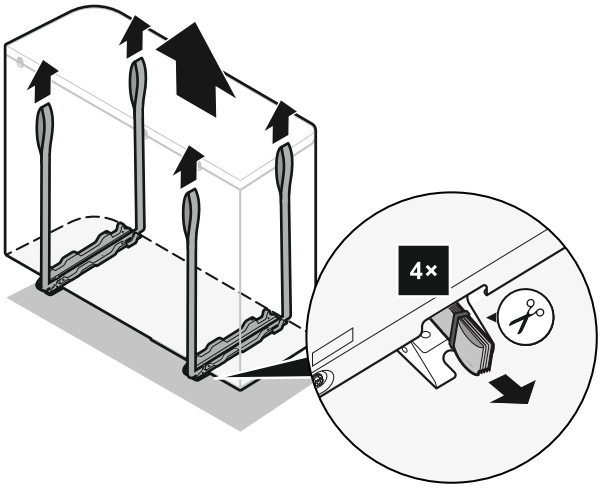
a Make sure not to cover the drain hole in the bottom plate of the unit.

4.2.2 To install the outdoor unit

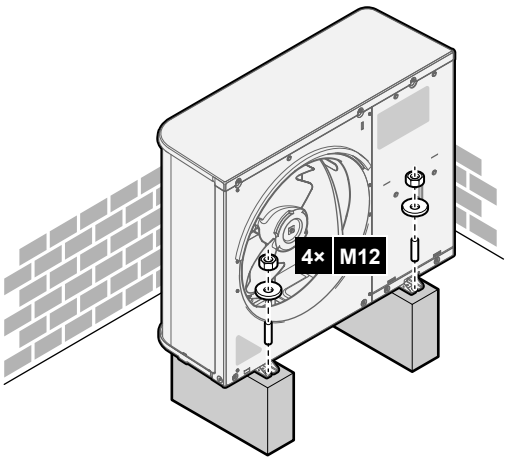
CAUTION

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

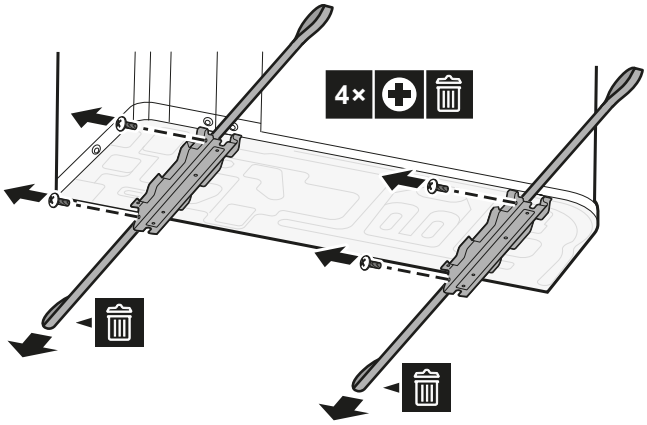
1 Carry the unit by its slings, and put it onto the installation structure.



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 to prevent freezing condensate from affecting the unit or its surroundings negatively. We recommend the following:

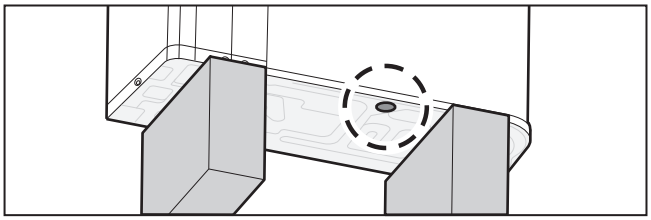
- If a drain hose is required: Prevent condensate freeze up in the drain hose with a field supply drain hose heater with thermostat (external power supply). Insulate the drain hose.
- If no drain hose is required: Make sure condensate which drains from the unit and freezes does not damage the surroundings of the unit or create slippery ice patches.

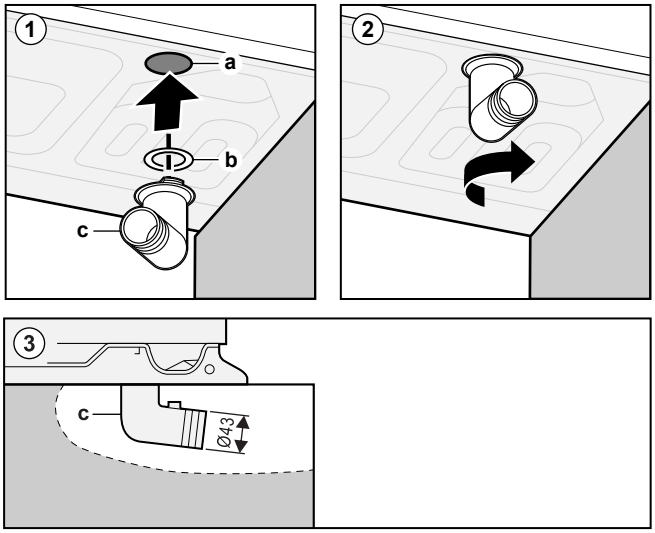
⇨ In both cases the drain plug must be installed.

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) for drainage.





a Drain hole
b O-ring (delivered as accessory)
c Drain plug (delivered as accessory)

NOTICE

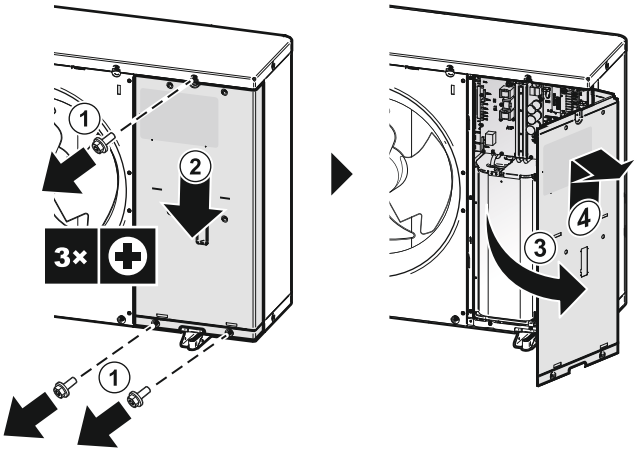
O-ring. Make sure the O-ring is installed correctly to prevent leakage.

4.3 To open the outdoor unit

DANGER: RISK OF ELECTROCUTION

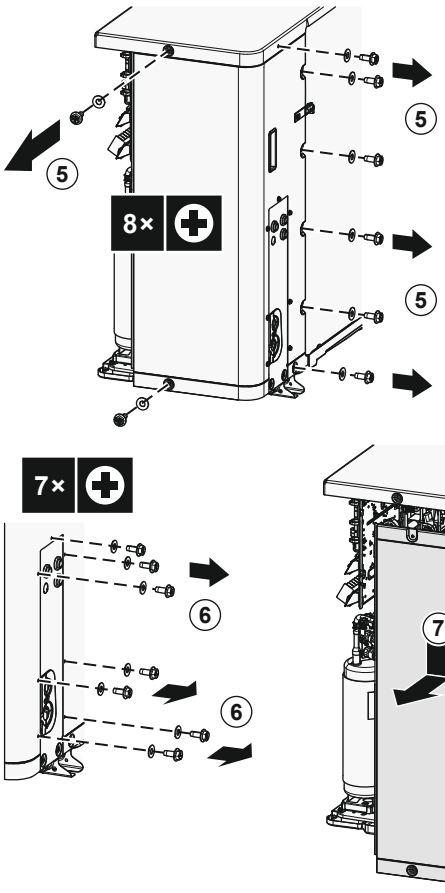
DANGER: RISK OF BURNING/SCALDING

1 Open the service cover.



2 If necessary, open the side cover. This is, for example, necessary in the following cases:

- When connecting the refrigerant piping.
- When checking the refrigerant piping.
- When charging refrigerant.
- When recovering refrigerant.

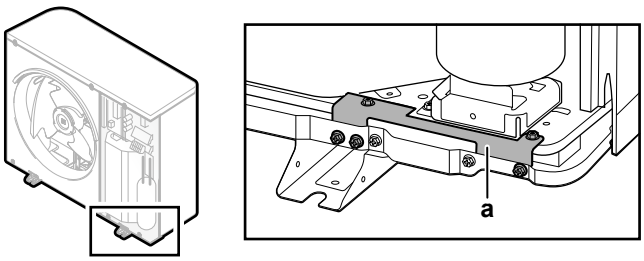


4.4 To remove the transportation stay

NOTICE

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

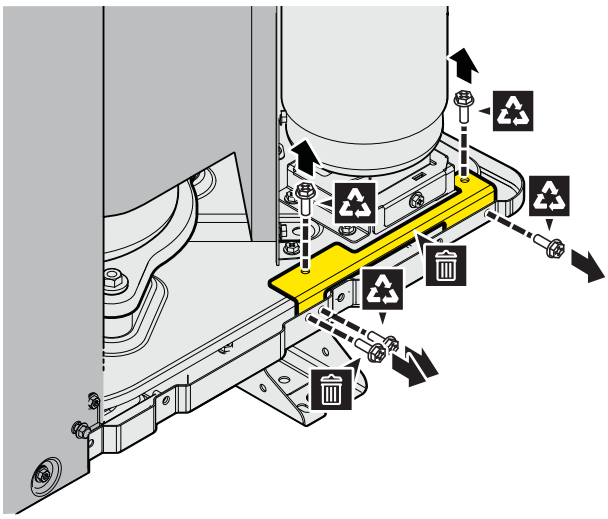
The transportation stay protects the unit during transport. During installation it must be removed.



a Transportation stay

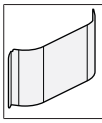
1 Open the service cover. See "4.3 To open the outdoor unit" [▶ 7].

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" [▶ 8]).

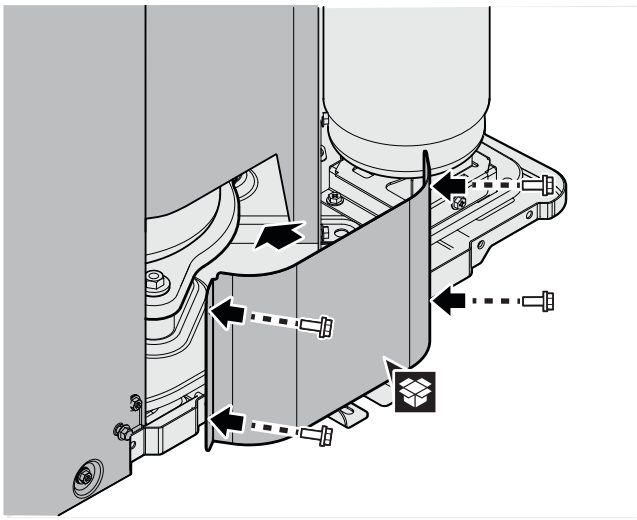


4.5 To attach the compressor cover piece

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 the refrigerant piping

DANGER: RISK OF BURNING/SCALDING

NOTICE

Vibration. To prevent vibration of the refrigerant piping during operation, fixate the piping between the outdoor and indoor unit.

NOTICE

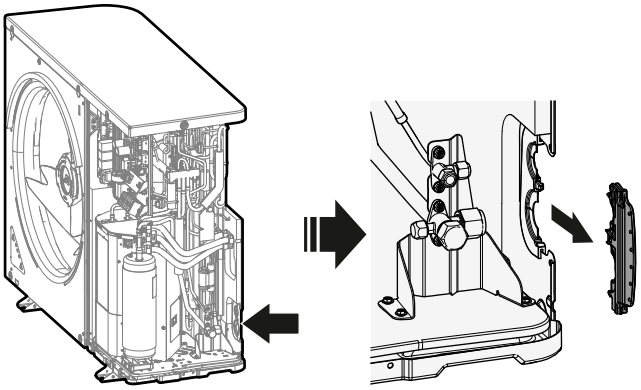
Vibration. To prevent vibration noise of the rubber grommet during operation, make sure the rubber grummet is not deformed by refrigerant piping. Insert refrigerant piping into the outdoor unit as straight as possible. If necessary, ensure that piping bends are not placed close to the rubber grommet.

5.1.1 To connect the refrigerant piping to the outdoor unit

- **Piping length.** Keep field piping as short as possible.
- **Piping protection.** Protect the field piping against physical damage.

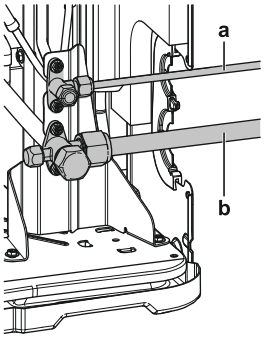
1 Open the outdoor unit step 1 and 2 ("4.3 To open the outdoor unit" [▶ 7]).

2 Detach the outer side of the rubber grommet.



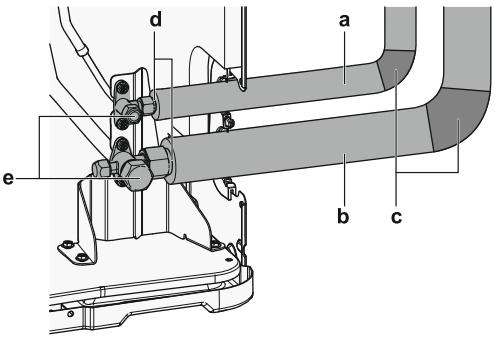
3 Do the following:

- Connect the liquid pipe (a) to the liquid stop valve.
- Connect the gas pipe (b) to the gas stop valve.



4 Do the following:

- Insulate the liquid piping (a) and the gas piping (b). Also inside the outdoor unit.
- Wind heat insulation around the curves, and then cover it with vinyl tape (c).
- Make sure the field piping does not touch any compressor components.
- Seal the insulation ends (sealant etc.) (d).

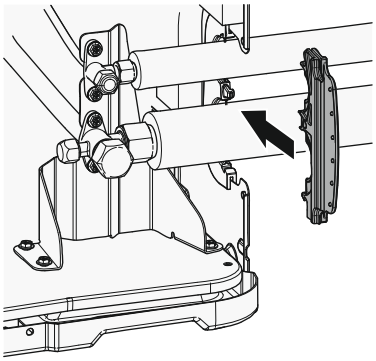


5 If the outdoor unit is installed above the indoor unit, cover the stop valves (e, see above) with sealing material to prevent condensed water on the stop valves from moving to the indoor unit.

NOTICE

Any exposed piping can cause condensation.

6 Reattach the outer side of the rubber grommet.



WARNING

Provide adequate measures to prevent that the unit can be used as a shelter by small animals. Small animals that make contact with electrical parts can cause malfunctions, smoke or fire.

NOTICE

Make sure to open the stop valves after installing the refrigerant piping and performing vacuum drying. Running the system with the stop valves closed may break the compressor.

5.2 Checking the refrigerant piping

5.2.1 To check for leaks

NOTICE

Do NOT exceed the unit's maximum working pressure (see "PS High" on the unit name plate).

NOTICE

ALWAYS use a recommended bubble test solution from your wholesaler.

NEVER use soap water:

- Soap water may cause cracking of components, such as flare nuts or stop valve caps.
- Soap water may contain salt, which absorbs moisture that will freeze when the piping gets cold.
- Soap water contains ammonia which may lead to corrosion of flared joints (between the brass flare nut and the copper flare).

1 Charge the system with nitrogen gas up to a gauge pressure of at least 200 kPa (2 bar). It is recommended to pressurize to 3000 kPa (30 bar) in order to detect small leaks.

2 Check for leaks by applying the bubble test solution to all connections.

3 Discharge all nitrogen gas.

5.2.2 To perform vacuum drying

NOTICE

- Connect the vacuum pump to **both** the service port of the gas stop valve and the service port of the liquid stop valve to increase efficiency.
- Make sure that the gas stop valve and liquid stop valve are firmly closed before performing the leak test or vacuum drying.

1 Vacuum the system until the pressure on the manifold indicates −0.1 MPa (−1 bar).

2 Leave as is for 4-5 minutes and check the pressure:

If the pressure…	Then…
Does not change	There is no moisture in the system. This procedure is finished.
Increases	There is moisture in the system. Go to the next step.

3 Vacuum the system for at least 2 hours to a manifold pressure of −0.1 MPa (−1 bar).

4 After turning the pump OFF, check the pressure for at least 1 hour.

5 If you do NOT reach the target vacuum or CANNOT maintain the vacuum for 1 hour, do the following:

- Check for leaks again.
- Perform vacuum drying again.

NOTICE

Make sure to open the stop valves after installing the refrigerant piping and performing vacuum drying. Running the system with the stop valves closed may break the compressor.

5.3 Charging refrigerant

5.3.1 To determine the additional refrigerant amount

If the total liquid piping length is…	Then…
≤10 m	Do NOT add additional refrigerant.
>10 m	R=(total length (m) of liquid piping–10 m)×0.020 R=Additional charge (kg) (rounded in units of 0.01 kg)

INFORMATION

Piping length is the one-way length of liquid piping.

5.3.2 To charge additional refrigerant

WARNING

- Only use R32 as refrigerant. Other substances may cause explosions and accidents.
- R32 contains fluorinated greenhouse gases. Its global warming potential (GWP) value is 675. Do NOT vent these gases into the atmosphere.
- When charging refrigerant, ALWAYS use protective gloves and safety glasses.

Prerequisite: Before charging refrigerant, make sure the refrigerant piping is connected and checked (leak test and vacuum drying).

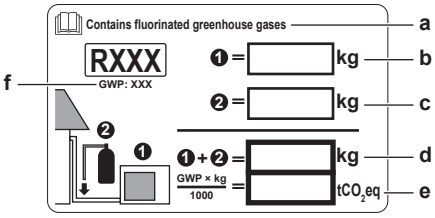
1 Connect the refrigerant cylinder to the service port of the gas stop valve.

2 Charge the additional refrigerant amount.

3 Open the stop valves.

5.3.3 To fix the fluorinated greenhouse gases label

1 Fill in the label as follows:



a If a multilingual fluorinated greenhouse gases label is delivered with the unit (see accessories), peel off the applicable language and stick it on top of **a**.
b Factory refrigerant charge: see unit name plate
c Additional refrigerant amount charged
d Total refrigerant charge
e **Quantity of fluorinated greenhouse gases** of the total refrigerant charge expressed as tonnes CO_2 equivalent.
f GWP = Global Warming Potential

NOTICE

Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO_2 equivalent.

Formula to calculate the quantity in CO_2 equivalent tonnes: GWP value of the refrigerant × total refrigerant charge [in kg] / 1000

Use the GWP value mentioned on the refrigerant charge label.

2 Fix the label on the inside of the outdoor unit. There is a dedicated place for it on the wiring diagram label.

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:

- "7.3 To install the discharge grille" [▶ 13]
- "7.4 To remove the discharge grille, and put the grille in safety position" [▶ 14]

WARNING

ALWAYS use multicore cable for power supply cables.

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.

NOTICE

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

6.1 About electrical compliance

Only for ERRA08~12E▲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 mm^2	
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 mm^2	
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%
M4 (earth)	

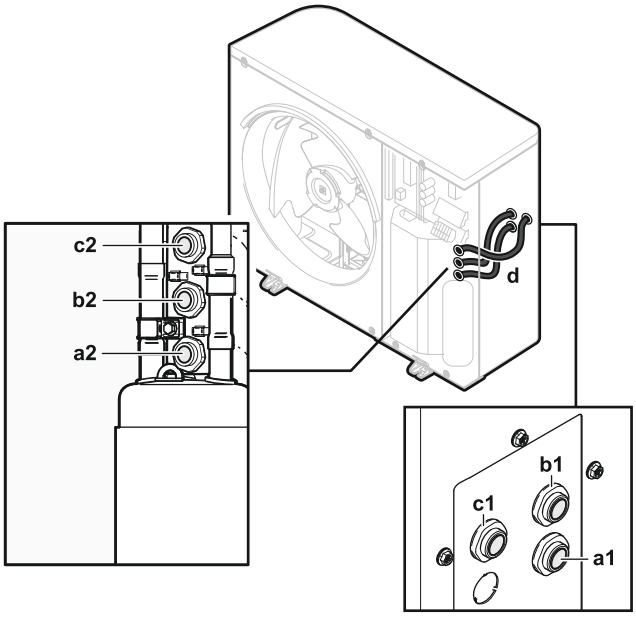
6.4 To connect the electrical wiring to the outdoor unit

NOTICE

- Follow the wiring diagram (delivered with the unit, located at the inside of the service cover).
- Make sure the electrical wiring does NOT obstruct proper reattachment of the service cover.

1 Open the service 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 No use
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:

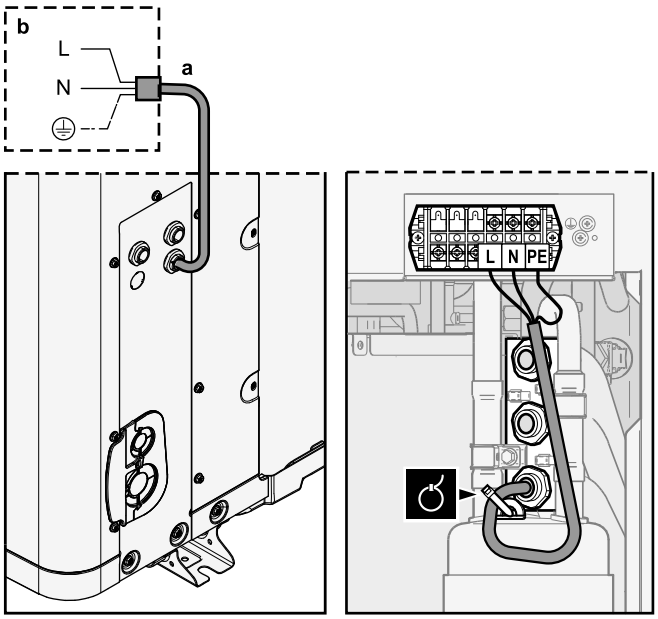
- "6.4.1 In case of V3 models" [▸ 11]
- "6.4.2 In case of W1 models" [▸ 12]

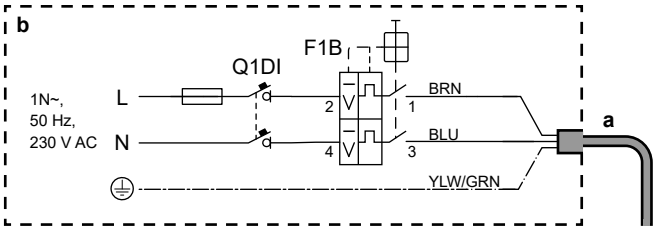
6.4.1 In case of V3 models

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.
	—



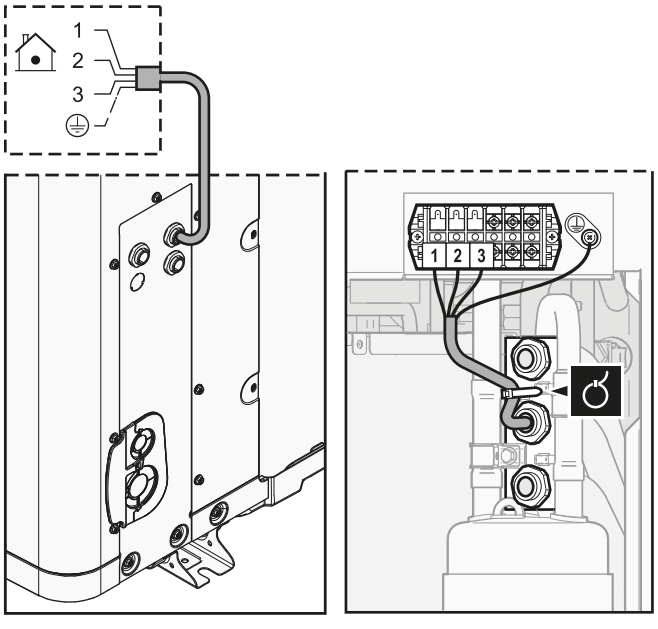


a Power supply cable (field supply)
b Field wiring
F1B Overcurrent fuse (field supply). Recommended fuse: 2 pole, 32 A fuse, C curve.
Q1DI Earth leakage circuit breaker (30 mA)(field supply)

2 **Interconnection cable** (indoor↔outdoor):

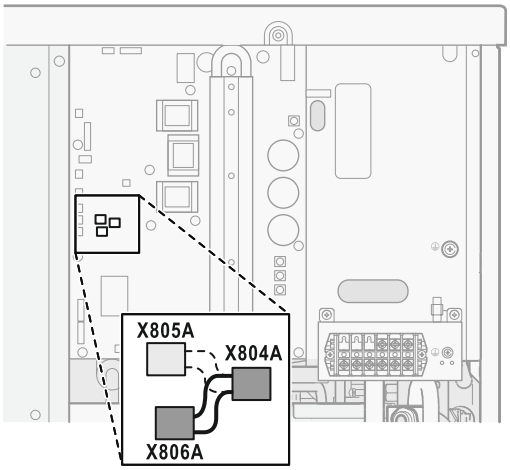
- Route the cable through the frame.
- Connect the wires to the terminal block (make sure the numbers match with the numbers on the indoor unit) and the earth screw.
- Fix the cable with a cable tie.

	Wires: (3+GND)×1.5 mm²
	—



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

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



INFORMATION

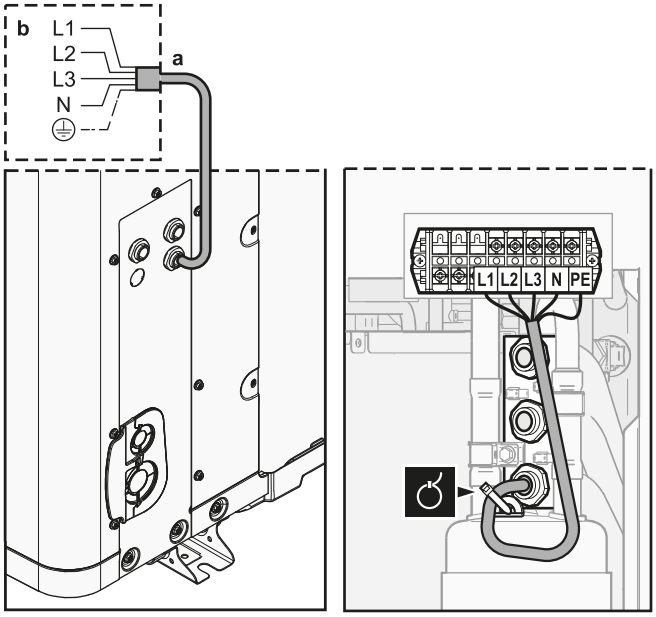
Power saving function. The power saving function is only applicable for V3 models. For more information about the power saving function ([9.F] or overview field setting [E-08]), see the installer reference guide.

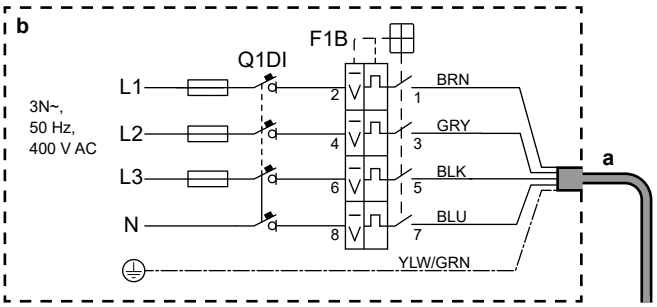
6.4.2 In case of W1 models

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.
	—



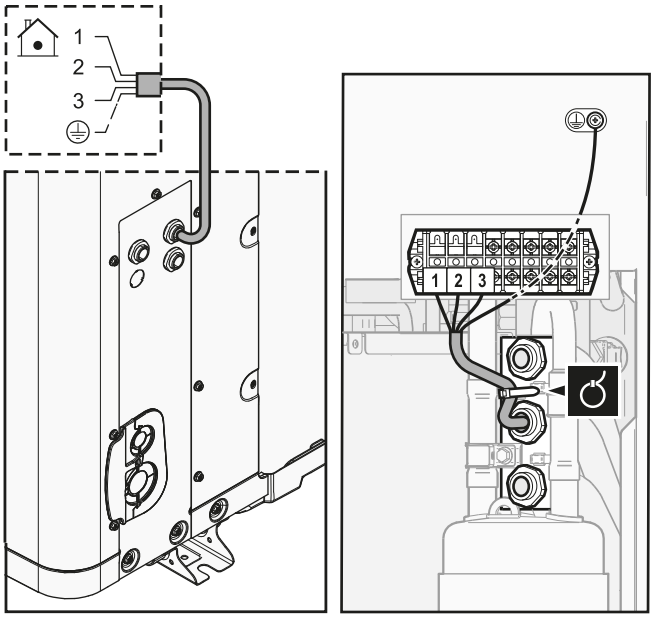


a Power supply cable (field supply)
b Field wiring
F1B Overcurrent fuse (field supply). Recommended fuse: 4 pole, 16 A or 20 A fuse, C curve.
Q1DI Earth leakage circuit breaker (30 mA)(field supply)

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
	—

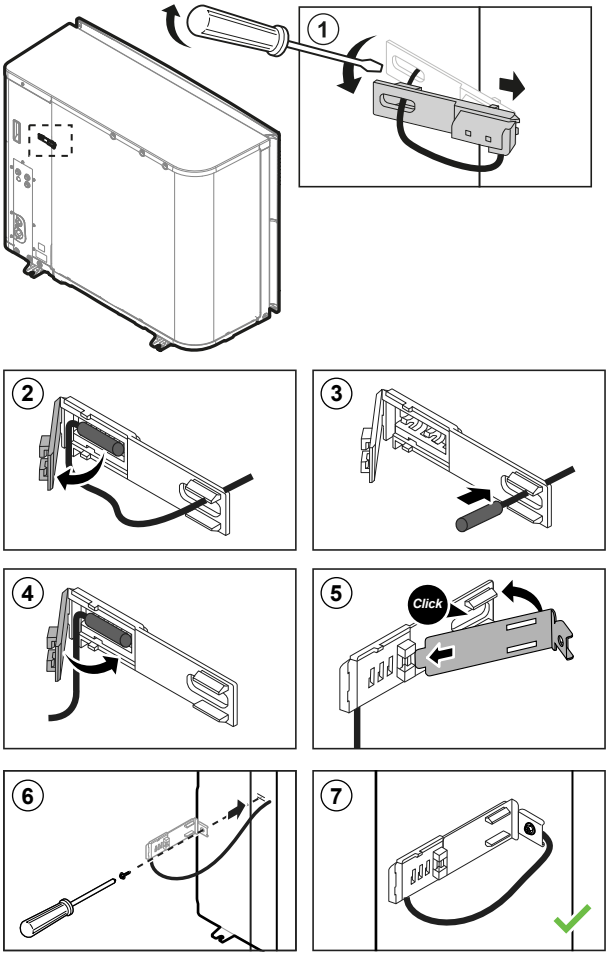


6.5 To reposition the air thermistor on the outdoor unit

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

Required accessory (delivered with the unit):

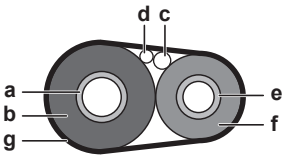
	Thermistor fixture.



7 Finishing the outdoor unit installation

7.1 Insulate and fix the refrigerant piping and cable

1 Insulate and fix the refrigerant piping and cables as follows:



- **a** Gas pipe
- **b** Gas pipe insulation
- **c** Interconnection cable
- **d** Field wiring (if applicable)
- **e** Liquid pipe
- **f** Liquid pipe insulation
- **g** Finishing tape

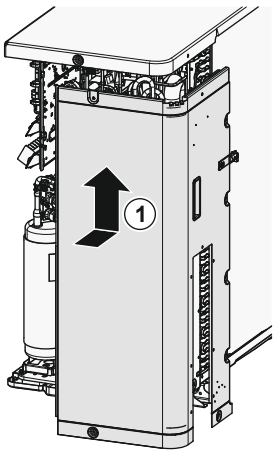
2 Install the service cover.

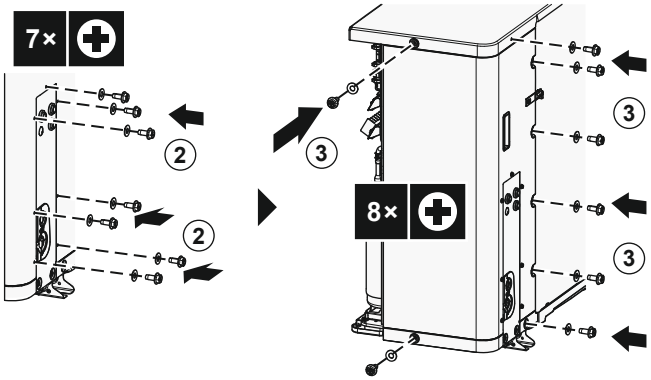
7.2 To close the outdoor unit

NOTICE

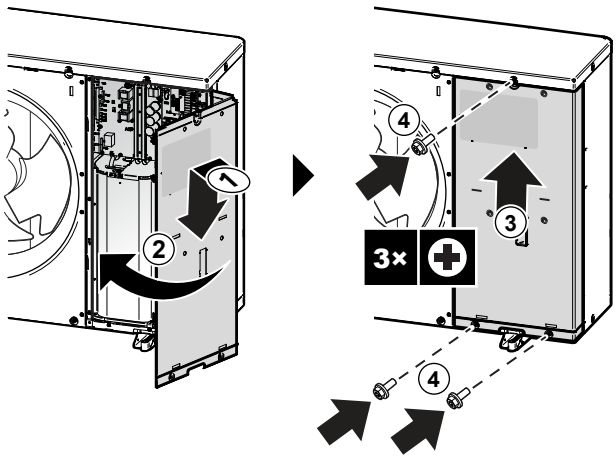
When closing the outdoor unit cover, make sure that the tightening torque does NOT exceed 4.1 N•m.

1 If necessary, close the side cover.





2 Close the service cover.

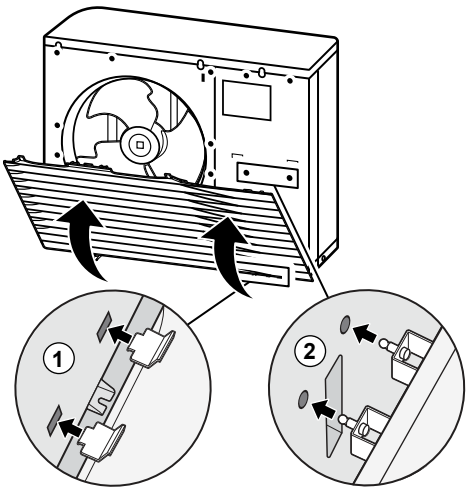


7.3 To install the discharge grille

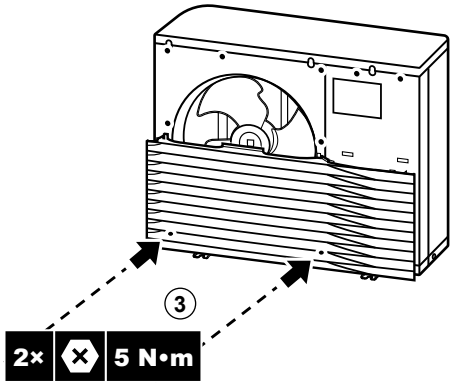
Install the lower part of the discharge grille

1 Insert the hooks.

2 Insert the ball studs.



3 Fix the 2 lower screws.



Install the upper part of the discharge grille

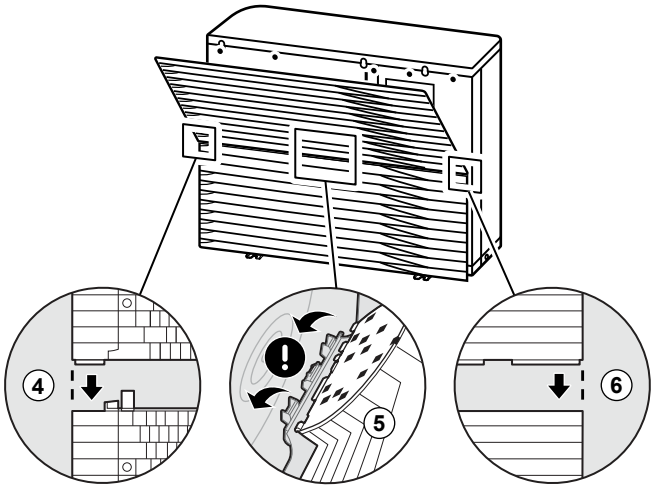
NOTICE

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.

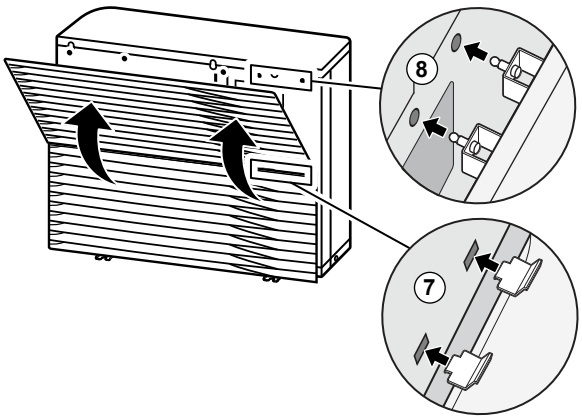
5 Align and attach the middle part.

6 Align and attach the right side.

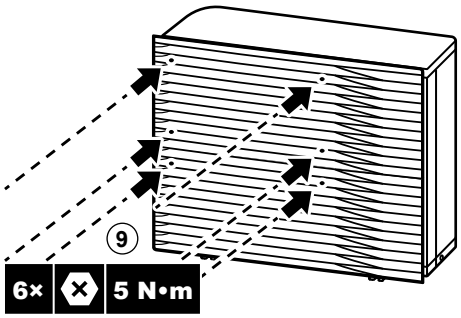


7 Insert the hooks.

8 Insert the ball studs.



9 Fix the 6 remaining screws.



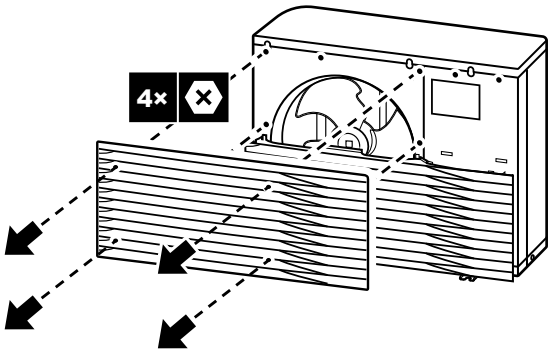
7.4 To remove the discharge grille, and put the grille in safety position

WARNING

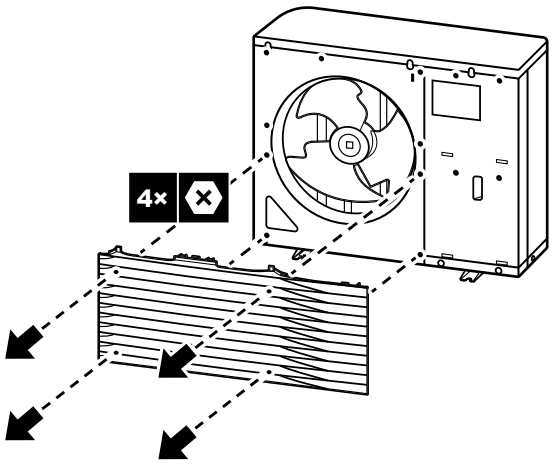
Rotating fan. Before powering ON or servicing the outdoor unit, make sure that the discharge grille covers the fan as protection against a rotating fan. See:

- "7.3 To install the discharge grille" [▸ 13]
- "7.4 To remove the discharge grille, and put the grille in safety position" [▸ 14]

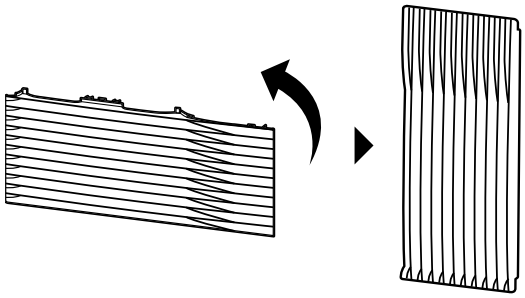
1 Remove the upper part of the discharge grille.



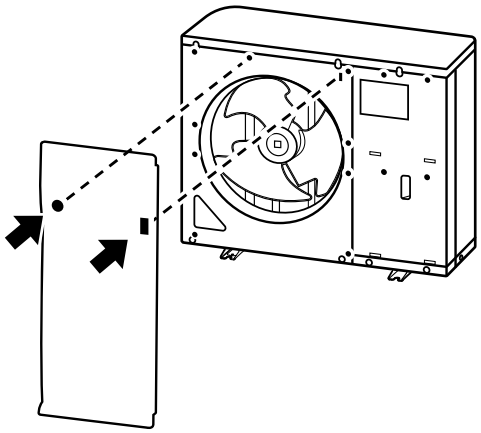
2 Remove the lower part of the discharge grille.



3 Rotate the lower part of the discharge grille.

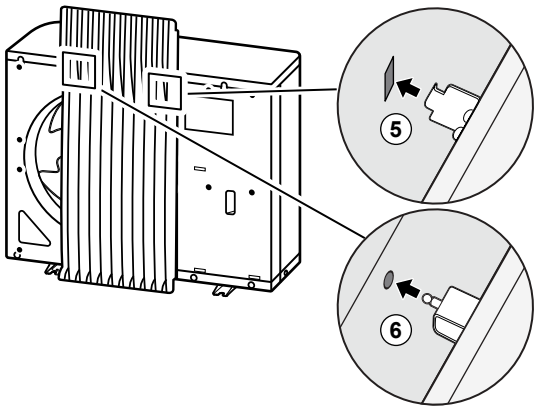


4 Align the ball stud and hook on the grille with their counterparts on the unit.



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

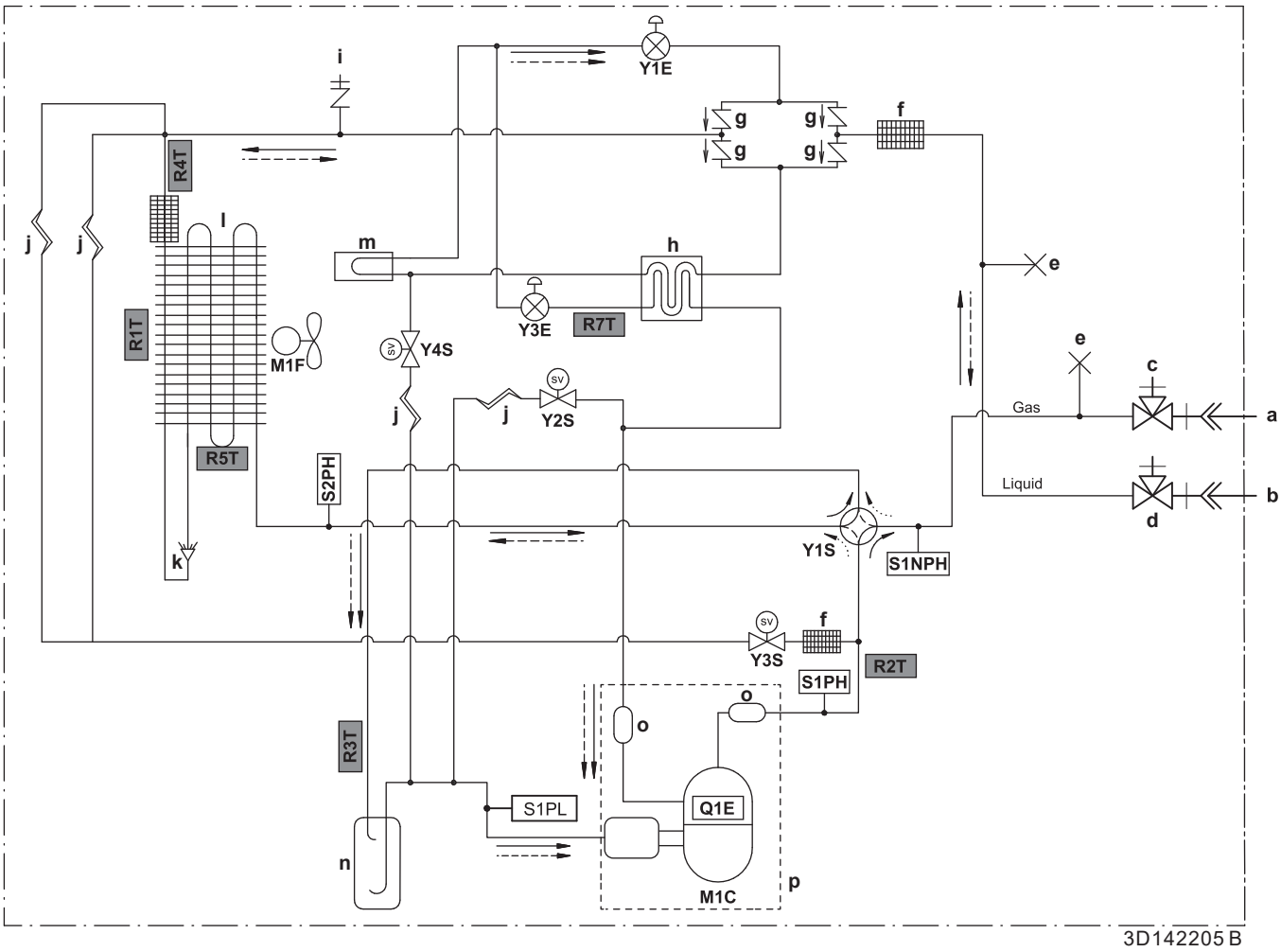
Rotating fan. Before powering ON or servicing the outdoor unit, make sure that the discharge grille covers the fan as protection against a rotating fan. See:

- "7.3 To install the discharge grille" [▸ 13]
- "7.4 To remove the discharge grille, and put the grille in safety position" [▸ 14]

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 Flare connection 5/8"
b Flare connection 1/4"
c Gas stop valve with service port
d Liquid stop valve
e Pinched pipe
f Refrigerant filter
g One-way valve
h Economiser heat exchanger
i Service port 5/16" flare
j Capillary tube
k Distributor
l Air heat exchanger
m PCB cooling
n Accumulator
o Muffler
p Casing
M1C Compressor
M1F Fan motor
S1PL Low pressure switch
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 protector

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
R7T Thermistor - injection

Refrigerant flow:
→ Heating
⇢ Cooling

9.2 Wiring diagram: Outdoor unit

The wiring diagram is delivered with the unit, located at the inside of the service cover.

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, S2PH and S1PL.	
5	Refer to the combination table and the option manual for how to connect the wiring to X5A[(a)], X77A[(a)] and X41A.	
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)
BS1~BS3 (A1P)	Push button switch
C1~C7 (A1P)	Capacitor
DS1 (A1P)	DIP switch
F1U	Field fuse (field supply)
F1U~F4U (A2P)	Fuse (T 6.3 A / 250 V)
F5U (A1P)	Fuse (T 5.0 A / 250 V)
HAP (A1P)	Light-emitting diode (service monitor is green)
K1R (A1P)	Magnetic relay (Y1S)
K2R (A1P)	Magnetic relay (Y2S)
K3R (A1P)	Magnetic relay (Y3S)
K4R	Magnetic relay (Y4S)
K6R~K84R (A1P)	Magnetic relay
K1M~K2M (A1P)	Magnetic contactor
L1R~L5R (A1P, A2P)	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
R1~R9 (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)
R7T	Thermistor (injection)
R11T	Thermistor (fin)
RC (A1P)	Signal receiver circuit
S1NPH	High pressure sensor
S1PH, S2PH	High pressure switch
S1PL	Low 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	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)
A5P	Printed circuit board (flash)
BS1~BS4 (A1P)	Push button switch
C1~C4 (A1P, A2P)	Capacitor
DS1 (A1P)	DIP switch
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)
K2R (A1P)	Magnetic relay (Y2S)
K3R (A1P)	Magnetic relay (Y3S)
K4R (A1P)	Magnetic relay (Y4S)
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
Q1DI	Earth leakage circuit breaker (30 mA) (field supply)
R1~R5 (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)
R7T	Thermistor (injection)
R11T	Thermistor (fin)
RC (A2P)	Signal receiver circuit
S1NPH	High pressure sensor
S1PH, S2PH	High pressure switch
S1PL	Low 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	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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