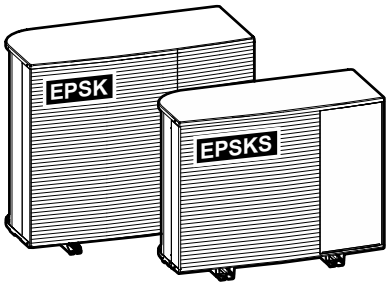
DAIKIN

altherma

https://daikintechnicaldatahub.eu

Installation manual

Daikin Altherma 4 H



EPSKS04A▲V3▼
EPSKS06A▲V3▼
EPSKS07A▲V3▼

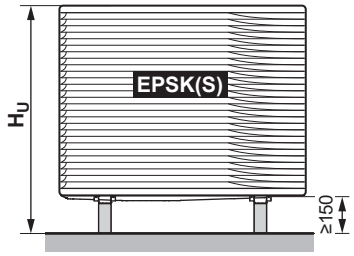
EPSK06A▲V3▼
EPSK08A▲V3▼
EPSK10A▲V3▼

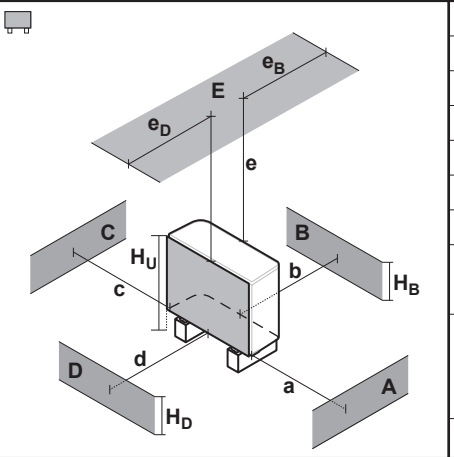
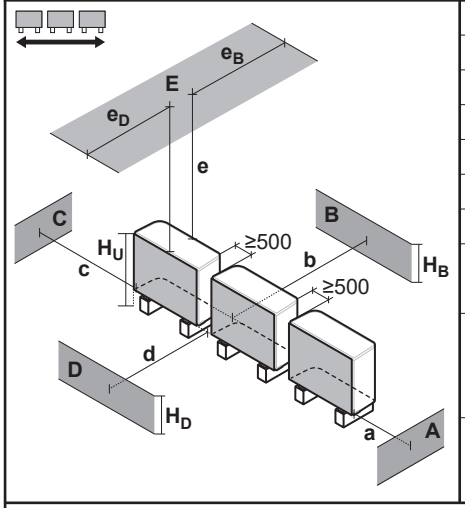
EPSK08A▲W1▼
EPSK10A▲W1▼
EPSK12A▲W1▼
EPSK14A▲W1▼

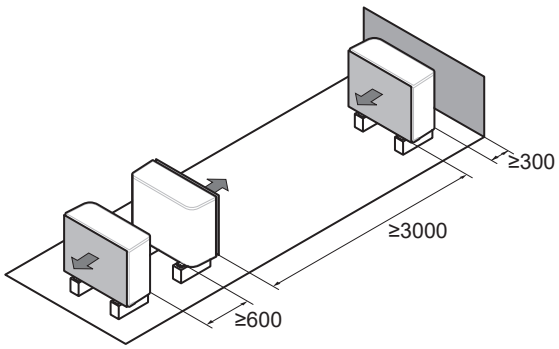
▲= 1, 2, 3, …, 9, A, B, C, …, Z
▼= , , 1, 2, 3, …, 9

Installation manual
Daikin Altherma 4 H

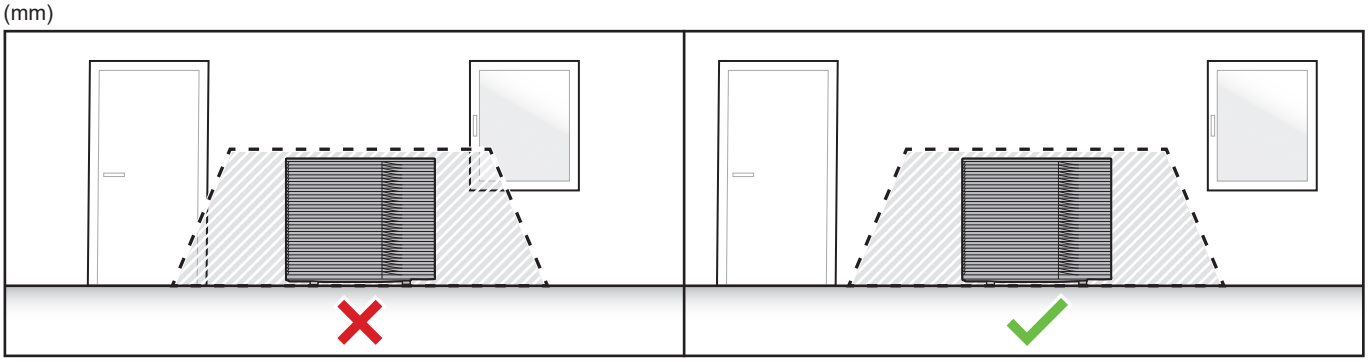
English

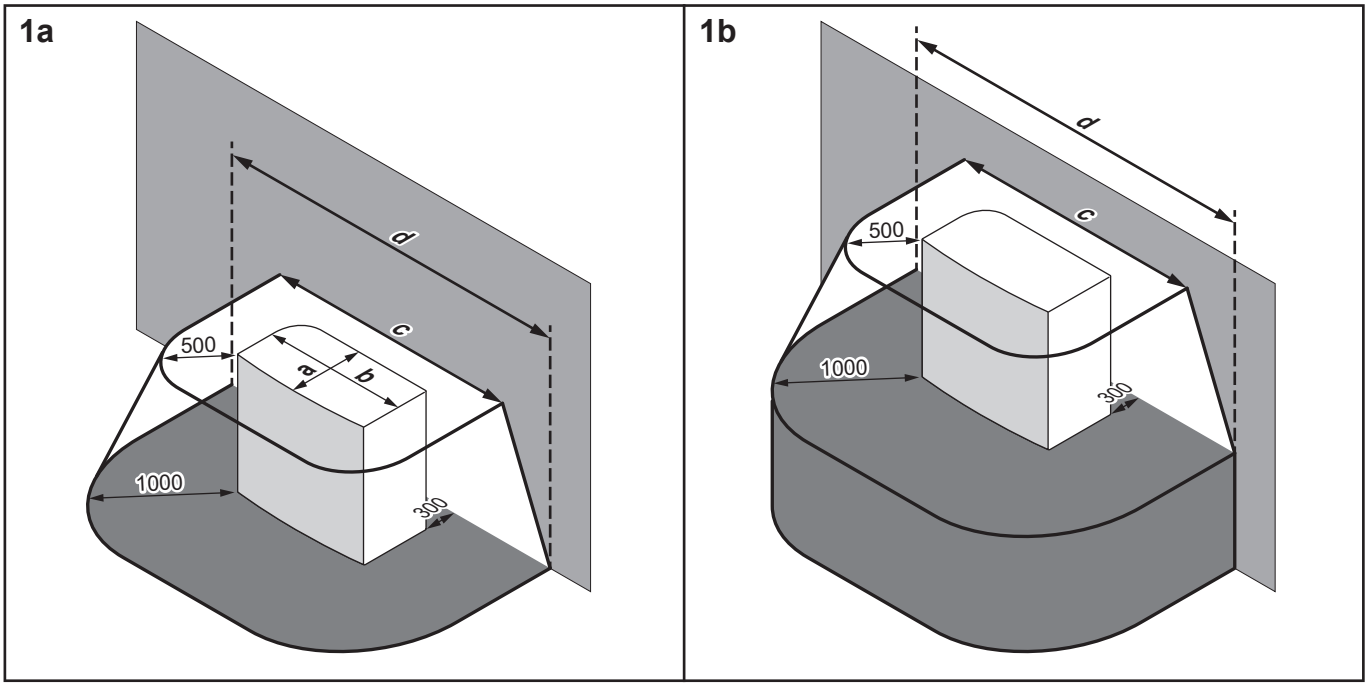


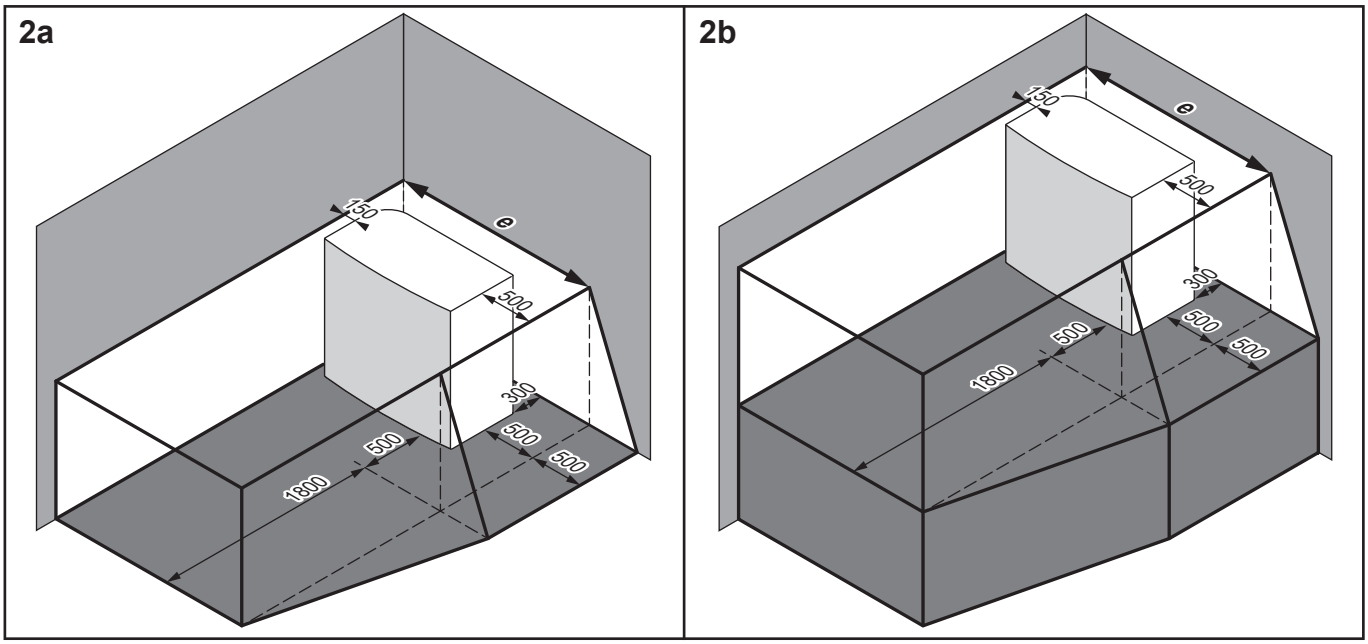
A~E	H_B H_D H_U		(mm)						
			a	b	c	d	e	e_B	e_D
	B	—		≥300					
	A, B, C	—	≥500	≥300	≥100				
	B, E	—		≥300			≥1000		≤500
	A, B, C, E	—	≥500	≥300	≥150		≥1000		≤500
	D	—				≥500			
	D, E	—				≥500	≥1000	≤500	
	A, C	—	≥500		≥100				
	B, D	(H_B OR H_D) ≤ H_U		≥300		≥500			
		(H_B AND H_D) > H_U				✕			
	B, D, E	(H_B OR H_D) ≤ H_U H_B>H_D		≥300		≥1000	≥1000		≤500
		(H_B OR H_D) ≤ H_U H_B<H_D		≥300		≥1000	≥1000	≤500	
		(H_B AND H_D) > H_U				✕			
	A, C, D, E	—	≥500		≥150	≥500	≥1000	≤500	
	B	—		≥300					
	A, B, C	—	≥500	≥300	≥500				
	B, E	—		≥300			≥1000		≤500
	A, B, C, E	—	≥500	≥300	≥500		≥1000		≤500
	D	—				≥500			
	D, E	—				≥500	≥1000	≤500	
	A, C	—	≥500		≥500				
	B, D	(H_B OR H_D) ≤ H_U		≥300		≥500			
		(H_B AND H_D) > H_U				✕			
	B, D, E	(H_B OR H_D) ≤ H_U H_B>H_D		≥300		≥1000	≥1000		≤500
		(H_B OR H_D) ≤ H_U H_B<H_D		≥300		≥1000	≥1000	≤500	
		(H_B AND H_D) > H_U				✕			
	A, C, D, E	—	≥500		≥500	≥500	≥1000	≤500	



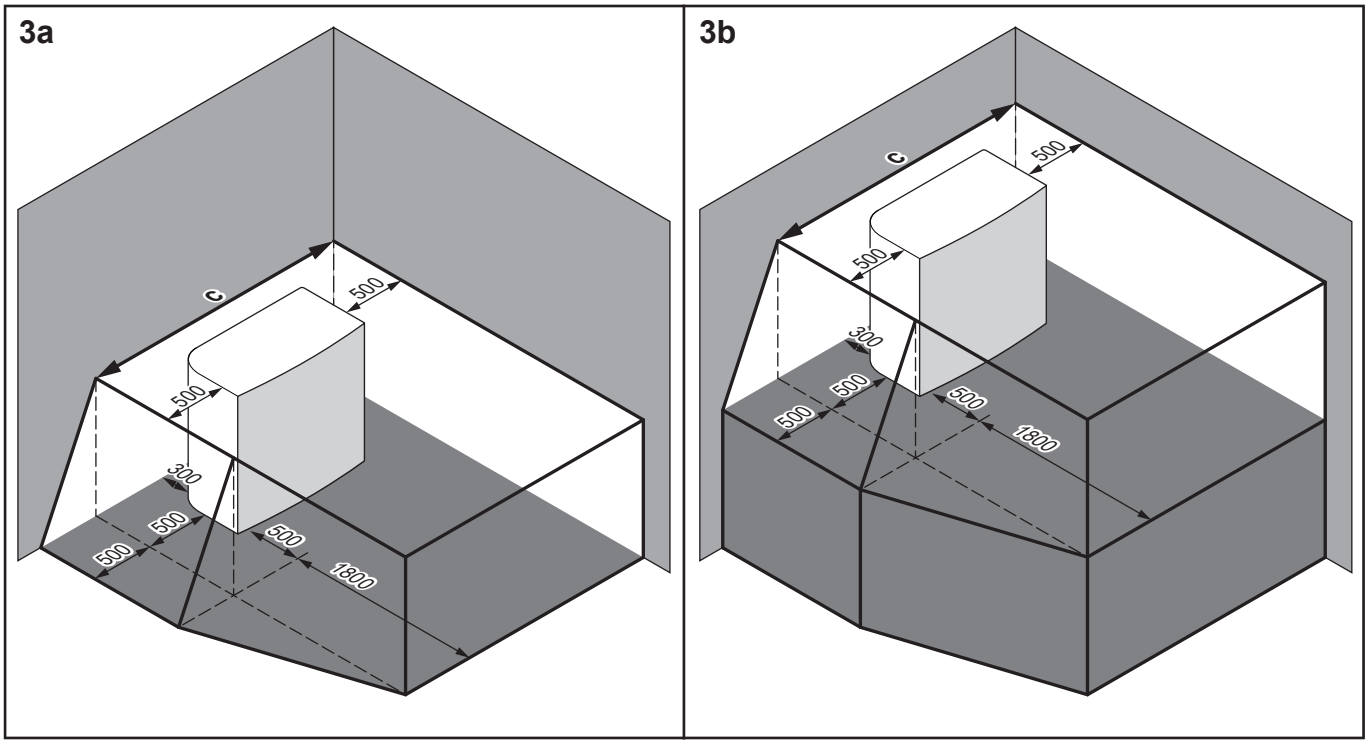
(mm)

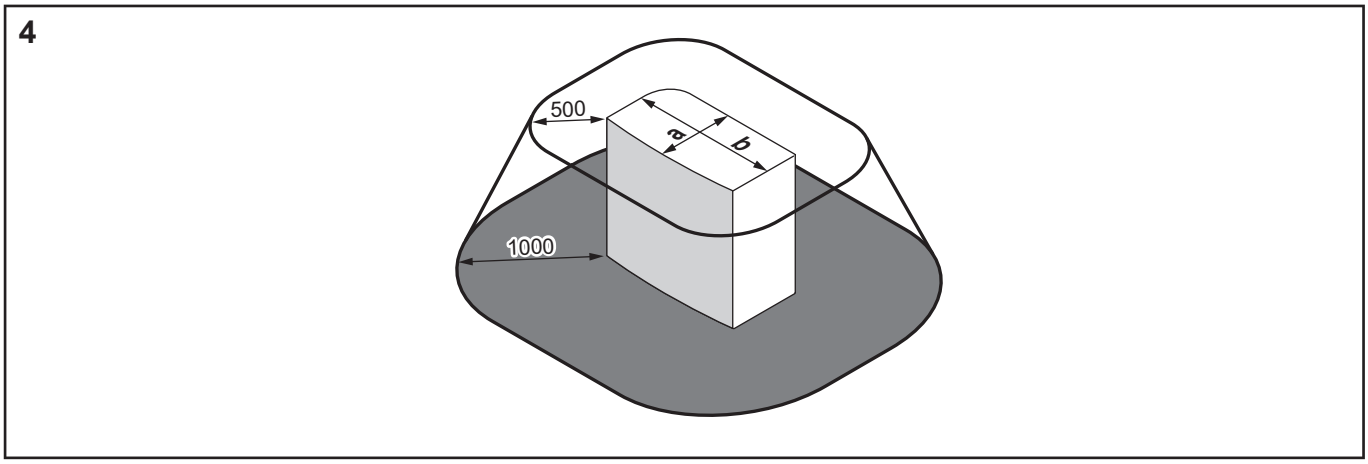






	a	b	c	d	e
EPSKS04~07A*	535	1215	2215	3215	1815
EPSK06~14A*	604	1330	2330	3330	1980





	a	b	c
EPSKS04~07A*	535	1215	2215
EPSK06~14A*	604	1330	2330

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.
- **Configuration reference guide:**
  - Configuration of the system.
  - 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.
- **Daikin Altherma 4 Monitoring Tools**
  - A hub for tools that allow you to monitor and record the Daikin Altherma 4 operation data.
  - For more information, see Daikin Altherma 4 Monitoring Tools (https://my.daikin.eu/denv/en_US/library/applications/software-finder/service-software/service-and-diagnostic-tool/daikin-altherma-4-monitoring-tools0.html).
- **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.

!!Read this before you start the installation!!

Training

- Before you start the installation, follow the Daikin L1 Safety Training (see QR code). Without this training you cannot unlock the outdoor unit (via the e-Care app and the user interface of the indoor unit) and you cannot start operation of the unit.

Personal safety protection tools

- Make sure suitable tooling and work materials are available.

Installation location

- Bring the unit on its pallet as close as possible (≤10 m) to its installation location. Use the slings only to lift the unit from the pallet, and put it in the final installation position.
- Respect the installation location guidelines.
- Respect the protective zone around the outdoor unit (no ignition sources).
- Take a picture of the installed outdoor unit and its environment. You will have to upload it during the unlocking procedure of the outdoor unit.

Hand-over to the user

- Explain to the user how to safely use the R290 heat pump.
- Explain to the user to NOT turn OFF the circuit breakers to the units so that the protection remains activated.

Water quality

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

Earth leakage circuit breaker

- Make sure to install an earth leakage circuit breaker.

Installation site (see "4.1 Preparing the installation site" [▸ 8])

WARNING

Follow the "service space" and "protective zone" dimensions in this manual to install the unit correctly. See "4.1.1 Installation site requirements of the outdoor unit" [▸ 8].

WARNING

The appliance shall be stored in a room without ignition sources (neither permanent ignition sources nor ignition sources for a short period of time) (example: open flames, an operating gas appliance or an operating electric heater).

WARNING

The appliance shall be installed in an area without ignition sources (neither permanent ignition sources nor ignition sources for a short period of time) (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" [▸ 9])

WARNING

Fixing method of the outdoor unit MUST be in accordance with the instructions from this manual. See "4.2 Mounting the outdoor unit" [▸ 9].

CAUTION

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

Opening and closing the units (see "4.2 Mounting the outdoor unit" [▸ 9])

DANGER: RISK OF ELECTROCUTION

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

DANGER: RISK OF BURNING/SCALDING

Piping installation (see "5 Piping installation" [▸ 13])

WARNING

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

WARNING

Adding anti-freeze solutions (e.g. glycol) to the water is NOT allowed.

Electrical installation (see "6 Electrical installation" [▸ 14])

DANGER: RISK OF ELECTROCUTION

WARNING

Electrical wiring MUST be in accordance with the instructions from this manual. See "6 Electrical installation" [▸ 14].

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

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

WARNING

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

These can cause overheating, electric shock or fire.

CAUTION

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

WARNING

- 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 or incorrect earthing may cause electrical shocks.
- Install the required fuses or circuit breakers. See "6.2 Specifications of standard wiring components" [▸ 16].
- 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.

INFORMATION

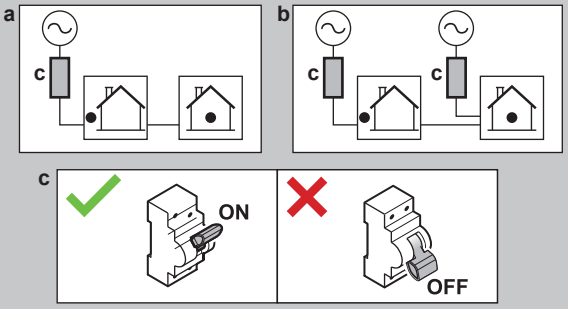
For details on the fuse ratings, the fuse types and the circuit breaker ratings, see "6 Electrical installation" [▸ 14].

WARNING

After commissioning, do NOT turn OFF the circuit breakers (**c**) to the units so that the protection remains activated.

In case of floor-standing or wall-mounted units: In case of normal kWh rate power supply (**a**), there is one circuit breaker. In case of preferential kWh rate power supply (**b**), there are two.

In case of ECH$_2$O units: In case of indoor unit supplied separately (**b**), there are two circuit breakers. In case of indoor unit supplied from the outdoor unit (**a**), there is one circuit breaker.



Commissioning (see "7 Starting up the outdoor unit" [▸ 18])

WARNING

Do NOT open the stop valve of the outdoor unit's refrigerant vessel until instructed by the user interface of the indoor unit.

For safe transportation, almost all refrigerant is stored in the refrigerant vessel of the outdoor unit. During commissioning, when performing the unlocking procedure of the outdoor unit (via the e-Care app and the user interface of the indoor unit), the stop valve of the refrigerant vessel must be fully opened (when instructed by the user interface) and remain open.

For more information, see the indoor unit installation manual.

2.1 Safety checklist before work on R290 units

INFORMATION

- For a more detailed description of the safety items in this checklist, see the General Safety Precautions.
- For more information about "Systems using R290 refrigerant", see the dedicated Service Manual ESIE22-02 (available on https://my.daikin.eu).

The outdoor unit contains R290 refrigerant. Before starting work on this unit, check the following safety items:

☐	Work permit obtained if required.
☐	All persons involved have been trained and are wearing/ carrying the required personal protective equipment.
☐	Work zone cordoned off, CAUTION signs installed.
☐	Ignition sources removed ▪ Remove power tools, computers, cell phones and other potential ignition sources that can cause sparks from the work area. ▪ Take protective measures to prevent static discharge, for example grounding and antistatic clothing.
☐	Suitable tooling and work materials available ▪ Including ATEX tooling (explosion proof), sufficient nitrogen and required spare parts.
☐	Check for the presence of an explosive atmosphere by placing a personal gas monitoring system on the floor, near the unit. ▪ Suitable for R290 ▪ Calibrated ▪ Operation test ▪ Alarm thresholds ▪ Battery charged
☐	Sufficient ventilation ▪ Place a portable ventilation unit to create sufficient ventilation. ▪ The ventilation unit must be explosion proof.
☐	Fire extinguisher at hand ▪ ABC dry powder or CO_2 extinguisher, minimal 2 kg.
☐	Disconnect and secure the unit from the power supply. ▪ Place lockout-tagout (LOTO).
☐	Perform a Last Minute Risk Assessment (LMRA).

3 About the box

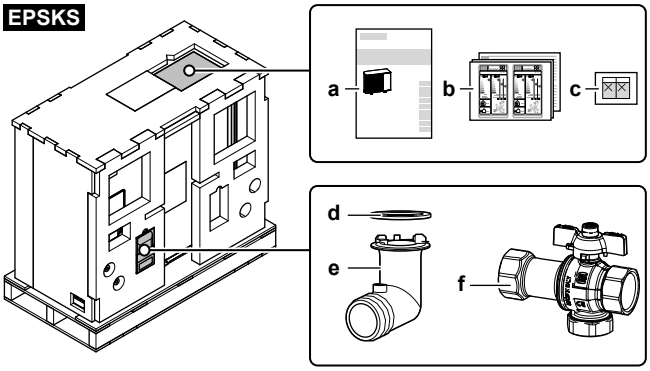
Keep the following in mind:

- 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

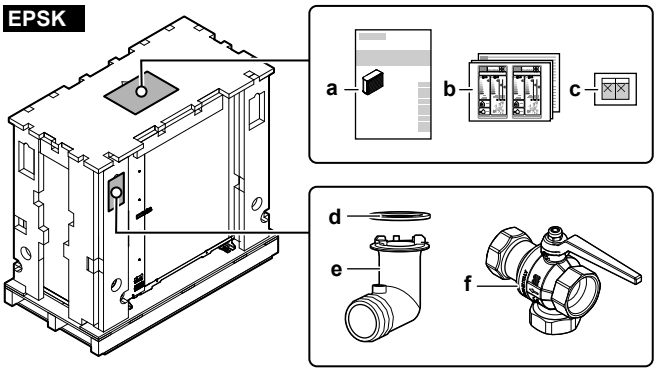
3.1.1 To remove the accessories from the outdoor unit

In case of EPSKS04~07A*:



a Installation manual – Outdoor unit
b Energy label
c "Do NOT turn OFF the circuit breaker" stickers
d O-ring for drain socket
e Drain socket
f Shut-off valve (with integrated filter and check valve)

In case of EPSK06~14A*:



a Installation manual – Outdoor unit
b Energy label
c "Do NOT turn OFF the circuit breaker" stickers
d O-ring for drain socket
e Drain socket
f Shut-off valve (with integrated filter and check valve)

4 Unit installation

4.1 Preparing the installation site

WARNING

The appliance shall be stored in a room without ignition sources (neither permanent ignition sources nor ignition sources for a short period of time) (example: open flames, an operating gas appliance or an operating electric heater).

WARNING

The appliance shall be installed in an area without ignition sources (neither permanent ignition sources nor ignition sources for a short period of time) (example: open flames, an operating gas appliance or an operating electric heater).

NOTICE

The gas sensor in the outdoor unit, designed to detect R290 refrigerant leaks, is also sensitive to various other gases. To ensure accurate detection and prevent interference, keep the following substances away from the unit:

- Silicone glue, organic solvents, chlorine-based gases, alkali metals, and other inorganic compounds.
- Aromatic compounds such as benzene, toluene, and ortho-/para-xylene.

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.

4.1.1 Installation site requirements of the outdoor unit

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
Domestic hot water production	Up to 40°C

Make sure to comply with the following guidelines:

- Choose an installation location with sufficient space.
- Do NOT install the unit in locations often used as work location.
- Do NOT install the unit in locations near a road or parking area where it can be damaged by passing traffic.
- Do NOT install the unit in a basement.
- Do NOT install the unit in sound sensitive areas (e.g. near a bedroom), so that the operation noise will cause no trouble. **Note:** If the sound is measured under actual installation conditions, the measured value might be higher than the sound pressure level mentioned in Sound spectrum in the data book due to environmental noise and sound reflections.
- Do NOT install the unit in locations where a mineral oil mist, spray or vapour may be present in the atmosphere. Plastic parts may deteriorate and fall off or cause water leakage.

NOTICE

The performance of an air-to-water heat pump is influenced by the ambient conditions. In particular, the exposure to wind would lead to loss in capacity and performance. Therefore:

- Install the outdoor unit so that the air inlet and outlet are perpendicular to the main wind direction.
- Daikin has developed specialised selection software that incorporates the wind impact factor to support the selection and confirmation of the appropriate product combination. As this factor is important, we strongly recommend using the Daikin selection software for every installation. Refer to the Heating Solutions Navigator (available at https://professional.standbyme.daikin.eu; contact your dealer if you do not have access).

Spacing guidelines. There are two sets of spacing guidelines:

- **Service space:** See **Figure 1** at the beginning of this manual. Legend:

General	Multiple outdoor units can be installed next to each other as shown in the rows: ▪  (side-to-side) ▪  (front-to-front / back-to-back) However, other units may only be installed in your unit's protective zone if they are of the same type (see "protective zone").
A, C	Right side and left side obstacles (walls/baffle plates)
B	Suction side obstacle (wall/baffle plate)
D	Discharge side obstacle (wall/baffle plate)
E	Top side obstacle (roof)
a,b,c,d,e	Minimum service space between the unit and obstacles A, B, C, D and E
e_B	Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle B
e_D	Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle D
H_U	Height of the unit including the installation structure
H_B,H_D	Height of obstacles B and D
✕	NOT allowed

- **Protective zone:** See **Figure 2** and **Figure 3** at the beginning of this manual. Legend:

General	The outdoor unit contains R290 refrigerant, which belongs to "Safety class A3" as defined in ISO817 and used in EN378. This means that you must comply with extra installation site requirements (= "protective zone") to ensure safety in the unlikely event of a refrigerant leak.
	Required for the protective zone:
	▪ No openings into habitable areas of the building. **Example:** openable windows, doors, ventilation openings, or basement entrances.
	▪ No ignition sources (neither permanently nor for a short period of time). **Example:**
	  ▪ Open flames
	  ▪ Electrical installations, sockets, lamps, light switches
	  ▪ Electrical house connections
	  ▪ Sparking tools
	  ▪ Objects with high surface temperatures (>360°C for R290)
	▪ The protective zone must NOT extend to adjacent buildings or public traffic areas.
	▪ Other units may only be installed in your unit's protective zone if they are of the same type (i.e. EPSK(S)). So, units of a different type, using a different refrigerant, or from another manufacturer are NOT allowed in your unit's protective zone. The combined protective zone of all units is then the addition of all individual protective zones.
	NOT required for the protective zone:
	▪ Complete open area in front of the unit.

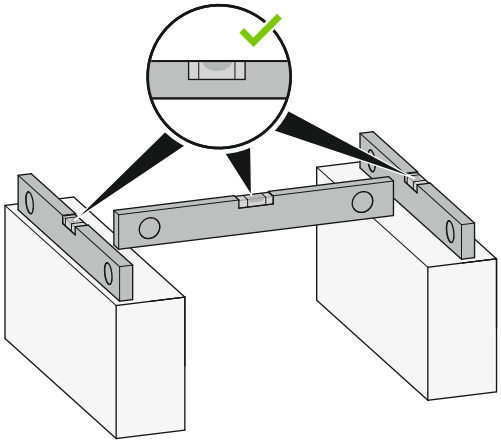
1a / 1b	Protective zone in front of a building: ▪ **1a**: on floor ▪ **1b**: elevated
2a / 2b	Protective zone for right corner installation: ▪ **2a**: on floor ▪ **2b**: elevated
3a / 3b	Protective zone for left corner installation: ▪ **3a**: on floor ▪ **3b**: elevated
4	Protective zone for on-roof installation. **Extra requirement:** No ventilation or skylight openings in the protective zone.

4.2 Mounting the outdoor unit

4.2.1 To provide the installation structure

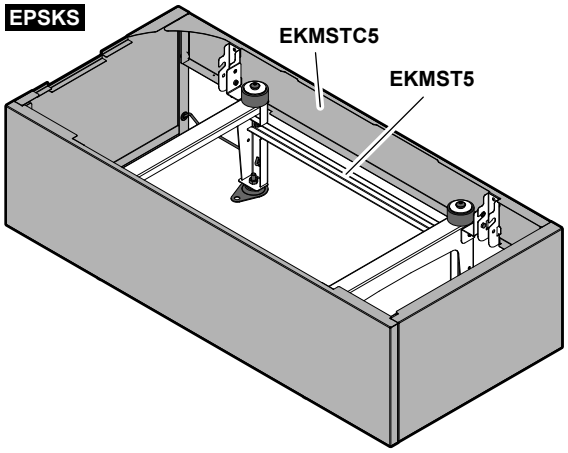
NOTICE

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



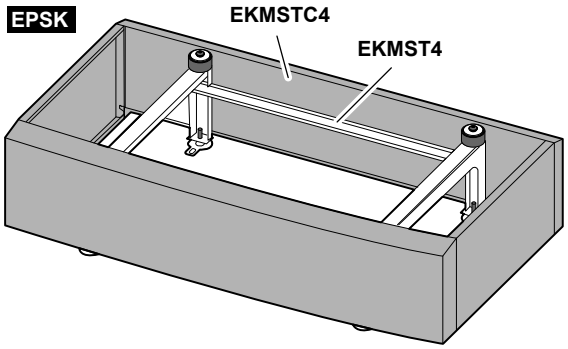
INFORMATION

In case of EPSKS04~07A*: You can use option kits EKMST5 (mounting stand) + EKMSTC5 (mounting stand cover). For installation instructions, see the installation manual of the mounting stand and mounting stand cover.

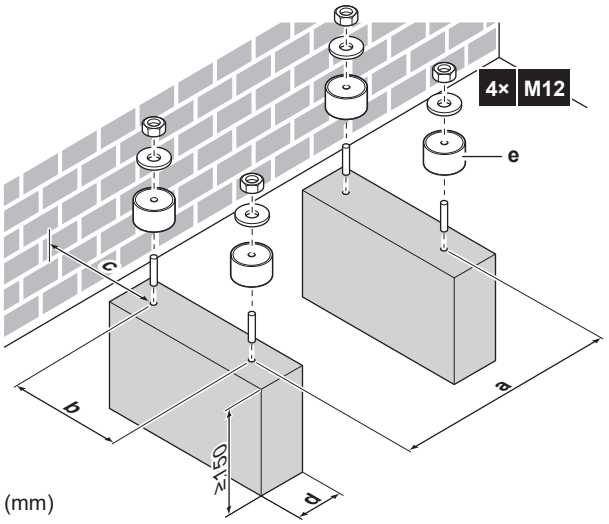


INFORMATION

In case of EPSK06~14A*: You can use option kits EKMST4 (mounting stand) + EKMSTC4 (mounting stand cover). For installation instructions, see the installation manual of the mounting stand and mounting stand cover.



Use 4 sets of M12 anchor bolts, nuts, washers and anti-vibration rubbers. 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.

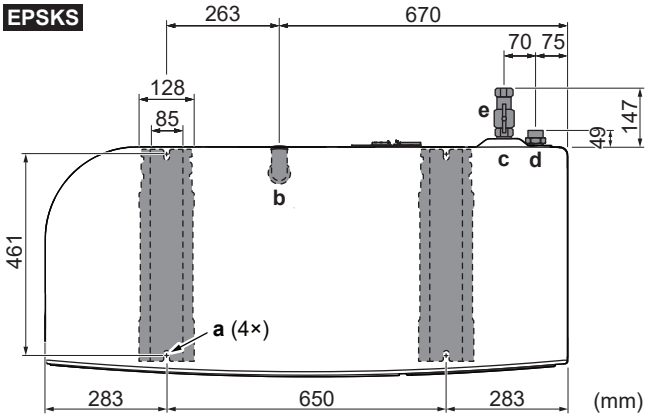


(mm)

	EPSKS04~07A*	EPSK06~14A*
a	650	830
b	461	619
c	≥323	≥300
d	Make sure not to cover the drain hole in the bottom plate of the unit.	
e	Anti-vibration rubber	

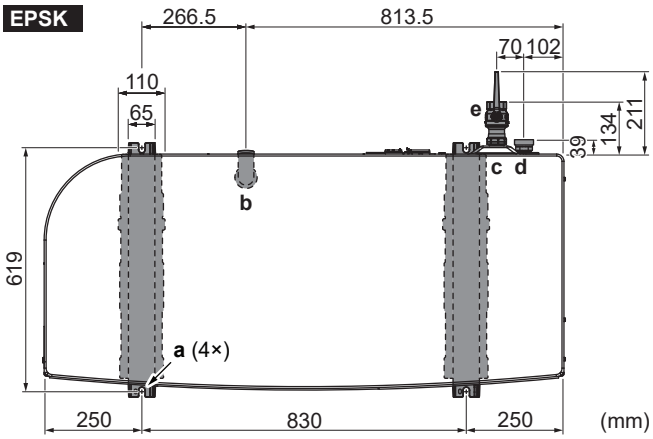
When providing the installation structure, take into account the location of the water piping (see also: "5.1.1 To connect the water piping" [▸ 13]) and drainage (see also: "4.2.3 To provide drainage" [▸ 11]).

In case of EPSKS04~07A*:



a Anchor points
b Drain hole + drain plug (delivered as accessory)
c Water IN
d Water OUT
e Shut-off valve with integrated filter and check valve (delivered as accessory)

In case of EPSK06~14A*:



a Anchor points
b Drain hole + drain plug (delivered as accessory)
c Water IN
d Water OUT
e Shut-off valve with integrated filter and check valve (delivered as accessory)

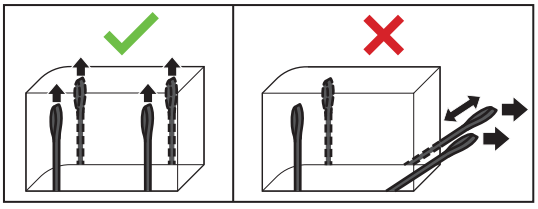
4.2.2 To install the outdoor unit

CAUTION

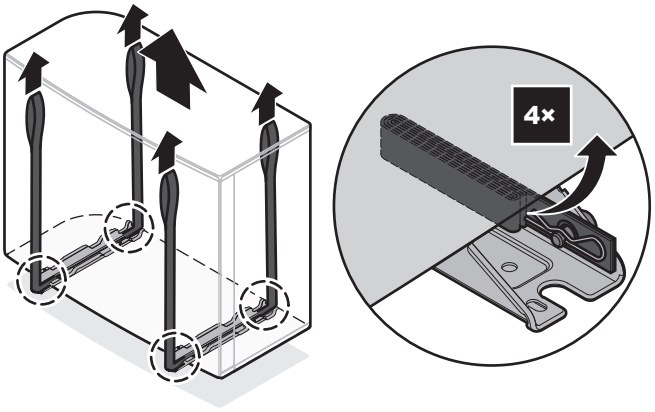
To avoid injury, do NOT touch the air inlet or aluminium fins of the unit.

NOTICE

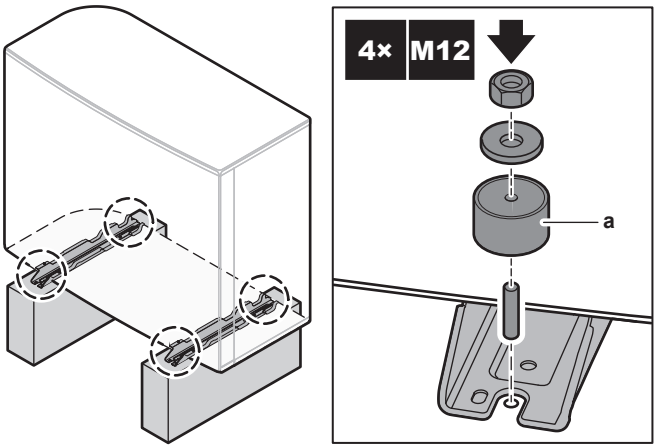
Do NOT pull the unit by the slings from the side.



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

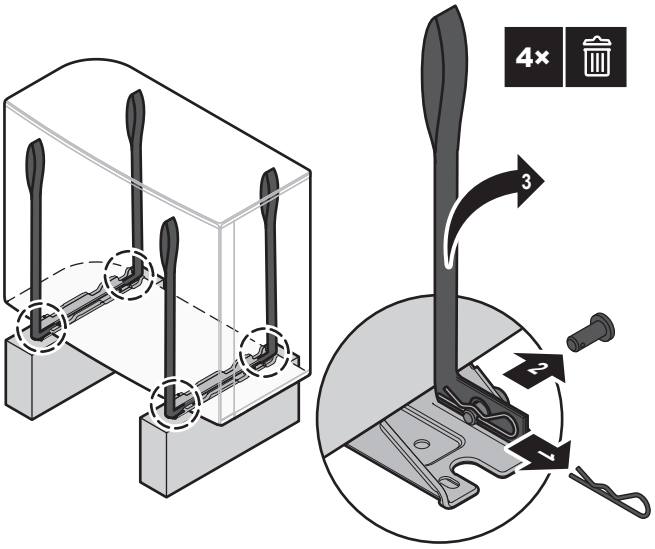


2 Fix the unit to the installation structure.



a Anti-vibration rubber (field supply)

3 Remove the slings (+ clips + pins), and dispose of them.



4.2.3 To provide drainage

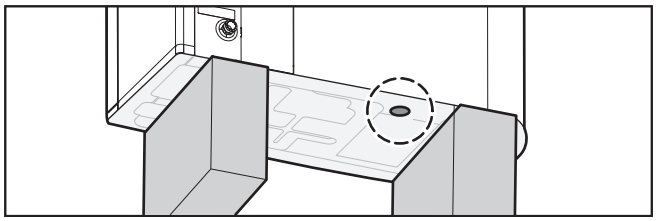
Make sure that condensation water can be evacuated properly.

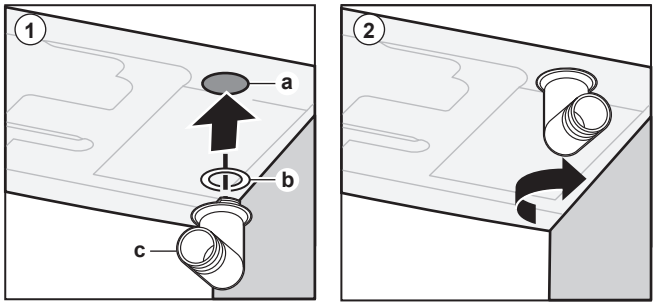
NOTICE

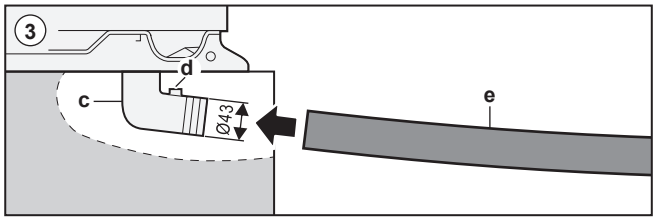
If the unit is installed in a cold climate, take adequate measures so that the evacuated condensate CANNOT freeze. We recommend to do the following:

- Insulate the drain hose.
- Install a drain tube heater (field supply). To connect the drain tube heater, see "6.4.1 To connect the electrical wiring to the outdoor unit" [▶ 16].

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 Hole for drain tube heater cable
e Hose (field supply)

NOTICE

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

For more information, see the installer reference guide.

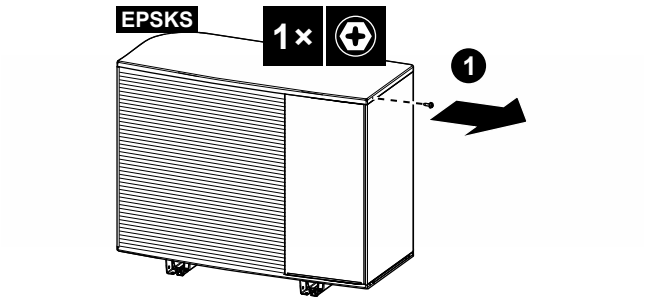
4.3 Opening and closing the unit

4.3.1 To open the outdoor unit (EPSKS)

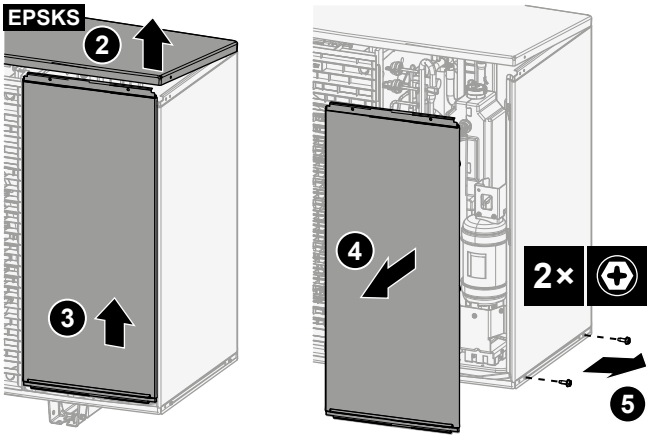
DANGER: RISK OF ELECTROCUTION

DANGER: RISK OF BURNING/SCALDING

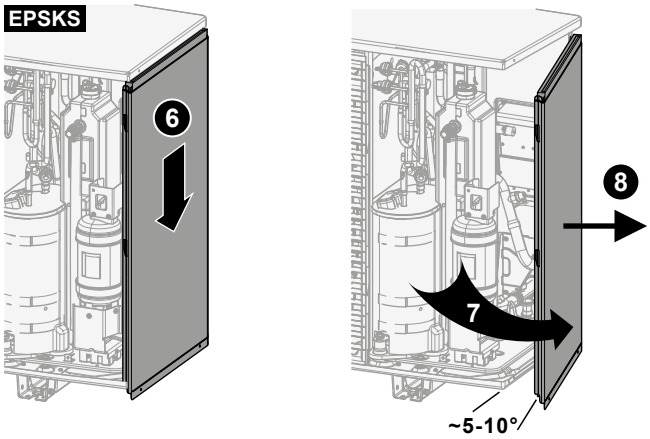
1 Open the screw of the top plate.



2 Lift the top plate slightly, then slide out the front plate and remove it.
Open the screws of the side plate



3 Slide out the side plate and remove it.

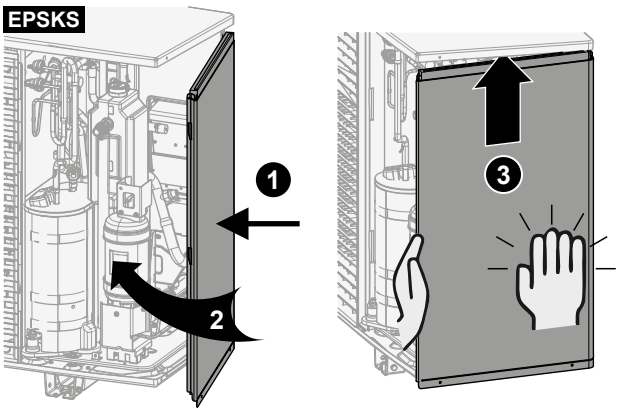


4.3.2 To close the outdoor unit (EPSKS)

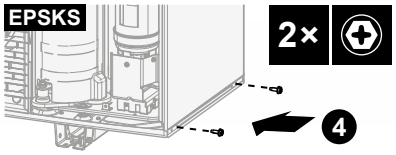
NOTICE

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

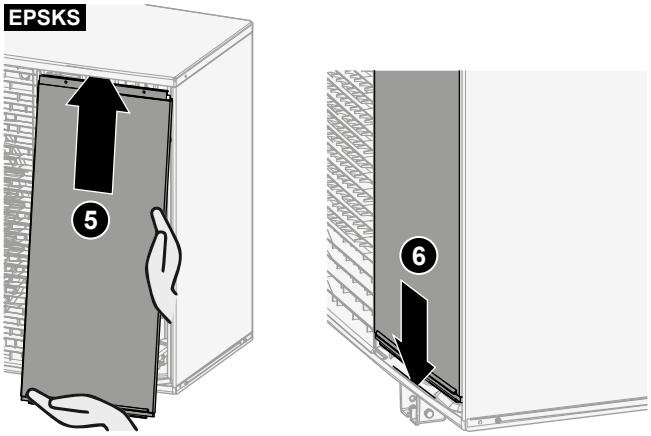
1 Slide in the side panel.



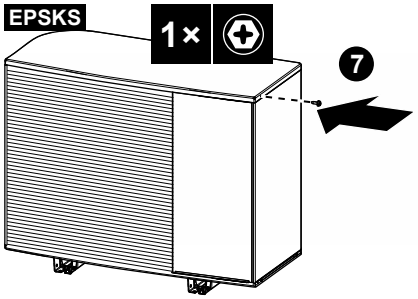
2 Close the screws of the side panel.



3 Slide in the front panel and close the top plate.



4 Close the screw of the top plate.

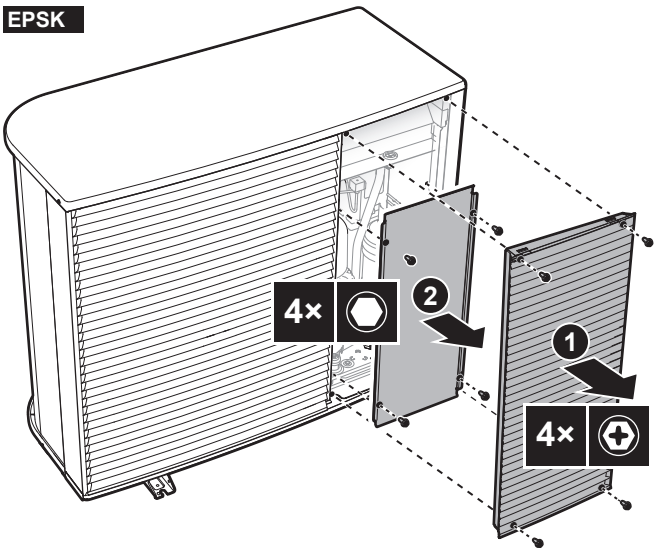


4.3.3 To open the outdoor unit (EPSK)

DANGER: RISK OF ELECTROCUTION

DANGER: RISK OF BURNING/SCALDING

EPSK

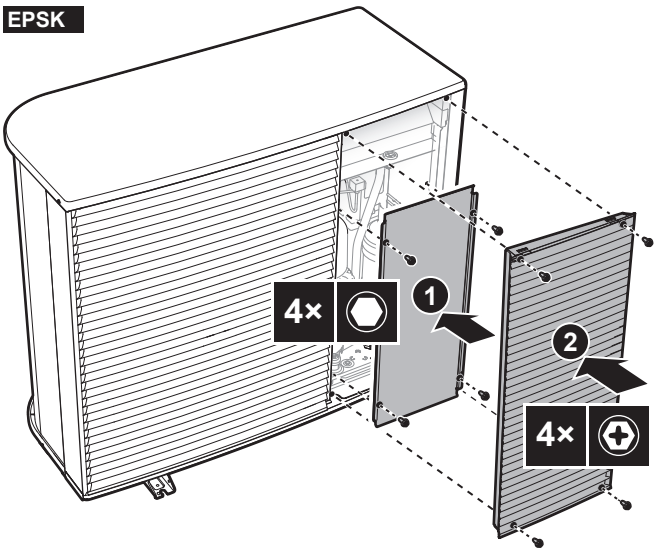


4.3.4 To close the outdoor unit (EPSK)

NOTICE

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

EPSK

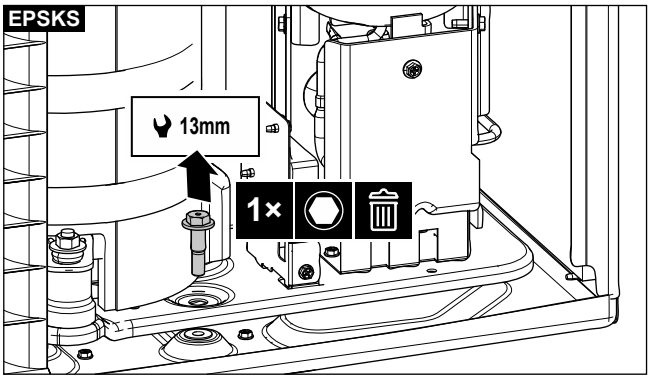


4.4 To remove the transportation bolt (+ washer)

The transportation bolt (+ washer) protects the unit during transport. During installation it must be removed (and disposed of).

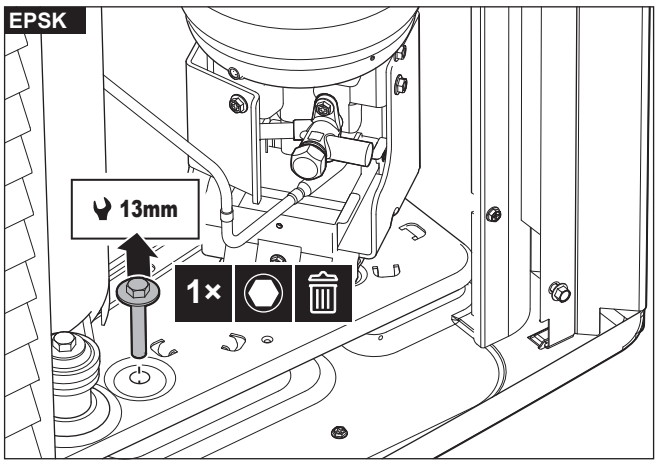
In case of EPSKS04~07A*:

EPSKS



In case of EPSK06~10A*:

EPSK



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.

NOTICE

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

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

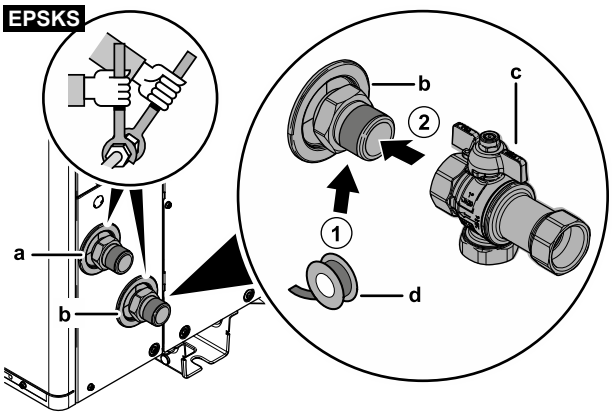
NOTICE

Install air purge valves at all local high points.

1 Connect the O-rings and shut-off valve to the outdoor unit water inlet. Mind the flow direction. Using 2 spanners for water piping connection is strongly recommended.

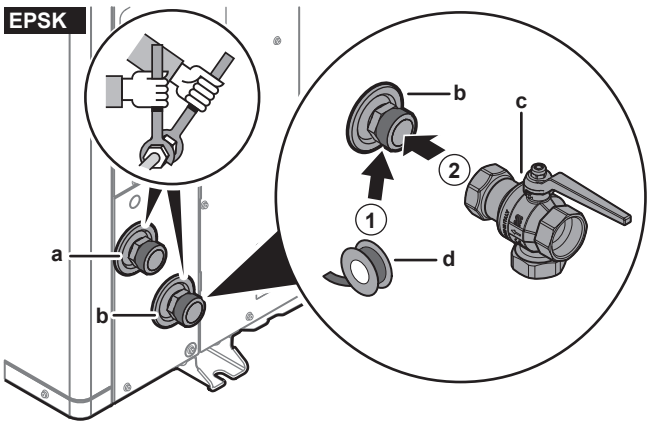
In case of EPSKS04~07A*:

EPSKS



a Water OUT (screw connection, male, 1")
b Water IN (screw connection, male, 1")
c Shut-off valve with integrated filter and check valve (delivered as accessory)(screw connections, female 1" – female 1")
d Thread sealant (field supply)

In case of EPSK06~14A*:



a Water OUT (screw connection, male, 1 1/4")
b Water IN (screw connection, male, 1 1/4")
c Shut-off valve with integrated filter and check valve (delivered as accessory)(screw connections, female 1 1/4" – female 1 1/4")
d Thread sealant (field supply)

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

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

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 unit is equipped with the following:

- The software is equipped with special frost protection functions such as water pipe freeze prevention that include the activation of a pump in case of low temperatures. However, in case of a power failure, these functions cannot guarantee protection.
- The outdoor unit is equipped with two factory mounted freeze protection valves. Freeze protection valves drain the water from the outdoor unit before it can freeze and damage the unit. This is to prevent R290 leaks in the outdoor unit. **Note:** The factory mounted freeze protection valves are designed to protect the outdoor unit, not the field piping.

To ensure protection of field piping, install **additional freeze protection valves** at all lowest points of the field piping. Insulate these field installed freeze protection valves in a similar way as the water piping, but do NOT insulate the inlet and outlet (release) of these valves.

Optionally, you can install **normally closed valves** (located indoors near the piping entry/exit points). These valves can prevent that all water from the indoor piping is drained when the freeze protection valves open. **Note:** The normally closed shut-off valve that is delivered as accessory with the indoor unit, which is mandatory to install on the indoor unit for safety reasons (inlet leak stop), does NOT prevent drainage of the indoor piping when the freeze protection valves open. For this, you need additional normally closed valves (optional).

For more information, see the installer reference guide.

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 valves (the opening temperature of the factory-mounted freeze protection valves is 3°C ±1).

If you set the minimum cooling setpoint lower than the safe value (i.e. maximum opening temperature of freeze protection valves + 2°C), you risk that the freeze protection valves open when cooling to the minimum setpoint.

WARNING

Adding anti-freeze solutions (e.g. glycol) to the water is NOT allowed.

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)
<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

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.

WARNING

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

These can cause overheating, electric shock or fire.

CAUTION

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

NOTICE

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

6.1 About electrical compliance

Only for EPSKS04~07A▲V3▼ and EPSK06~10A▲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 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	
		EPSKS04A*	EPSKS06A*	EPSKS07A*	EPSK06~10A*	EPSK08+10A*	EPSK12+14A*
Power supply:							
	Rated current	13 A	15.2 A	21.4 A	24.2 A	10.9 A	15 A
	Voltage	220-240 V				380-415 V	
	Phase	1~				3N~	
	Frequency	50 Hz					
	Wire size	MUST comply with national wiring regulation. Wire size based on the current, but not less than 2.5 mm²					
		3-core cable				5-core cable	
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					
(Optional) Drain tube heater cable		Make sure to comply with the following: 3-core cable 0.75 mm² MUST be double insulated. Maximum power allowed for drain tube heater = 115 W (0.5 A). Drain tube heater MUST be suitable for R290 (explosion proof). Drain tube heater is only powered during defrost operation and remains ON for some extra minutes after defrost is finished.					
Recommended field fuse		16 A, C curve		25 A, C curve		16 A, C curve	
Earth leakage circuit breaker / residual current device		In the power supply line, ALWAYS install a residual current device (RCD) that complies with the national wiring regulation. This MUST be an RCD of 30 mA with an instantaneous action, unless otherwise defined by the national wiring regulation.					

6.3 Guidelines when connecting the electrical wiring

Tightening torques

Outdoor unit:

Item	Tightening torque (N•m)
X1M (M5)	2.45 ±10%
X2M (M3.5)	0.88 ±10%
M4 (earth)	1.31 ±10%

6.4 Connections to the outdoor unit

Item	Description
Power supply	See "6.4.1 To connect the electrical wiring to the outdoor unit" [▸ 16].
Interconnection cable	
(Optional) Drain tube heater	
"Do NOT turn OFF the circuit breaker" stickers	See "6.4.2 To fix the "Do NOT turn OFF the circuit breaker" stickers" [▸ 18].
Air thermistor	See "6.4.3 To reposition the air thermistor on the outdoor unit" [▸ 18].

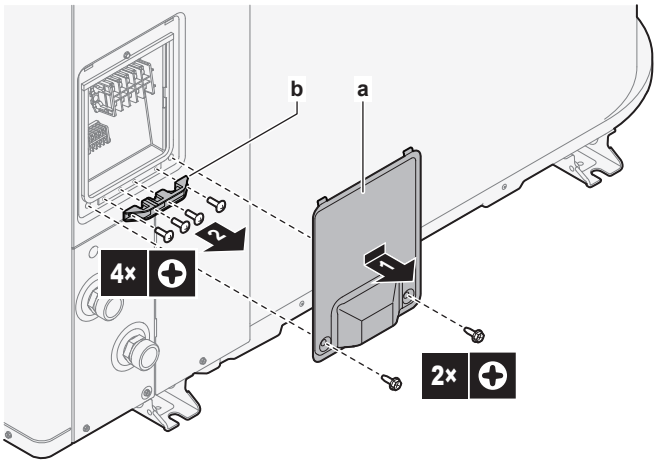
6.4.1 To connect the electrical wiring to the outdoor unit

WARNING

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

These can cause overheating, electric shock or fire.

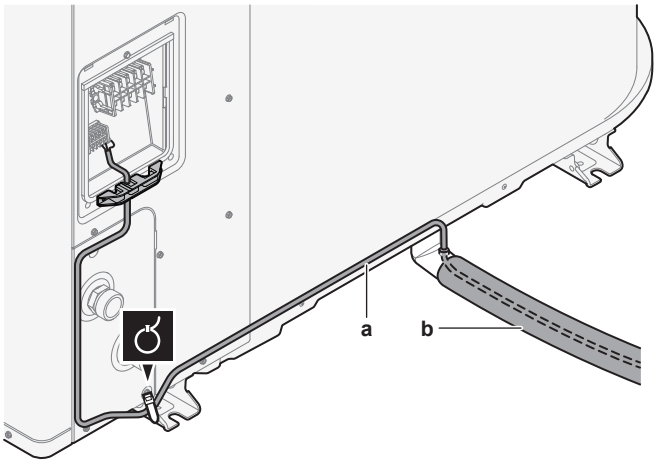
1 Remove the cover and the wire retainer.



a Cover
b Wire retainer

2 Connect the wiring (see wiring overviews below):

- Power supply (1N~ or 3N~).
- Interconnection cable (indoor↔outdoor)
- (Optional) Drain tube heater. Make sure the heating element of the drain tube heater is completely inside the drain tube. Fix the cable with a cable tie to the unit's foot.

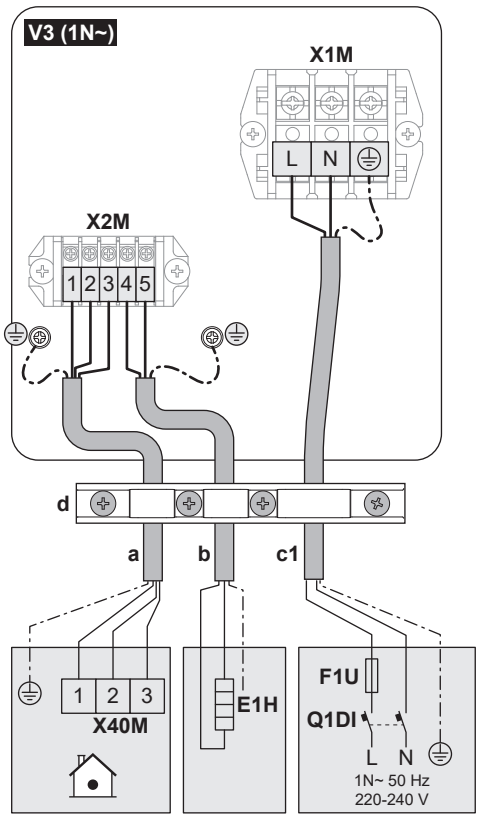


a Drain tube heater cable
b Drain tube

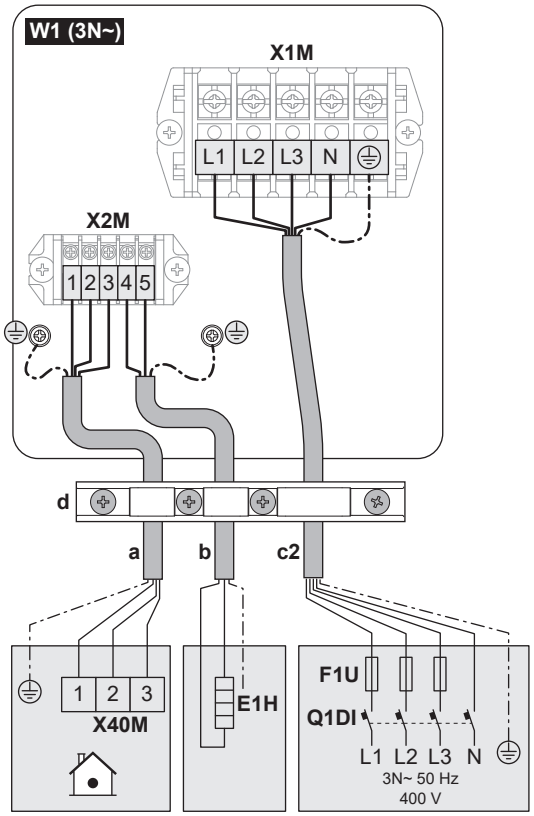
3 Reattach the wire retainer and the cover.

- Check that the wires do NOT disconnect by pulling them lightly.
- Firmly secure the wire retainer to avoid external stress on wire terminations.

Wiring overview: V3 models (1N~)



Wiring overview: W1 models (3N~)



Legend of wiring overviews

(see also "6.2 Specifications of standard wiring components" [▶ 16])

a	Interconnection cable (indoor↔outdoor)
b	(Optional) Drain tube heater cable
c1	Power supply cable in case of V3 models (1N~)

c2	Power supply cable in case of W1 models (3N~)
d	Wire retainer
E1H	Drain tube heater
F1U	Field fuse
Q1DI	Earth leakage circuit breaker

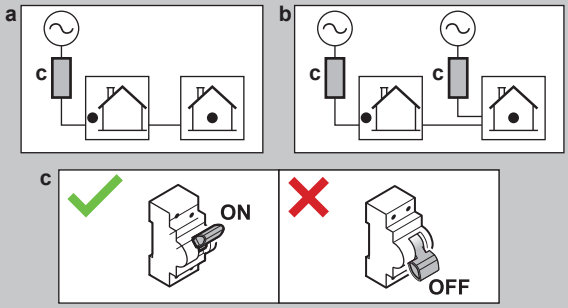
6.4.2 To fix the "Do NOT turn OFF the circuit breaker" stickers

WARNING

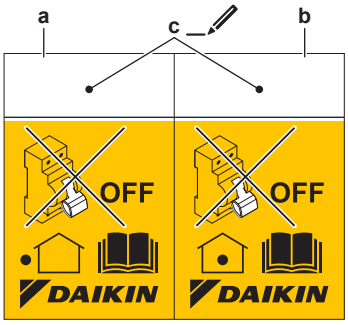
After commissioning, do NOT turn OFF the circuit breakers (**c**) to the units so that the protection remains activated.

In case of floor-standing or wall-mounted units: In case of normal kWh rate power supply (**a**), there is one circuit breaker. In case of preferential kWh rate power supply (**b**), there are two.

In case of ECH$_2$O units: In case of indoor unit supplied separately (**b**), there are two circuit breakers. In case of indoor unit supplied from the outdoor unit (**a**), there is one circuit breaker.



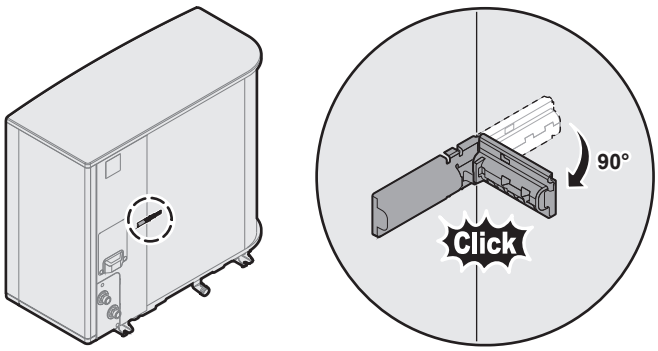
To warn the user, fix the 'Do NOT turn OFF the circuit breaker' stickers in the electrical cabinet and as close as possible to the circuit breakers of the heat pump. On the sticker, fill in the reference number of the circuit breaker to ensure maximum clarity.



a Sticker for the circuit breaker to the outdoor unit
b Sticker for the circuit breaker to the indoor unit (only in case of preferential kWh rate power supply)
c Reference number of the circuit breaker in the electrical cabinet

6.4.3 To reposition the air thermistor on the outdoor unit

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



7 Starting up the outdoor unit

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

WARNING

Do NOT open the stop valve of the outdoor unit's refrigerant vessel until instructed by the user interface of the indoor unit.

For safe transportation, almost all refrigerant is stored in the refrigerant vessel of the outdoor unit. During commissioning, when performing the unlocking procedure of the outdoor unit (via the e-Care app and the user interface of the indoor unit), the stop valve of the refrigerant vessel must be fully opened (when instructed by the user interface) and remain open.

For more information, see the indoor unit installation manual.

7.1 Checklist before commissioning the outdoor unit

In addition to the commissioning check items in the indoor unit installation manual, check the following outdoor unit commissioning items:

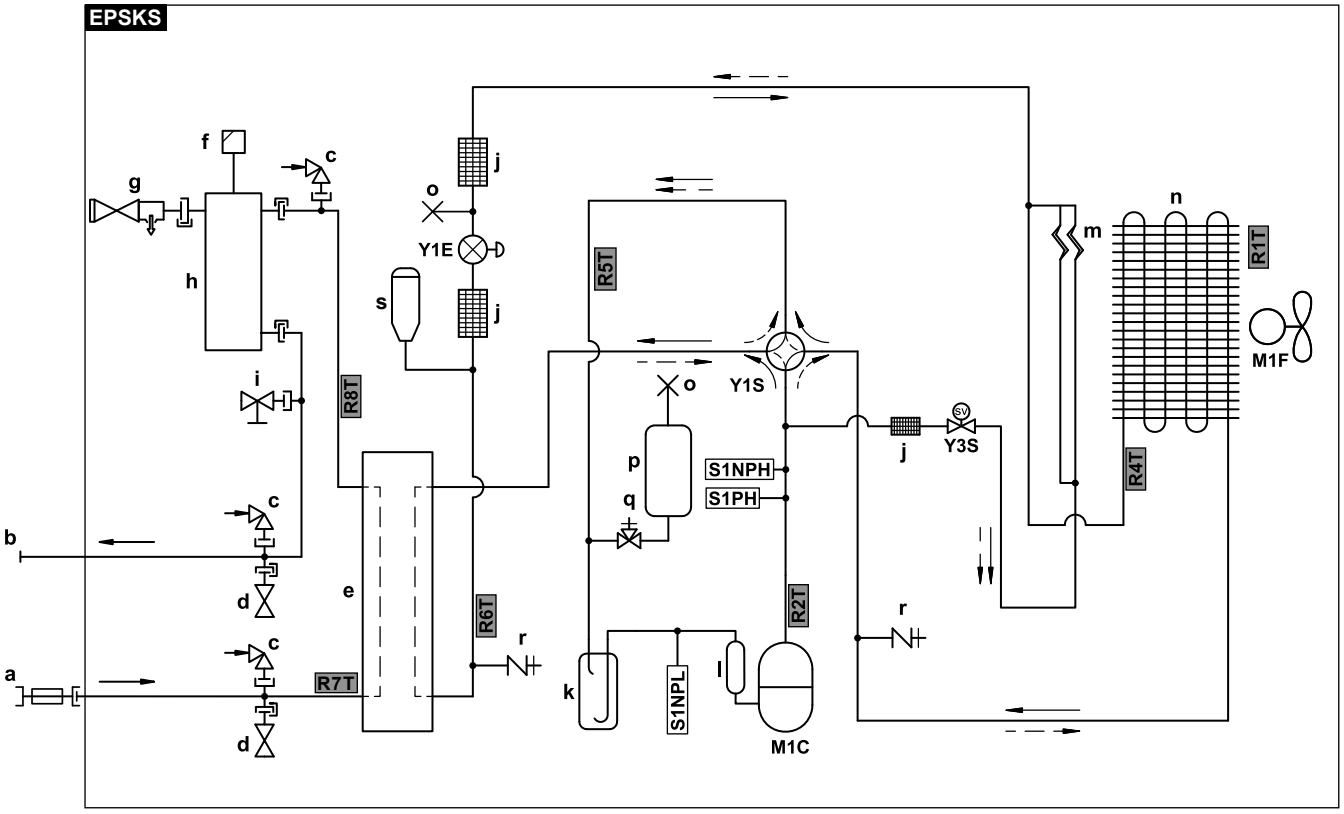
☐	Before starting work, you checked the safety items in "2.1 Safety checklist before work on R290 units" [▶ 7].
☐	The outdoor unit is properly mounted. See "4.2 Mounting the outdoor unit" [▶ 9].
☐	The outdoor unit's transportation bolt (+ washer) is removed. See "4.4 To remove the transportation bolt (+ washer)" [▶ 13].
☐	The outdoor unit is installed in a suitable location. See "4.1.1 Installation site requirements of the outdoor unit" [▶ 8].
☐	The "protective zone" around the outdoor unit is respected. See "4.1.1 Installation site requirements of the outdoor unit" [▶ 8].
☐	The shut-off valve is connected to the outdoor unit water inlet. See "5.1.1 To connect the water piping" [▶ 13].
☐	A correct field fuse and earth leakage circuit breaker are installed on the outdoor unit's power supply. The fuses, circuit breakers, or locally installed protection devices are of the size and type specified in "6.2 Specifications of standard wiring components" [▶ 16], and have NOT been bypassed.
☐	The "Do NOT turn OFF the circuit breaker" stickers are fixed in the electrical cabinet. See "6.4.2 To fix the "Do NOT turn OFF the circuit breaker" stickers" [▶ 18].

8 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).

8.1 Piping diagram: Outdoor unit

In case of EPSKS04~07A*:



3D157908 B

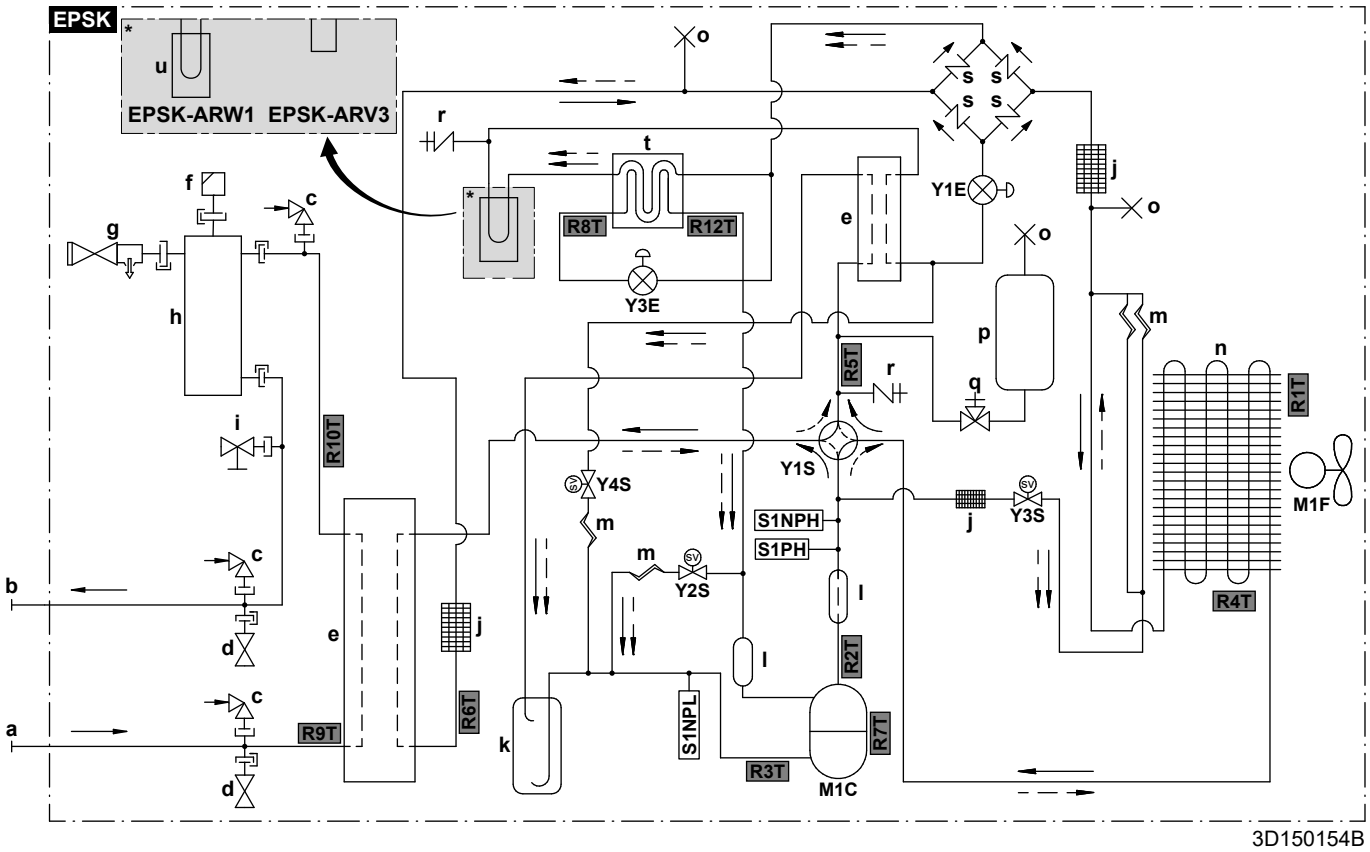
a Water IN (Ball valve with integrated check valve and filter)
b Water OUT (screw connection, male, 1")
c Vacuum breaker
d Freeze protection valve
e Plate heat exchanger
f Automatic air purge valve
g Pressure relief valve
h Gas separator
i Drain valve
j Filter
k Accumulator
l Muffler
m Capillary tube
n Air heat exchanger
o Pinched pipe
p Refrigerant vessel
q Stop valve
r Service port 5/16" flare
s Liquid Receiver

Refrigerant flow:
Heating
Cooling

M1C Compressor
M1F Fan motor
S1PH High pressure switch
S1NPH High pressure sensor
S1NPL Low pressure sensor
Y1E Electronic expansion valve (main)
Y1S Solenoid valve (4-way valve)
Y3S Solenoid valve (hot gas bypass)

Thermistors:
R1T Outdoor air
R2T Compressor discharge
R4T Air heat exchanger
R5T 4-way valve suction
R6T Refrigerant liquid
R7T Water inlet
R8T Water outlet

In case of EPSK06~10A*:



3D150154B

- **a** Water IN (screw connection, male, 1 1/4")
- **b** Water OUT (screw connection, male, 1 1/4")
- **c** Vacuum breaker
- **d** Freeze protection valve
- **e** Plate heat exchanger
- **f** Automatic air purge valve
- **g** Pressure relief valve
- **h** Gas separator
- **i** Drain valve
- **j** Filter
- **k** Accumulator
- **l** Muffler
- **m** Capillary tube
- **n** Air heat exchanger
- **o** Pinched pipe
- **p** Refrigerant vessel
- **q** Stop valve
- **r** Service port 5/16" flare
- **s** One-way valve
- **t** Economiser
- **u** PCB cooling

Refrigerant flow:

- Heating
- Cooling

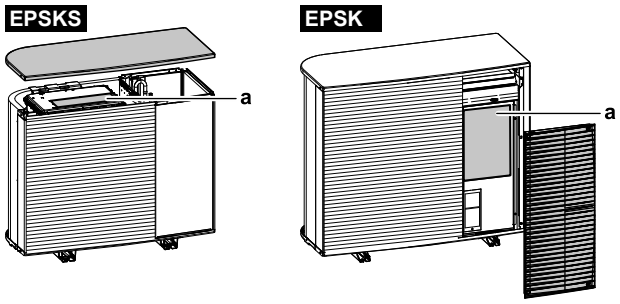
- **M1C** Compressor
- **M1F** Fan motor
- **S1PH** High pressure switch
- **S1NPH** High pressure sensor
- **S1NPL** Low pressure sensor
- **Y1E** Electronic expansion valve (main)
- **Y3E** Electronic expansion valve (injection)
- **Y1S** Solenoid valve (4-way valve)
- **Y2S** Solenoid valve (low pressure bypass)
- **Y3S** Solenoid valve (hot gas bypass)
- **Y4S** Solenoid valve (liquid injection)

Thermistors:

- **R1T** Outdoor air
- **R2T** Compressor discharge
- **R3T** Compressor suction
- **R4T** Air heat exchanger
- **R5T** 4-way valve suction
- **R6T** Refrigerant liquid
- **R7T** Compressor shell
- **R8T** Injection before economiser
- **R9T** Water IN
- **R10T** Water OUT
- **R12T** Injection after economiser

8.2 Wiring diagram: Outdoor unit

The wiring diagram (only needed for servicing purposes, not for installation) is delivered with the unit:



a Wiring diagram

English	Translation
Back side view	Back side view
Electronic component assembly	Electronic component assembly
Indoor	Indoor
Outdoor	Outdoor
Position of compressor terminal	Position of compressor terminal
Position of elements	Position of elements
See note ***	See note ***
Service/Dchecker	Service / D-checker
Top side view	Top side view

Notes:

1	Symbols:	
	L	Live
	N	Neutral
	⏚	Protective earth
	⏚	Noiseless earth
	□□□	Terminal strip
	-o-	Terminal
	⊙⊙	Connector
	-●-	Connection
	▮▮	Field wiring
	=:=	Option
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 device S1PH.	
5	Refer to the combination table and the option manual for how to connect the wiring to X2M.	

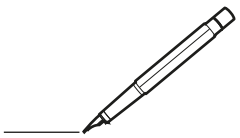
Legend in case of V3 models (1N~):

A1P	Printed circuit board (main)
A3P	Printed circuit board (leakage current)
A4P	Printed circuit board (ACS)
E1H	Drain tube heater (field supply)
E1HC	Crank case heater
F1U	Field fuse (field supply)
F10U (A1P)	Fuse (T 6.3 A / 250 V)
H1P (A1P)	Light-emitting diode (service monitor is orange)
HAP (A1P, A4P)	Light-emitting diode (service monitor is green)
K2R (A1P)	Magnetic relay (Y3S)
K3R (A1P)	Magnetic relay (Y2S)
M1C	Compressor motor
M1F	Fan motor
Q1DI	Earth leakage circuit breaker (30 mA) (field supply)
R1T	Thermistor (outdoor air)
R2T	Thermistor (compressor discharge)
R3T	Thermistor (compressor suction)
R4T	Thermistor (air heat exchanger)
R5T	Thermistor (4-way valve suction)
R6T	Thermistor (refrigerant liquid)
R7T	Thermistor (compressor shell)
R8T	Thermistor (injection before economiser)
R9T	Thermistor (water IN)
R10T	Thermistor (water OUT)
R12T	Thermistor (injection after economiser)
S1NG	Gas sensor
S1NPH	High pressure sensor
S1NPL	Low pressure sensor
S1PH	High pressure switch
T1A	Current transformer
X*A, X*Y	Connectors
X*M	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)
Z*C	Noise filter (ferrite core)

Legend in case of W1 models (3N~):

A1P	Printed circuit board (main)
A2P	Printed circuit board (net filter)
A3P	Printed circuit board (leakage current)
A4P	Printed circuit board (ACS)
E1H	Drain tube heater (field supply)
E1HC	Crank case heater
F1U	Field fuse (field supply)
FINTh	Thermistor (fin)
HAP (A1P, A4P)	Light-emitting diode (service monitor is green)
K2R (A1P)	Magnetic relay (Y2S)
K3R (A1P)	Magnetic relay (Y3S)
M1C	Compressor motor
M1F	Fan motor

Q1DI	Earth leakage circuit breaker (30 mA) (field supply)
R1T	Thermistor (outdoor air)
R2T	Thermistor (compressor discharge)
R3T	Thermistor (compressor suction)
R4T	Thermistor (air heat exchanger)
R5T	Thermistor (4-way valve suction)
R6T	Thermistor (refrigerant liquid)
R7T	Thermistor (compressor shell)
R8T	Thermistor (injection before economiser)
R9T	Thermistor (water IN)
R10T	Thermistor (water OUT)
R11T	Thermistor (heat pipe)
R12T	Thermistor (injection after economiser)
S1NG	Gas sensor
S1NPH	High pressure sensor
S1NPL	Low pressure sensor
S1PH	High pressure switch
T1A	Current transformer
X*M	Terminal strip
X*Y	Connectors
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)
Z*C	Noise filter (ferrite core)



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DAIKIN EUROPE N.V.
Zandvoordestraat 300, B-8400 Oostende, Belgium

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